

Oct-67	0.0045	Oct-67
Nov-67	0.0045	Nov-67
Dec-67	0.0044	Dec-67
Jan-68	0.0050	Jan-68
Feb-68	0.0042	Feb-68
Mar-68	0.0043	Mar-68
Apr-68	0.0049	Apr-68
May-68	0.0046	May-68
Jun-68	0.0042	Jun-68
Jul-68	0.0048	Jul-68
Aug-68	0.0042	Aug-68
Sep-68	0.0044	Sep-68
Oct-68	0.0045	Oct-68
Nov-68	0.0043	Nov-68
Dec-68	0.0049	Dec-68
Jan-69	0.0050	Jan-69
Feb-69	0.0046	Feb-69
Mar-69	0.0047	Mar-69
Apr-69	0.0055	Apr-69
May-69	0.0047	May-69
Jun-69	0.0055	Jun-69
Jul-69	0.0052	Jul-69
Aug-69	0.0048	Aug-69
Sep-69	0.0055	Sep-69
Oct-69	0.0057	Oct-69
Nov-69	0.0049	Nov-69
Dec-69	0.0060	Dec-69
Jan-70	0.0056	Jan-70
Feb-70	0.0052	Feb-70
Mar-70	0.0056	Mar-70
Apr-70	0.0054	Apr-70
May-70	0.0055	May-70
Jun-70	0.0064	Jun-70
Jul-70	0.0059	Jul-70
Aug-70	0.0057	Aug-70
Sep-70	0.0056	Sep-70

	Oct-70						0.0055		Oct-70
	Nov-70						0.0058		Nov-70
	Dec-70						0.0053		Dec-70
	Jan-71						0.0051		Jan-71
	Feb-71						0.0046		Feb-71
	Mar-71						0.0056		Mar-71
	Apr-71						0.0048		Apr-71
	May-71						0.0047		May-71
	Jun-71						0.0056		Jun-71
	Jul-71						0.0052		Jul-71
	Aug-71						0.0055		Aug-71
	Sep-71						0.0049		Sep-71
	Oct-71						0.0047		Oct-71
	Nov-71						0.0051		Nov-71
	Dec-71						0.0050		Dec-71
	Jan-72						0.0050		Jan-72
	Feb-72						0.0047		Feb-72
	Mar-72						0.0049		Mar-72
	Apr-72						0.0048		Apr-72
	May-72						0.0055		May-72
	Jun-72						0.0049		Jun-72
	Jul-72						0.0051		Jul-72
	Aug-72						0.0049		Aug-72
	Sep-72						0.0047		Sep-72
	Oct-72						0.0052		Oct-72
	Nov-72						0.0048		Nov-72
78	Dec-72	SOUTHWEST GAS CORP	SWGS	-14.188	-66	0	0.0045		Dec-72
78	Jan-73	SOUTHWEST GAS CORP	SWGS	-13.938	-0.01762	0	0.0054	-0.0230	Jan-73
78	Feb-73	SOUTHWEST GAS CORP	SWGS	-13.313	-0.02691	0.25	0.0051	-0.0320	Feb-73
78	Mar-73	SOUTHWEST GAS CORP	SWGS	-13.313	0	0	0.0056	-0.0056	Mar-73
78	Apr-73	SOUTHWEST GAS CORP	SWGS	-12.563	-0.05634	0	0.0057	-0.0620	Apr-73
78	May-73	SOUTHWEST GAS CORP	SWGS	-12.438	0.00995	0.25	0.0058	0.0042	May-73
78	Jun-73	SOUTHWEST GAS CORP	SWGS	-12.813	0.030151	0	0.0055	0.0247	Jun-73
78	Jul-73	SOUTHWEST GAS CORP	SWGS	-11.938	-0.06829	0	0.0061	-0.0744	Jul-73
78	Aug-73	SOUTHWEST GAS CORP	SWGS	-11.813	0.010471	0.25	0.0062	0.0043	Aug-73
78	Sep-73	SOUTHWEST GAS CORP	SWGS	-11.813	0	0	0.0055	-0.0055	Sep-73

78	Oct-73	SOUTHWEST GAS CORP	SWGS	-11.875	0.005291	0	0.0063	-0.0010	Oct-73
78	Nov-73	SOUTHWEST GAS CORP	SWGS	-8.8125	-0.23684	0.25	0.0056	-0.2424	Nov-73
78	Dec-73	SOUTHWEST GAS CORP	SWGS	-9.8125	0.113475	0	0.0060	0.1075	Dec-73
78	Jan-74	SOUTHWEST GAS CORP	SWGS	-12.063	0.229299	0	0.0061	0.2232	Jan-74
78	Feb-74	SOUTHWEST GAS CORP	SWGS	-11.563	-0.02073	0.25	0.0055	-0.0262	Feb-74
78	Mar-74	SOUTHWEST GAS CORP	SWGS	-10.938	-0.05405	0	0.0058	-0.0599	Mar-74
78	Apr-74	SOUTHWEST GAS CORP	SWGS	-10.188	-0.06857	0	0.0068	-0.0754	Apr-74
78	May-74	SOUTHWEST GAS CORP	SWGS	-9.125	-0.07976	0.25	0.0068	-0.0866	May-74
78	Jun-74	SOUTHWEST GAS CORP	SWGS	-8.125	-0.10959	0	0.0061	-0.1157	Jun-74
78	Jul-74	SOUTHWEST GAS CORP	SWGS	-8.4375	0.038462	0	0.0072	0.0313	Jul-74
78	Aug-74	SOUTHWEST GAS CORP	SWGS	-7.1875	-0.11852	0.25	0.0065	-0.1250	Aug-74
78	Sep-74	SOUTHWEST GAS CORP	SWGS	-7.8125	0.086957	0	0.0071	0.0799	Sep-74
78	Oct-74	SOUTHWEST GAS CORP	SWGS	-8.0625	0.032	0	0.0070	0.0250	Oct-74
78	Nov-74	SOUTHWEST GAS CORP	SWGS	-7.0625	-0.09302	0.25	0.0062	-0.0992	Nov-74
78	Dec-74	SOUTHWEST GAS CORP	SWGS	-7.3125	0.035398	0	0.0067	0.0287	Dec-74
78	Jan-75	SOUTHWEST GAS CORP	SWGS	-8.5625	0.205128	0.25	0.0068	0.1983	Jan-75
78	Feb-75	SOUTHWEST GAS CORP	SWGS	-7.6875	-0.10219	0	0.0060	-0.1082	Feb-75
78	Mar-75	SOUTHWEST GAS CORP	SWGS	-7.875	0.02439	0	0.0066	0.0178	Mar-75
78	Apr-75	SOUTHWEST GAS CORP	SWGS	-8.3125	0.055556	0	0.0067	0.0489	Apr-75
78	May-75	SOUTHWEST GAS CORP	SWGS	-8.1875	0.015038	0.25	0.0067	0.0083	May-75
78	Jun-75	SOUTHWEST GAS CORP	SWGS	-9.5625	0.167939	0	0.0070	0.1609	Jun-75
78	Jul-75	SOUTHWEST GAS CORP	SWGS	-9.8125	0.026144	0	0.0068	0.0193	Jul-75
78	Aug-75	SOUTHWEST GAS CORP	SWGS	-9.1875	-0.03822	0.25	0.0065	-0.0447	Aug-75
78	Sep-75	SOUTHWEST GAS CORP	SWGS	-9.1875	0	0	0.0073	-0.0073	Sep-75
78	Oct-75	SOUTHWEST GAS CORP	SWGS	-9.9375	0.081633	0	0.0072	0.0744	Oct-75
78	Nov-75	SOUTHWEST GAS CORP	SWGS	-10.063	0.037736	0.25	0.0061	0.0316	Nov-75
78	Dec-75	SOUTHWEST GAS CORP	SWGS	-10.063	0	0	0.0074	-0.0074	Dec-75
78	Jan-76	SOUTHWEST GAS CORP	SWGS	-11.313	0.124224	0	0.0065	0.1177	Jan-76
78	Feb-76	SOUTHWEST GAS CORP	SWGS	-10.313	-0.0663	0.25	0.0060	-0.0723	Feb-76
78	Mar-76	SOUTHWEST GAS CORP	SWGS	-10.563	0.024242	0	0.0071	0.0171	Mar-76
78	Apr-76	SOUTHWEST GAS CORP	SWGS	-10.563	0	0	0.0064	-0.0064	Apr-76
78	May-76	SOUTHWEST GAS CORP	SWGS	-9.9375	-0.0355	0.25	0.0059	-0.0414	May-76
78	Jun-76	SOUTHWEST GAS CORP	SWGS	-9.9375	0	0	0.0073	-0.0073	Jun-76
78	Jul-76	SOUTHWEST GAS CORP	SWGS	-10.438	0.050314	0	0.0065	0.0438	Jul-76
78	Aug-76	SOUTHWEST GAS CORP	SWGS	-10.313	0.011976	0.25	0.0069	0.0051	Aug-76
78	Sep-76	SOUTHWEST GAS CORP	SWGS	-10.563	0.024242	0	0.0064	0.0178	Sep-76

78	Oct-76	SOUTHWEST GAS CORP	SWGS	-10.813	0.023669	0	0.0061	0.0176	Oct-76
78	Nov-76	SOUTHWEST GAS CORP	SWGS	-10.188	-0.03468	0.25	0.0066	-0.0413	Nov-76
78	Dec-76	SOUTHWEST GAS CORP	SWGS	-10.938	0.07362	0	0.0063	0.0673	Dec-76
78	Jan-77	SOUTHWEST GAS CORP	SWGS	-11.438	0.045714	0	0.0059	0.0398	Jan-77
78	Feb-77	SOUTHWEST GAS CORP	SWGS	-10.688	-0.04372	0.25	0.0057	-0.0494	Feb-77
78	Mar-77	SOUTHWEST GAS CORP	SWGS	-10.688	0	0	0.0065	-0.0065	Mar-77
78	Apr-77	SOUTHWEST GAS CORP	SWGS	-11.063	0.035088	0	0.0061	0.0290	Apr-77
78	May-77	SOUTHWEST GAS CORP	SWGS	-10.813	0	0.25	0.0067	-0.0067	May-77
78	Jun-77	SOUTHWEST GAS CORP	SWGS	-11.063	0.023121	0	0.0062	0.0169	Jun-77
78	Jul-77	SOUTHWEST GAS CORP	SWGS	-11.813	0.067797	0	0.0059	0.0619	Jul-77
78	Aug-77	SOUTHWEST GAS CORP	SWGS	-11.313	-0.02116	0.25	0.0067	-0.0279	Aug-77
78	Sep-77	SOUTHWEST GAS CORP	SWGS	-11.438	0.01105	0	0.0061	0.0050	Sep-77
78	Oct-77	SOUTHWEST GAS CORP	SWGS	-11.063	-0.03279	0	0.0063	-0.0391	Oct-77
78	Nov-77	SOUTHWEST GAS CORP	SWGS	-10.813	0	0.25	0.0063	-0.0063	Nov-77
78	Dec-77	SOUTHWEST GAS CORP	SWGS	-10.813	0	0	0.0062	-0.0062	Dec-77
78	Jan-78	SOUTHWEST GAS CORP	SWGS	-11.188	0.034682	0	0.0069	0.0278	Jan-78
78	Feb-78	SOUTHWEST GAS CORP	SWGS	-10.813	-0.01117	0.25	0.0060	-0.0172	Feb-78
78	Mar-78	SOUTHWEST GAS CORP	SWGS	-11.188	0.034682	0	0.0069	0.0278	Mar-78
78	Apr-78	SOUTHWEST GAS CORP	SWGS	-11.563	0.03352	0	0.0063	0.0272	Apr-78
78	May-78	SOUTHWEST GAS CORP	SWGS	-10.563	-0.064	0.26	0.0075	-0.0715	May-78
78	Jun-78	SOUTHWEST GAS CORP	SWGS	-10.938	0.035503	0	0.0069	0.0286	Jun-78
78	Jul-78	SOUTHWEST GAS CORP	SWGS	-11.563	0.057143	0	0.0073	0.0498	Jul-78
78	Aug-78	SOUTHWEST GAS CORP	SWGS	-11.813	0.044108	0.26	0.0070	0.0371	Aug-78
78	Sep-78	SOUTHWEST GAS CORP	SWGS	-11.688	-0.01058	0	0.0065	-0.0171	Sep-78
78	Oct-78	SOUTHWEST GAS CORP	SWGS	-9.9375	-0.14973	0	0.0073	-0.1570	Oct-78
78	Nov-78	SOUTHWEST GAS CORP	SWGS	-11.188	0.15195	0.26	0.0071	0.1449	Nov-78
78	Dec-78	SOUTHWEST GAS CORP	SWGS	-10.563	-0.05587	0	0.0068	-0.0627	Dec-78
78	Jan-79	SOUTHWEST GAS CORP	SWGS	-11.188	0.059172	0	0.0079	0.0513	Jan-79
78	Feb-79	SOUTHWEST GAS CORP	SWGS	-10.938	0.000894	0.26	0.0065	-0.0056	Feb-79
78	Mar-79	SOUTHWEST GAS CORP	SWGS	-11.188	0.022857	0	0.0074	0.0155	Mar-79
78	Apr-79	SOUTHWEST GAS CORP	SWGS	-11.688	0.044693	0	0.0076	0.0371	Apr-79
78	May-79	SOUTHWEST GAS CORP	SWGS	-11.188	-0.01925	0.275	0.0077	-0.0270	May-79
78	Jun-79	SOUTHWEST GAS CORP	SWGS	-11.688	0.044693	0	0.0071	0.0376	Jun-79
78	Jul-79	SOUTHWEST GAS CORP	SWX	12.125	0.037433	0	0.0076	0.0298	Jul-79
78	Aug-79	SOUTHWEST GAS CORP	SWX	12.25	0.03299	0.275	0.0073	0.0257	Aug-79
78	Sep-79	SOUTHWEST GAS CORP	SWX	12.125	-0.0102	0	0.0068	-0.0170	Sep-79

78	Oct-79	SOUTHWEST GAS CORP	SWX	10.875	-0.10309	0	0.0082	-0.1113	Oct-79
78	Nov-79	SOUTHWEST GAS CORP	SWX	10.875	0.025287	0.275	0.0083	0.0170	Nov-79
78	Dec-79	SOUTHWEST GAS CORP	SWX	11.25	0.034483	0	0.0083	0.0262	Dec-79
78	Jan-80	SOUTHWEST GAS CORP	SWX	11.875	0.055556	0	0.0083	0.0473	Jan-80
78	Feb-80	SOUTHWEST GAS CORP	SWX	11.625	0.002105	0.275	0.0084	-0.0063	Feb-80
78	Mar-80	SOUTHWEST GAS CORP	SWX	9.125	-0.21505	0	0.0099	-0.2250	Mar-80
78	Apr-80	SOUTHWEST GAS CORP	SWX	10.75	0.178082	0	0.0100	0.1681	Apr-80
78	May-80	SOUTHWEST GAS CORP	SWX	11.25	0.073488	0.29	0.0087	0.0648	May-80
78	Jun-80	SOUTHWEST GAS CORP	SWX	11.375	0.011111	0	0.0086	0.0025	Jun-80
78	Jul-80	SOUTHWEST GAS CORP	SWX	11.375	0	0	0.0084	-0.0084	Jul-80
78	Aug-80	SOUTHWEST GAS CORP	SWX	10.25	-0.07341	0.29	0.0081	-0.0815	Aug-80
78	Sep-80	SOUTHWEST GAS CORP	SWX	9.375	-0.08537	0	0.0097	-0.0951	Sep-80
78	Oct-80	SOUTHWEST GAS CORP	SWX	10	0.066667	0	0.0097	0.0570	Oct-80
78	Nov-80	SOUTHWEST GAS CORP	SWX	8.875	-0.0835	0.29	0.0091	-0.0926	Nov-80
78	Dec-80	SOUTHWEST GAS CORP	SWX	9.25	0.042254	0	0.0108	0.0315	Dec-80
78	Jan-81	SOUTHWEST GAS CORP	SWX	10.25	0.108108	0	0.0094	0.0987	Jan-81
78	Feb-81	SOUTHWEST GAS CORP	SWX	10	0.003902	0.29	0.0088	-0.0049	Feb-81
78	Mar-81	SOUTHWEST GAS CORP	SWX	10	0	0	0.0111	-0.0111	Mar-81
78	Apr-81	SOUTHWEST GAS CORP	SWX	9.375	-0.0625	0	0.0101	-0.0726	Apr-81
78	May-81	SOUTHWEST GAS CORP	SWX	9.75	0.070933	0.29	0.0104	0.0605	May-81
78	Jun-81	SOUTHWEST GAS CORP	SWX	9.5	-0.02564	0	0.0109	-0.0365	Jun-81
78	Jul-81	SOUTHWEST GAS CORP	SWX	9.125	-0.03947	0	0.0109	-0.0504	Jul-81
78	Aug-81	SOUTHWEST GAS CORP	SWX	8.875	0.004384	0.29	0.0110	-0.0066	Aug-81
78	Sep-81	SOUTHWEST GAS CORP	SWX	8.5	-0.04225	0	0.0114	-0.0537	Sep-81
78	Oct-81	SOUTHWEST GAS CORP	SWX	8.375	-0.01471	0	0.0117	-0.0264	Oct-81
78	Nov-81	SOUTHWEST GAS CORP	SWX	9.625	0.183881	0.29	0.0113	0.1726	Nov-81
78	Dec-81	SOUTHWEST GAS CORP	SWX	8.5	-0.11688	0	0.0100	-0.1269	Dec-81
78	Jan-82	SOUTHWEST GAS CORP	SWX	9.375	0.102941	0	0.0108	0.0921	Jan-82
78	Feb-82	SOUTHWEST GAS CORP	SWX	8.875	-0.0224	0.29	0.0103	-0.0327	Feb-82
78	Mar-82	SOUTHWEST GAS CORP	SWX	8.625	-0.02817	0	0.0124	-0.0406	Mar-82
78	Apr-82	SOUTHWEST GAS CORP	SWX	8.75	0.014493	0	0.0112	0.0033	Apr-82
78	May-82	SOUTHWEST GAS CORP	SWX	9.375	0.104571	0.29	0.0101	0.0945	May-82
78	Jun-82	SOUTHWEST GAS CORP	SWX	8.75	-0.06667	0	0.0120	-0.0787	Jun-82
78	Jul-82	SOUTHWEST GAS CORP	SWX	8.75	0	0	0.0114	-0.0114	Jul-82
78	Aug-82	SOUTHWEST GAS CORP	SWX	9.125	0.076	0.29	0.0112	0.0648	Aug-82
78	Sep-82	SOUTHWEST GAS CORP	SWX	9.25	0.013699	0	0.0100	0.0037	Sep-82

78	Oct-82	SOUTHWEST GAS CORP	SWX	10.375	0.121622	0	0.0091	0.1125	Oct-82
78	Nov-82	SOUTHWEST GAS CORP	SWX	9.625	-0.04434	0.29	0.0094	-0.0537	Nov-82
78	Dec-82	SOUTHWEST GAS CORP	SWX	9.875	0.025974	0	0.0093	0.0167	Dec-82
78	Jan-83	SOUTHWEST GAS CORP	SWX	10.75	0.088608	0	0.0087	0.0799	Jan-83
78	Feb-83	SOUTHWEST GAS CORP	SWX	10	-0.04279	0.29	0.0081	-0.0509	Feb-83
78	Mar-83	SOUTHWEST GAS CORP	SWX	10.25	0.025	0	0.0089	0.0161	Mar-83
78	Apr-83	SOUTHWEST GAS CORP	SWX	11	0.073171	0	0.0085	0.0647	Apr-83
78	May-83	SOUTHWEST GAS CORP	SWX	10.625	-0.00773	0.29	0.0091	-0.0168	May-83
78	Jun-83	SOUTHWEST GAS CORP	SWX	10.5	-0.01177	0	0.0090	-0.0208	Jun-83
78	Jul-83	SOUTHWEST GAS CORP	SWX	10.875	0.035714	0	0.0088	0.0269	Jul-83
78	Aug-83	SOUTHWEST GAS CORP	SWX	10.25	-0.03081	0.29	0.0103	-0.0411	Aug-83
78	Sep-83	SOUTHWEST GAS CORP	SWX	11.125	0.085366	0	0.0096	0.0758	Sep-83
78	Oct-83	SOUTHWEST GAS CORP	SWX	13.125	0.179775	0	0.0095	0.1703	Oct-83
78	Nov-83	SOUTHWEST GAS CORP	SWX	12.625	-0.01524	0.3	0.0094	-0.0246	Nov-83
78	Dec-83	SOUTHWEST GAS CORP	SWX	12.75	0.009901	0	0.0094	0.0005	Dec-83
78	Jan-84	SOUTHWEST GAS CORP	SWX	12.875	0.009804	0	0.0103	-0.0005	Jan-84
78	Feb-84	SOUTHWEST GAS CORP	SWX	12.25	-0.02524	0.3	0.0092	-0.0344	Feb-84
78	Mar-84	SOUTHWEST GAS CORP	SWX	12	-0.02041	0	0.0098	-0.0302	Mar-84
78	Apr-84	SOUTHWEST GAS CORP	SWX	12.25	0.020833	0	0.0104	0.0104	Apr-84
78	May-84	SOUTHWEST GAS CORP	SWX	10.75	-0.09796	0.3	0.0103	-0.1083	May-84
78	Jun-84	SOUTHWEST GAS CORP	SWX	11.75	0.093023	0	0.0106	0.0824	Jun-84
78	Jul-84	SOUTHWEST GAS CORP	SWX	11.5	-0.02128	0	0.0116	-0.0329	Jul-84
78	Aug-84	SOUTHWEST GAS CORP	SWX	11.125	-0.00652	0.3	0.0106	-0.0171	Aug-84
78	Sep-84	SOUTHWEST GAS CORP	SWX	12.25	0.101124	0	0.0094	0.0917	Sep-84
78	Oct-84	SOUTHWEST GAS CORP	SWX	12.625	0.030612	0	0.0108	0.0198	Oct-84
78	Nov-84	SOUTHWEST GAS CORP	SWX	12.5	0.013861	0.3	0.0091	0.0048	Nov-84
78	Dec-84	SOUTHWEST GAS CORP	SWX	14	0.12	0	0.0098	0.1102	Dec-84
78	Jan-85	SOUTHWEST GAS CORP	SWX	14.5	0.035714	0	0.0096	0.0261	Jan-85
78	Feb-85	SOUTHWEST GAS CORP	SWX	14.625	0.02931	0.3	0.0082	0.0211	Feb-85
78	Mar-85	SOUTHWEST GAS CORP	SWX	15.875	0.08547	0	0.0094	0.0761	Mar-85
78	Apr-85	SOUTHWEST GAS CORP	SWX	16.125	0.015748	0	0.0102	0.0055	Apr-85
78	May-85	SOUTHWEST GAS CORP	SWX	16.875	0.065736	0.31	0.0097	0.0560	May-85
78	Jun-85	SOUTHWEST GAS CORP	SWX	17.75	0.051852	0	0.0080	0.0439	Jun-85
78	Jul-85	SOUTHWEST GAS CORP	SWX	17.625	-0.00704	0	0.0094	-0.0164	Jul-85
78	Aug-85	SOUTHWEST GAS CORP	SWX	17.75	0.024681	0.31	0.0085	0.0162	Aug-85
78	Sep-85	SOUTHWEST GAS CORP	SWX	16.5	-0.07042	0	0.0088	-0.0792	Sep-85

78	Oct-85	SOUTHWEST GAS CORP	SWX	17.875	0.083333	0	0.0089	0.0744	Oct-85
78	Nov-85	SOUTHWEST GAS CORP	SWX	17.5	-0.00364	0.31	0.0081	-0.0117	Nov-85
78	Dec-85	SOUTHWEST GAS CORP	SWX	18	0.028571	0	0.0086	0.0200	Dec-85
78	Jan-86	SOUTHWEST GAS CORP	SWX	18	0	0	0.0079	-0.0079	Jan-86
78	Feb-86	SOUTHWEST GAS CORP	SWX	18	0.017778	0.32	0.0073	0.0105	Feb-86
78	Mar-86	SOUTHWEST GAS CORP	SWX	19.25	0.069444	0	0.0071	0.0623	Mar-86
78	Apr-86	SOUTHWEST GAS CORP	SWX	19	-0.01299	0	0.0063	-0.0193	Apr-86
78	May-86	SOUTHWEST GAS CORP	SWX	18.25	-0.02263	0.32	0.0062	-0.0288	May-86
78	Jun-86	SOUTHWEST GAS CORP	SWX	19	0.041096	0	0.0070	0.0341	Jun-86
78	Jul-86	SOUTHWEST GAS CORP	SWX	19.375	0.019737	0	0.0066	0.0131	Jul-86
78	Aug-86	SOUTHWEST GAS CORP	SWX	20.25	0.061677	0.32	0.0063	0.0554	Aug-86
78	Sep-86	SOUTHWEST GAS CORP	SWX	19	-0.06173	0	0.0065	-0.0682	Sep-86
78	Oct-86	SOUTHWEST GAS CORP	SWX	20.25	0.065789	0	0.0069	0.0589	Oct-86
78	Nov-86	SOUTHWEST GAS CORP	SWX	19.625	-0.01506	0.32	0.0059	-0.0210	Nov-86
78	Dec-86	SOUTHWEST GAS CORP	SWX	17.875	-0.08917	0	0.0070	-0.0962	Dec-86
78	Jan-87	SOUTHWEST GAS CORP	SWX	21	0.174825	0	0.0064	0.1684	Jan-87
78	Feb-87	SOUTHWEST GAS CORP	SWX	21.5	0.039048	0.32	0.0059	0.0331	Feb-87
78	Mar-87	SOUTHWEST GAS CORP	SWX	26.375	0.226744	0	0.0066	0.2201	Mar-87
78	Apr-87	SOUTHWEST GAS CORP	SWX	22.875	-0.1327	0	0.0065	-0.1392	Apr-87
78	May-87	SOUTHWEST GAS CORP	SWX	22.125	-0.0188	0.32	0.0066	-0.0254	May-87
78	Jun-87	SOUTHWEST GAS CORP	SWX	25.75	0.163842	0	0.0075	0.1563	Jun-87
78	Jul-87	SOUTHWEST GAS CORP	SWX	24.875	-0.03398	0	0.0073	-0.0413	Jul-87
78	Aug-87	SOUTHWEST GAS CORP	SWX	24.5	-0.00221	0.32	0.0075	-0.0097	Aug-87
78	Sep-87	SOUTHWEST GAS CORP	SWX	24.875	0.015306	0	0.0075	0.0078	Sep-87
78	Oct-87	SOUTHWEST GAS CORP	SWX	20.625	-0.17085	0	0.0079	-0.1788	Oct-87
78	Nov-87	SOUTHWEST GAS CORP	SWX	20	-0.01406	0.335	0.0075	-0.0216	Nov-87
78	Dec-87	SOUTHWEST GAS CORP	SWX	20.375	0.01875	0	0.0078	0.0110	Dec-87
78	Jan-88	SOUTHWEST GAS CORP	SWX	22.375	0.09816	0	0.0072	0.0910	Jan-88
78	Feb-88	SOUTHWEST GAS CORP	SWX	22	-0.00179	0.335	0.0071	-0.0089	Feb-88
78	Mar-88	SOUTHWEST GAS CORP	SWX	20.125	-0.08523	0	0.0072	-0.0924	Mar-88
78	Apr-88	SOUTHWEST GAS CORP	SWX	20.5	0.018634	0	0.0070	0.0116	Apr-88
78	May-88	SOUTHWEST GAS CORP	SWX	20	-0.00805	0.335	0.0078	-0.0158	May-88
78	Jun-88	SOUTHWEST GAS CORP	SWX	21.5	0.075	0	0.0076	0.0674	Jun-88
78	Jul-88	SOUTHWEST GAS CORP	SWX	20.25	-0.05814	0	0.0071	-0.0652	Jul-88
78	Aug-88	SOUTHWEST GAS CORP	SWX	21.25	0.065926	0.335	0.0083	0.0576	Aug-88
78	Sep-88	SOUTHWEST GAS CORP	SWX	21.5	0.011765	0	0.0076	0.0042	Sep-88

78	Oct-88	SOUTHWEST GAS CORP	SWX	20.875	-0.02907	0	0.0076	-0.0367	Oct-88
78	Nov-88	SOUTHWEST GAS CORP	SWX	18.75	-0.08575	0.335	0.0070	-0.0927	Nov-88
78	Dec-88	SOUTHWEST GAS CORP	SWX	17.5	-0.06667	0	0.0075	-0.0742	Dec-88
78	Jan-89	SOUTHWEST GAS CORP	SWX	18.375	0.05	0	0.0080	0.0420	Jan-89
78	Feb-89	SOUTHWEST GAS CORP	SWX	17.875	-0.00898	0.335	0.0069	-0.0159	Feb-89
78	Mar-89	SOUTHWEST GAS CORP	SWX	17.875	0	0	0.0079	-0.0079	Mar-89
78	Apr-89	SOUTHWEST GAS CORP	SWX	18.875	0.055944	0	0.0070	0.0489	Apr-89
78	May-89	SOUTHWEST GAS CORP	SWX	18	-0.02861	0.335	0.0080	-0.0366	May-89
78	Jun-89	SOUTHWEST GAS CORP	SWX	20.375	0.131944	0	0.0070	0.1249	Jun-89
78	Jul-89	SOUTHWEST GAS CORP	SWX	19.125	-0.06135	0	0.0068	-0.0682	Jul-89
78	Aug-89	SOUTHWEST GAS CORP	SWX	19	0.011765	0.35	0.0066	0.0052	Aug-89
78	Sep-89	SOUTHWEST GAS CORP	SWX	19	0	0	0.0065	-0.0065	Sep-89
78	Oct-89	SOUTHWEST GAS CORP	SWX	18.25	-0.03947	0	0.0072	-0.0467	Oct-89
78	Nov-89	SOUTHWEST GAS CORP	SWX	17.5	-0.02192	0.35	0.0064	-0.0283	Nov-89
78	Dec-89	SOUTHWEST GAS CORP	SWX	17.25	-0.01429	0	0.0064	-0.0207	Dec-89
78	Jan-90	SOUTHWEST GAS CORP	SWX	16.625	-0.03623	0	0.0073	-0.0435	Jan-90
78	Feb-90	SOUTHWEST GAS CORP	SWX	16.75	0.028571	0.35	0.0066	0.0220	Feb-90
78	Mar-90	SOUTHWEST GAS CORP	SWX	18.5	0.104478	0	0.0071	0.0974	Mar-90
78	Apr-90	SOUTHWEST GAS CORP	SWX	17.375	-0.06081	0	0.0075	-0.0683	Apr-90
78	May-90	SOUTHWEST GAS CORP	SWX	17.75	0.041727	0.35	0.0075	0.0342	May-90
78	Jun-90	SOUTHWEST GAS CORP	SWX	16.5	-0.07042	0	0.0068	-0.0772	Jun-90
78	Jul-90	SOUTHWEST GAS CORP	SWX	16.375	-0.00758	0	0.0074	-0.0150	Jul-90
78	Aug-90	SOUTHWEST GAS CORP	SWX	15	-0.0626	0.35	0.0071	-0.0697	Aug-90
78	Sep-90	SOUTHWEST GAS CORP	SWX	14	-0.06667	0	0.0069	-0.0736	Sep-90
78	Oct-90	SOUTHWEST GAS CORP	SWX	12	-0.14286	0	0.0081	-0.1510	Oct-90
78	Nov-90	SOUTHWEST GAS CORP	SWX	13.75	0.175	0.35	0.0071	0.1679	Nov-90
78	Dec-90	SOUTHWEST GAS CORP	SWX	13.125	-0.04546	0	0.0072	-0.0527	Dec-90
78	Jan-91	SOUTHWEST GAS CORP	SWX	14.125	0.07619	0	0.0071	0.0691	Jan-91
78	Feb-91	SOUTHWEST GAS CORP	SWX	15.125	0.095575	0.35	0.0064	0.0892	Feb-91
78	Mar-91	SOUTHWEST GAS CORP	SWX	16.375	0.082645	0	0.0064	0.0762	Mar-91
78	Apr-91	SOUTHWEST GAS CORP	SWX	16.875	0.030534	0	0.0076	0.0229	Apr-91
78	May-91	SOUTHWEST GAS CORP	SWX	11.5	-0.29778	0.35	0.0068	-0.3046	May-91
78	Jun-91	SOUTHWEST GAS CORP	SWX	11.5	0	0	0.0063	-0.0063	Jun-91
78	Jul-91	SOUTHWEST GAS CORP	SWX	11.375	-0.01087	0	0.0076	-0.0185	Jul-91
78	Aug-91	SOUTHWEST GAS CORP	SWX	9.625	-0.13846	0.175	0.0068	-0.1453	Aug-91
78	Sep-91	SOUTHWEST GAS CORP	SWX	10.125	0.051948	0	0.0068	0.0451	Sep-91

78	Oct-91	SOUTHWEST GAS CORP	SWX	11	0.08642	0	0.0065	0.0799	Oct-91
78	Nov-91	SOUTHWEST GAS CORP	SWX	11.375	0.05	0.175	0.0060	0.0440	Nov-91
78	Dec-91	SOUTHWEST GAS CORP	SWX	10.625	-0.06593	0	0.0068	-0.0727	Dec-91
78	Jan-92	SOUTHWEST GAS CORP	SWX	12.125	0.141176	0	0.0061	0.1351	Jan-92
78	Feb-92	SOUTHWEST GAS CORP	SWX	11.875	-0.00619	0.175	0.0059	-0.0121	Feb-92
78	Mar-92	SOUTHWEST GAS CORP	SWX	13.25	0.115789	0	0.0067	0.1091	Mar-92
78	Apr-92	SOUTHWEST GAS CORP	SWX	13.125	-0.00943	0	0.0065	-0.0159	Apr-92
78	May-92	SOUTHWEST GAS CORP	SWX	13.75	0.060952	0.175	0.0061	0.0549	May-92
78	Jun-92	SOUTHWEST GAS CORP	SWX	14.375	0.045455	0	0.0067	0.0388	Jun-92
78	Jul-92	SOUTHWEST GAS CORP	SWX	13.75	-0.04348	0	0.0063	-0.0498	Jul-92
78	Aug-92	SOUTHWEST GAS CORP	SWX	14.375	0.058182	0.175	0.0060	0.0522	Aug-92
78	Sep-92	SOUTHWEST GAS CORP	SWX	14.75	0.026087	0	0.0058	0.0203	Sep-92
78	Oct-92	SOUTHWEST GAS CORP	SWX	13.25	-0.1017	0	0.0057	-0.1074	Oct-92
78	Nov-92	SOUTHWEST GAS CORP	SWX	14.25	0.088679	0.175	0.0061	0.0826	Nov-92
78	Dec-92	SOUTHWEST GAS CORP	SWX	13.75	-0.03509	0	0.0063	-0.0414	Dec-92
78	Jan-93	SOUTHWEST GAS CORP	SWX	14.25	0.036364	0	0.0059	0.0305	Jan-93
78	Feb-93	SOUTHWEST GAS CORP	SWX	15.625	0.108772	0.175	0.0055	0.1033	Feb-93
78	Mar-93	SOUTHWEST GAS CORP	SWX	17.625	0.128	0	0.0063	0.1217	Mar-93
78	Apr-93	SOUTHWEST GAS CORP	SWX	17.875	0.014184	0	0.0057	0.0085	Apr-93
78	May-93	SOUTHWEST GAS CORP	SWX	18	0.016783	0.175	0.0052	0.0116	May-93
78	Jun-93	SOUTHWEST GAS CORP	SWX	17.125	-0.04861	0	0.0062	-0.0548	Jun-93
78	Jul-93	SOUTHWEST GAS CORP	SWX	16.875	-0.0146	0	0.0054	-0.0200	Jul-93
78	Aug-93	SOUTHWEST GAS CORP	SWX	16.875	0.011556	0.195	0.0056	0.0060	Aug-93
78	Sep-93	SOUTHWEST GAS CORP	SWX	17.375	0.02963	0	0.0050	0.0246	Sep-93
78	Oct-93	SOUTHWEST GAS CORP	SWX	17.75	0.021583	0	0.0049	0.0167	Oct-93
78	Nov-93	SOUTHWEST GAS CORP	SWX	16.5	-0.05944	0.195	0.0053	-0.0647	Nov-93
78	Dec-93	SOUTHWEST GAS CORP	SWX	16	-0.0303	0	0.0055	-0.0358	Dec-93
78	Jan-94	SOUTHWEST GAS CORP	SWX	18.375	0.148438	0	0.0055	0.1429	Jan-94
78	Feb-94	SOUTHWEST GAS CORP	SWX	17.75	-0.0234	0.195	0.0049	-0.0283	Feb-94
78	Mar-94	SOUTHWEST GAS CORP	SWX	15.75	-0.11268	0	0.0058	-0.1185	Mar-94
78	Apr-94	SOUTHWEST GAS CORP	SWX	17	0.079365	0	0.0057	0.0737	Apr-94
78	May-94	SOUTHWEST GAS CORP	SWX	18	0.070294	0.195	0.0063	0.0640	May-94
78	Jun-94	SOUTHWEST GAS CORP	SWX	18	0	0	0.0061	-0.0061	Jun-94
78	Jul-94	SOUTHWEST GAS CORP	SWX	17.625	-0.02083	0	0.0060	-0.0268	Jul-94
78	Aug-94	SOUTHWEST GAS CORP	SWX	17.875	0.025816	0.205	0.0066	0.0192	Aug-94
78	Sep-94	SOUTHWEST GAS CORP	SWX	17.625	-0.01399	0	0.0061	-0.0201	Sep-94

78	Oct-94	SOUTHWEST GAS CORP	SWX	17.125	-0.02837	0	0.0066	-0.0350	Oct-94
78	Nov-94	SOUTHWEST GAS CORP	SWX	15.25	-0.09752	0.205	0.0064	-0.1039	Nov-94
78	Dec-94	SOUTHWEST GAS CORP	SWX	14.125	-0.07377	0	0.0066	-0.0804	Dec-94
78	Jan-95	SOUTHWEST GAS CORP	SWX	14.25	0.00885	0	0.0070	0.0019	Jan-95
78	Feb-95	SOUTHWEST GAS CORP	SWX	15.25	0.084561	0.205	0.0059	0.0787	Feb-95
78	Mar-95	SOUTHWEST GAS CORP	SWX	14.75	-0.03279	0	0.0064	-0.0392	Mar-95
78	Apr-95	SOUTHWEST GAS CORP	SWX	14.75	0	0	0.0058	-0.0058	Apr-95
78	May-95	SOUTHWEST GAS CORP	SWX	14.25	-0.02	0.205	0.0065	-0.0265	May-95
78	Jun-95	SOUTHWEST GAS CORP	SWX	14.25	0	0	0.0054	-0.0054	Jun-95
78	Jul-95	SOUTHWEST GAS CORP	SWX	14.75	0.035088	0	0.0056	0.0295	Jul-95
78	Aug-95	SOUTHWEST GAS CORP	SWX	16.5	0.132542	0.205	0.0057	0.1268	Aug-95
78	Sep-95	SOUTHWEST GAS CORP	SWX	15.625	-0.05303	0	0.0052	-0.0582	Sep-95
78	Oct-95	SOUTHWEST GAS CORP	SWX	15.125	-0.032	0	0.0057	-0.0377	Oct-95
78	Nov-95	SOUTHWEST GAS CORP	SWX	18	0.203636	0.205	0.0051	0.1985	Nov-95
78	Dec-95	SOUTHWEST GAS CORP	SWX	17.625	-0.02083	0	0.0049	-0.0257	Dec-95
78	Jan-96	SOUTHWEST GAS CORP	SWX	17	-0.03546	0	0.0054	-0.0409	Jan-96
78	Feb-96	SOUTHWEST GAS CORP	SWX	16	-0.04677	0.205	0.0048	-0.0516	Feb-96
78	Mar-96	SOUTHWEST GAS CORP	SWX	17.25	0.078125	0	0.0052	0.0729	Mar-96
78	Apr-96	SOUTHWEST GAS CORP	SWX	16.625	-0.03623	0	0.0059	-0.0421	Apr-96
78	May-96	SOUTHWEST GAS CORP	SWX	17.25	0.049925	0.205	0.0058	0.0441	May-96
78	Jun-96	SOUTHWEST GAS CORP	SWX	16.125	-0.06522	0	0.0054	-0.0706	Jun-96
78	Jul-96	SOUTHWEST GAS CORP	SWX	16.25	0.007752	0	0.0062	0.0016	Jul-96
78	Aug-96	SOUTHWEST GAS CORP	SWX	17.875	0.112615	0.205	0.0057	0.1069	Aug-96
78	Sep-96	SOUTHWEST GAS CORP	SWX	17.5	-0.02098	0	0.0060	-0.0270	Sep-96
78	Oct-96	SOUTHWEST GAS CORP	SWX	19.125	0.092857	0	0.0058	0.0871	Oct-96
78	Nov-96	SOUTHWEST GAS CORP	SWX	19.5	0.030327	0.205	0.0052	0.0251	Nov-96
78	Dec-96	SOUTHWEST GAS CORP	SWX	19.25	-0.01282	0	0.0056	-0.0184	Dec-96
78	Jan-97	SOUTHWEST GAS CORP	SWX	19.75	0.025974	0	0.0056	0.0204	Jan-97
78	Feb-97	SOUTHWEST GAS CORP	SWX	18.5	-0.05291	0.205	0.0051	-0.0580	Feb-97
78	Mar-97	SOUTHWEST GAS CORP	SWX	17.375	-0.06081	0	0.0059	-0.0667	Mar-97
78	Apr-97	SOUTHWEST GAS CORP	SWX	16.625	-0.04317	0	0.0059	-0.0491	Apr-97
78	May-97	SOUTHWEST GAS CORP	SWX	17.125	0.042406	0.205	0.0058	0.0366	May-97
78	Jun-97	SOUTHWEST GAS CORP	SWX	19.875	0.160584	0	0.0059	0.1547	Jun-97
78	Jul-97	SOUTHWEST GAS CORP	SWX	18.5625	-0.06604	0	0.0058	-0.0718	Jul-97
78	Aug-97	SOUTHWEST GAS CORP	SWX	19.8125	0.078384	0.205	0.0049	0.0735	Aug-97
78	Sep-97	SOUTHWEST GAS CORP	SWX	19.625	-0.00946	0	0.0058	-0.0153	Sep-97

78	Oct-97	SOUTHWEST GAS CORP	SWX	18.8125	-0.0414	0	0.0054	-0.0468	Oct-97
78	Nov-97	SOUTHWEST GAS CORP	SWX	18.625	0.00093	0.205	0.0047	-0.0038	Nov-97
78	Dec-97	SOUTHWEST GAS CORP	SWX	18.6875	0.003356	0	0.0054	-0.0020	Dec-97
78	Jan-98	SOUTHWEST GAS CORP	SWX	17.8125	-0.04682	0	0.0048	-0.0516	Jan-98
78	Feb-98	SOUTHWEST GAS CORP	SWX	20.25	0.148351	0.205	0.0044	0.1440	Feb-98
78	Mar-98	SOUTHWEST GAS CORP	SWX	20.875	0.030864	0	0.0052	0.0257	Mar-98
78	Apr-98	SOUTHWEST GAS CORP	SWX	23.0625	0.10479	0	0.0049	0.0999	Apr-98
78	May-98	SOUTHWEST GAS CORP	SWX	21.875	-0.0426	0.205	0.0048	-0.0474	May-98
78	Jun-98	SOUTHWEST GAS CORP	SWX	24.4375	0.117143	0	0.0052	0.1119	Jun-98
78	Jul-98	SOUTHWEST GAS CORP	SWX	23.25	-0.04859	0	0.0049	-0.0535	Jul-98
78	Aug-98	SOUTHWEST GAS CORP	SWX	18.1875	-0.20893	0.205	0.0048	-0.2137	Aug-98
78	Sep-98	SOUTHWEST GAS CORP	SWX	20.4375	0.123711	0	0.0044	0.1193	Sep-98
78	Oct-98	SOUTHWEST GAS CORP	SWX	23.6875	0.159021	0	0.0042	0.1548	Oct-98
78	Nov-98	SOUTHWEST GAS CORP	SWX	23.75	0.011293	0.205	0.0045	0.0068	Nov-98
78	Dec-98	SOUTHWEST GAS CORP	SWX	26.625	0.121053	0	0.0045	0.1166	Dec-98
78	Jan-99	SOUTHWEST GAS CORP	SWX	26.3125	-0.01174	0	0.0042	-0.0159	Jan-99
78	Feb-99	SOUTHWEST GAS CORP	SWX	28.75	0.100428	0.205	0.0040	0.0964	Feb-99
78	Mar-99	SOUTHWEST GAS CORP	SWX	27.5	-0.04348	0	0.0053	-0.0488	Mar-99
78	Apr-99	SOUTHWEST GAS CORP	SWX	28.5625	0.038636	0	0.0048	0.0338	Apr-99
78	May-99	SOUTHWEST GAS CORP	SWX	28.25	-0.00376	0.205	0.0045	-0.0083	May-99
78	Jun-99	SOUTHWEST GAS CORP	SWX	28.625	0.013274	0	0.0055	0.0078	Jun-99
78	Jul-99	SOUTHWEST GAS CORP	SWX	28.8125	0.00655	0	0.0051	0.0015	Jul-99
78	Aug-99	SOUTHWEST GAS CORP	SWX	27.875	-0.02542	0.205	0.0054	-0.0308	Aug-99
78	Sep-99	SOUTHWEST GAS CORP	SWX	26.9375	-0.03363	0	0.0052	-0.0388	Sep-99
78	Oct-99	SOUTHWEST GAS CORP	SWX	23.25	-0.13689	0	0.0050	-0.1419	Oct-99
78	Nov-99	SOUTHWEST GAS CORP	SWX	23.4375	0.016882	0.205	0.0056	0.0113	Nov-99
78	Dec-99	SOUTHWEST GAS CORP	SWX	23	-0.01867	0	0.0055	-0.0242	Dec-99
78	Jan-00	SOUTHWEST GAS CORP	SWX	19.5625	-0.14946	0	0.0057	-0.1552	Jan-00
78	Feb-00	SOUTHWEST GAS CORP	SWX	18.5	-0.04383	0.205	0.0051	-0.0489	Feb-00
78	Mar-00	SOUTHWEST GAS CORP	SWX	19.0625	0.030405	0	0.0054	0.0250	Mar-00
78	Apr-00	SOUTHWEST GAS CORP	SWX	19.0625	0	0	0.0047	-0.0047	Apr-00
78	May-00	SOUTHWEST GAS CORP	SWX	19.1875	0.017311	0.205	0.0056	0.0117	May-00
78	Jun-00	SOUTHWEST GAS CORP	SWX	17.5	-0.08795	0	0.0052	-0.0931	Jun-00
78	Jul-00	SOUTHWEST GAS CORP	SWX	18	0.028571	0	0.0052	0.0234	Jul-00
78	Aug-00	SOUTHWEST GAS CORP	SWX	18.875	0.06	0.205	0.0050	0.0550	Aug-00
78	Sep-00	SOUTHWEST GAS CORP	SWX	20.9375	0.109272	0	0.0046	0.1047	Sep-00

78	Oct-00	SOUTHWEST GAS CORP	SWX	20.875	-0.00299	0	0.0053	-0.0083	Oct-00
78	Nov-00	SOUTHWEST GAS CORP	SWX	19.5	-0.05605	0.205	0.0048	-0.0608	Nov-00
78	Dec-00	SOUTHWEST GAS CORP	SWX	21.875	0.121795	0	0.0045	0.1173	Dec-00
78	Jan-01	SOUTHWEST GAS CORP	SWX	21.55	-0.01486	0	0.0049	-0.0198	Jan-01
78	Feb-01	SOUTHWEST GAS CORP	SWX	20.9	-0.02065	0.205	0.0042	-0.0249	Feb-01
78	Mar-01	SOUTHWEST GAS CORP	SWX	20.85	-0.00239	0	0.0045	-0.0069	Mar-01
78	Apr-01	SOUTHWEST GAS CORP	SWX	21.05	0.009592	0	0.0047	0.0049	Apr-01
78	May-01	SOUTHWEST GAS CORP	SWX	23.13	0.108551	0.205	0.0050	0.1036	May-01
78	Jun-01	SOUTHWEST GAS CORP	SWX	23.68	0.023779	0	0.0047	0.0191	Jun-01
78	Jul-01	SOUTHWEST GAS CORP	SWX	23.9	0.009291	0	0.0052	0.0041	Jul-01
78	Aug-01	SOUTHWEST GAS CORP	SWX	22.52	-0.04916	0.205	0.0046	-0.0538	Aug-01
78	Sep-01	SOUTHWEST GAS CORP	SWX	21.2	-0.05862	0	0.0041	-0.0627	Sep-01
78	Oct-01	SOUTHWEST GAS CORP	SWX	20.6	-0.0283	0	0.0048	-0.0331	Oct-01
78	Nov-01	SOUTHWEST GAS CORP	SWX	20.6	0.009951	0.205	0.0041	0.0059	Nov-01
78	Dec-01	SOUTHWEST GAS CORP	SWX	22.35	0.084951	0	0.0046	0.0804	Dec-01
78	Jan-02	SOUTHWEST GAS CORP	SWX	23.9	0.069351	0	0.0048	0.0646	Jan-02
78	Feb-02	SOUTHWEST GAS CORP	SWX	23.27	-0.01778	0.205	0.0043	-0.0221	Feb-02
78	Mar-02	SOUTHWEST GAS CORP	SWX	25	0.074345	0	0.0043	0.0700	Mar-02
78	Apr-02	SOUTHWEST GAS CORP	SWX	24.75	-0.01	0	0.0054	-0.0154	Apr-02
78	May-02	SOUTHWEST GAS CORP	SWX	24.31	-0.0095	0.205	0.0049	-0.0144	May-02
78	Jun-02	SOUTHWEST GAS CORP	SWX	24.75	0.0181	0	0.0044	0.0137	Jun-02
78	Jul-02	SOUTHWEST GAS CORP	SWX	21.85	-0.11717	0	0.0051	-0.1223	Jul-02
78	Aug-02	SOUTHWEST GAS CORP	SWX	21.15	-0.02265	0.205	0.0044	-0.0271	Aug-02
78	Sep-02	SOUTHWEST GAS CORP	SWX	22.25	0.052009	0	0.0042	0.0478	Sep-02
78	Oct-02	SOUTHWEST GAS CORP	SWX	22.48	0.010337	0	0.0040	0.0063	Oct-02
78	Nov-02	SOUTHWEST GAS CORP	SWX	22.2	-0.00334	0.205	0.0040	-0.0073	Nov-02
78	Dec-02	SOUTHWEST GAS CORP	SWX	23.45	0.056306	0	0.0045	0.0518	Dec-02
78	Jan-03	SOUTHWEST GAS CORP	SWX	21.6	-0.07889	0	0.0041	-0.0830	Jan-03
78	Feb-03	SOUTHWEST GAS CORP	SWX	20.25	-0.05255	0.215	0.0038	-0.0563	Feb-03
78	Mar-03	SOUTHWEST GAS CORP	SWX	20.35	0.004938	0	0.0040	0.0009	Mar-03
78	Apr-03	SOUTHWEST GAS CORP	SWX	20.76	0.020147	0	0.0040	0.0161	Apr-03
78	May-03	SOUTHWEST GAS CORP	SWX	21.25	0.033478	0.205	0.0039	0.0296	May-03
78	Jun-03	SOUTHWEST GAS CORP	SWX	21.18	-0.00329	0	0.0036	-0.0069	Jun-03
78	Jul-03	SOUTHWEST GAS CORP	SWX	21.23	0.002361	0	0.0038	-0.0014	Jul-03
78	Aug-03	SOUTHWEST GAS CORP	SWX	22.59	0.073716	0.205	0.0042	0.0695	Aug-03
78	Sep-03	SOUTHWEST GAS CORP	SWX	22.7	0.004869	0	0.0046	0.0003	Sep-03

78	Oct-03	SOUTHWEST GAS CORP	SWX	22.58	-0.00529	0	0.0041	-0.0094	Oct-03
78	Nov-03	SOUTHWEST GAS CORP	SWX	22.55	0.00775	0.205	0.0039	0.0039	Nov-03
78	Dec-03	SOUTHWEST GAS CORP	SWX	22.45	-0.00444	0	0.0047	-0.0091	Dec-03
78	Jan-04	SOUTHWEST GAS CORP	SWX	23.49	0.046325	0	0.0042	0.0421	Jan-04
78	Feb-04	SOUTHWEST GAS CORP	SWX	23.47	0.007876	0.205	0.0038	0.0041	Feb-04
78	Mar-04	SOUTHWEST GAS CORP	SWX	23.4	-0.00298	0	0.0043	-0.0073	Mar-04
78	Apr-04	SOUTHWEST GAS CORP	SWX	22.8	-0.02564	0	0.0039	-0.0295	Apr-04
78	May-04	SOUTHWEST GAS CORP	SWX	22.6	0.000219	0.205	0.0040	-0.0038	May-04
78	Jun-04	SOUTHWEST GAS CORP	SWX	24.13	0.067699	0	0.0048	0.0629	Jun-04
78	Jul-04	SOUTHWEST GAS CORP	SWX	23.67	-0.01906	0	0.0043	-0.0234	Jul-04
78	Aug-04	SOUTHWEST GAS CORP	SWX	23.6	0.005703	0.205	0.0045	0.0012	Aug-04
78	Sep-04	SOUTHWEST GAS CORP	SWX	23.95	0.014831	0	0.0040	0.0108	Sep-04
78	Oct-04	SOUTHWEST GAS CORP	SWX	24.43	0.020042	0	0.0038	0.0162	Oct-04
78	Nov-04	SOUTHWEST GAS CORP	SWX	25.4	0.048097	0.205	0.0041	0.0440	Nov-04
78	Dec-04	SOUTHWEST GAS CORP	SWX	25.4	0	0	0.0043	-0.0043	Dec-04
78	Jan-05	SOUTHWEST GAS CORP	SWX	25.37	-0.00118	0	0.0041	-0.0053	Jan-05
78	Feb-05	SOUTHWEST GAS CORP	SWX	25.08	-0.00335	0.205	0.0035	-0.0069	Feb-05
78	Mar-05	SOUTHWEST GAS CORP	SWX	24.16	-0.03668	0	0.0041	-0.0408	Mar-05
78	Apr-05	SOUTHWEST GAS CORP	SWX	24.47	0.012831	0	0.0039	0.0089	Apr-05
78	May-05	SOUTHWEST GAS CORP	SWX	24.98	0.029219	0.205	0.0040	0.0252	May-05
78	Jun-05	SOUTHWEST GAS CORP	SWX	25.51	0.021217	0	0.0036	0.0176	Jun-05
78	Jul-05	SOUTHWEST GAS CORP	SWX	26.78	0.049784	0	0.0034	0.0464	Jul-05
78	Aug-05	SOUTHWEST GAS CORP	SWX	27.42	0.031553	0.205	0.0040	0.0276	Aug-05
78	Sep-05	SOUTHWEST GAS CORP	SWX	27.39	-0.00109	0	0.0035	-0.0046	Sep-05
78	Oct-05	SOUTHWEST GAS CORP	SWX	27.26	-0.00475	0	0.0039	-0.0086	Oct-05
78	Nov-05	SOUTHWEST GAS CORP	SWX	26.68	-0.01376	0.205	0.0039	-0.0177	Nov-05
78	Dec-05	SOUTHWEST GAS CORP	SWX	26.4	-0.0105	0	0.0039	-0.0144	Dec-05
78	Jan-06	SOUTHWEST GAS CORP	SWX	27.65	0.047348	0	0.0040	0.0433	Jan-06
78	Feb-06	SOUTHWEST GAS CORP	SWX	28.52	0.038879	0.205	0.0036	0.0353	Feb-06
78	Mar-06	SOUTHWEST GAS CORP	SWX	27.95	-0.01999	0	0.0039	-0.0239	Mar-06
78	Apr-06	SOUTHWEST GAS CORP	SWX	27.72	-0.00823	0	0.0039	-0.0121	Apr-06
78	May-06	SOUTHWEST GAS CORP	SWX	29.11	0.05754	0.205	0.0048	0.0527	May-06
78	Jun-06	SOUTHWEST GAS CORP	SWX	31.34	0.076606	0	0.0044	0.0722	Jun-06
78	Jul-06	SOUTHWEST GAS CORP	SWX	32.93	0.050734	0	0.0045	0.0462	Jul-06
78	Aug-06	SOUTHWEST GAS CORP	SWX	33.7	0.029608	0.205	0.0043	0.0253	Aug-06
78	Sep-06	SOUTHWEST GAS CORP	SWX	33.32	-0.01128	0	0.0039	-0.0152	Sep-06

78	Oct-06	SOUTHWEST GAS CORP	SWX	35.88	0.076831	0	0.0042	0.0726	Oct-06
78	Nov-06	SOUTHWEST GAS CORP	SWX	37.54	0.051979	0.205	0.0039	0.0481	Nov-06
78	Dec-06	SOUTHWEST GAS CORP	SWX	38.37	0.02211	0	0.0036	0.0185	Dec-06
78	Jan-07	SOUTHWEST GAS CORP	SWX	39.25	0.022935	0	0.0043	0.0186	Jan-07
78	Feb-07	SOUTHWEST GAS CORP	SWX	37.12	-0.04905	0.205	0.0038	-0.0528	Feb-07
78	Mar-07	SOUTHWEST GAS CORP	SWX	38.87	0.047144	0	0.0039	0.0432	Mar-07
78	Apr-07	SOUTHWEST GAS CORP	SWX	37.89	-0.02521	0	0.0042	-0.0294	Apr-07
78	May-07	SOUTHWEST GAS CORP	SWX	38.16	0.0128	0.215	0.0041	0.0087	May-07
78	Jun-07	SOUTHWEST GAS CORP	SWX	33.81	-0.11399	0	0.0040	-0.1180	Jun-07
78	Jul-07	SOUTHWEST GAS CORP	SWX	31.08	-0.08075	0	0.0046	-0.0853	Jul-07
78	Aug-07	SOUTHWEST GAS CORP	SWX	29.01	-0.05969	0.215	0.0042	-0.0639	Aug-07
78	Sep-07	SOUTHWEST GAS CORP	SWX	28.29	-0.02482	0	0.0037	-0.0285	Sep-07
78	Oct-07	SOUTHWEST GAS CORP	SWX	29.76	0.051962	0	0.0043	0.0477	Oct-07
78	Nov-07	SOUTHWEST GAS CORP	SWX	28.92	-0.021	0.215	0.0039	-0.0249	Nov-07
78	Dec-07	SOUTHWEST GAS CORP	SWX	29.77	0.029391	0	0.0037	0.0257	Dec-07
78	Jan-08	SOUTHWEST GAS CORP	SWX	28.55	-0.04098	0	0.0040	-0.0450	Jan-08
78	Feb-08	SOUTHWEST GAS CORP	SWX	25.59	-0.09615	0.215	0.0034	-0.0995	Feb-08
78	Mar-08	SOUTHWEST GAS CORP	SWX	27.96	0.092614	0	0.0037	0.0889	Mar-08
78	Apr-08	SOUTHWEST GAS CORP	SWX	28.87	0.032547	0	0.0035	0.0290	Apr-08
78	May-08	SOUTHWEST GAS CORP	SWX	31.18	0.087807	0.225	0.0037	0.0841	May-08
78	Jun-08	SOUTHWEST GAS CORP	SWX	29.73	-0.0465	0	0.0040	-0.0505	Jun-08
78	Jul-08	SOUTHWEST GAS CORP	SWX	28.9	-0.02792	0	0.0039	-0.0318	Jul-08
78	Aug-08	SOUTHWEST GAS CORP	SWX	30.35	0.057959	0.225	0.0036	0.0544	Aug-08
78	Sep-08	SOUTHWEST GAS CORP	SWX	30.26	-0.00297	0	0.0039	-0.0069	Sep-08
78	Oct-08	SOUTHWEST GAS CORP	SWX	26.12	-0.13681	0	0.0037	-0.1405	Oct-08
78	Nov-08	SOUTHWEST GAS CORP	SWX	25.9	0.000191	0.225	0.0036	-0.0034	Nov-08
78	Dec-08	SOUTHWEST GAS CORP	SWX	25.22	-0.02626	0	0.0033	-0.0296	Dec-08
78	Jan-09	SOUTHWEST GAS CORP	SWX	25.76	0.021412	0	0.0024	0.0190	Jan-09
78	Feb-09	SOUTHWEST GAS CORP	SWX	19.49	-0.23467	0.225	0.0030	-0.2377	Feb-09
78	Mar-09	SOUTHWEST GAS CORP	SWX	21.07	0.081067	0	0.0035	0.0776	Mar-09
78	Apr-09	SOUTHWEST GAS CORP	SWX	20.21	-0.04082	0	0.0029	-0.0437	Apr-09
78	May-09	SOUTHWEST GAS CORP	SWX	20.78	0.039956	0.2375	0.0033	0.0367	May-09
78	Jun-09	SOUTHWEST GAS CORP	SWX	22.21	0.068816	0	0.0038	0.0650	Jun-09
78	Jul-09	SOUTHWEST GAS CORP	SWX	24.22	0.0905	0	0.0036	0.0869	Jul-09
78	Aug-09	SOUTHWEST GAS CORP	SWX	24.35	0.015173	0.2375	0.0036	0.0116	Aug-09
78	Sep-09	SOUTHWEST GAS CORP	SWX	25.58	0.050513	0	0.0034	0.0471	Sep-09

78	Oct-09	SOUTHWEST GAS CORP	SWX	24.99	-0.02307	0	0.0033	-0.0264	Oct-09
78	Nov-09	SOUTHWEST GAS CORP	SWX	26.21	0.058323	0.2375	0.0035	0.0548	Nov-09
78	Dec-09	SOUTHWEST GAS CORP	SWX	28.53	0.088516	0	0.0034	0.0851	Dec-09
78	Jan-10	SOUTHWEST GAS CORP	SWX	27.67	-0.03014	0	0.0036	-0.0337	Jan-10
78	Feb-10	SOUTHWEST GAS CORP	SWX	28.58	0.041471	0.2375	0.0033	0.0382	Feb-10
78	Mar-10	SOUTHWEST GAS CORP	SWX	29.92	0.046886	0	0.0040	0.0429	Mar-10
78	Apr-10	SOUTHWEST GAS CORP	SWX	31.1	0.039439	0	0.0038	0.0356	Apr-10
78	May-10	SOUTHWEST GAS CORP	SWX	29.62	-0.03955	0.25	0.0034	-0.0430	May-10
78	Jun-10	SOUTHWEST GAS CORP	SWX	29.5	-0.00405	0	0.0037	-0.0078	Jun-10
78	Jul-10	SOUTHWEST GAS CORP	SWX	32.17	0.090508	0	0.0031	0.0874	Jul-10
78	Aug-10	SOUTHWEST GAS CORP	SWX	31.45	-0.01461	0.25	0.0032	-0.0178	Aug-10
78	Sep-10	SOUTHWEST GAS CORP	SWX	33.59	0.068044	0	0.0026	0.0654	Sep-10
78	Oct-10	SOUTHWEST GAS CORP	SWX	34.76	0.034832	0	0.0027	0.0321	Oct-10
78	Nov-10	SOUTHWEST GAS CORP	SWX	35.03	0.01496	0.25	0.0032	0.0118	Nov-10
78	Dec-10	SOUTHWEST GAS CORP	SWX	36.67	0.046817	0	0.0032	0.0436	Dec-10
78	Jan-11	SOUTHWEST GAS CORP	SWX	37.24	0.015544	0	0.003567	0.0120	Jan-11
78	Feb-11	SOUTHWEST GAS CORP	SWX	38.87	0.050483	0.25	0.003683	0.0468	Feb-11
78	Mar-11	SOUTHWEST GAS CORP	SWX	38.97	0.002573	0	0.003558	-0.0010	Mar-11
78	Apr-11	SOUTHWEST GAS CORP	SWX	39.77	0.020529	0	0.003567	0.0170	Apr-11
78	May-11	SOUTHWEST GAS CORP	SWX	39.06	-0.01119	0.265	0.003342	-0.0145	May-11
78	Jun-11	SOUTHWEST GAS CORP	SWX	38.61	-0.01152	0	0.003258	-0.0148	Jun-11
78	Jul-11	SOUTHWEST GAS CORP	SWX	37.29	-0.03419	0	0.003292	-0.0375	Jul-11
78	Aug-11	SOUTHWEST GAS CORP	SWX	37.02	-0.00013	0.265	0.003042	-0.0032	Aug-11
78	Sep-11	SOUTHWEST GAS CORP	SWX	36.17	-0.02296	0	0.002358	-0.0253	Sep-11
78	Oct-11	SOUTHWEST GAS CORP	SWX	39.48	0.091512	0	0.002392	0.0891	Oct-11
78	Nov-11	SOUTHWEST GAS CORP	SWX	40.43	0.030775	0.265	0.002267	0.0285	Nov-11
78	Dec-11	SOUTHWEST GAS CORP	SWX	42.49	0.050952	0	0.002483	0.0485	Dec-11
78	Jan-12	SOUTHWEST GAS CORP	SWX	41.8	-0.01624	0	0.0021	-0.0183	Jan-12
78	Feb-12	SOUTHWEST GAS CORP	SWX	42.65	0.026675	0.265	0.002	0.0247	Feb-12
78	Mar-12	SOUTHWEST GAS CORP	SWX	42.74	0.00211	0	0.0022	-0.0001	Mar-12
78	Apr-12	SOUTHWEST GAS CORP	SWX	42.02	-0.01685	0	0.0025	-0.0193	Apr-12
78	May-12	SOUTHWEST GAS CORP	SWX	41.98	0.006069	0.295	0.0023	0.0038	May-12
78	Jun-12	SOUTHWEST GAS CORP	SWX	43.65	0.039781	0	0.0018	0.0380	Jun-12
	Jul-12	SOUTHWEST GAS CORP	SWX	44.66	0.023139	0	0.002	0.0211	Jul-12
	Aug-12	SOUTHWEST GAS CORP	SWX	42.75	-0.03616	0.295	0.0018	-0.0380	Aug-12
	Sep-12	SOUTHWEST GAS CORP	SWX	44.2	0.033918	0	0.0017	0.0322	Sep-12

Oct-12	SOUTHWEST GAS CORP	SWX	43.47	-0.01652	0	0.0021	-0.0186	Oct-12
Nov-12	SOUTHWEST GAS CORP	SWX	41.94	-0.02841	0.295	0.0019	-0.0303	Nov-12
Dec-12	SOUTHWEST GAS CORP	SWX	42.41	0.011206	0	0.0019	0.0093	Dec-12
Jan-13	SOUTHWEST GAS CORP	SWX	44.54	0.050224	0	0.0022	0.0480	Jan-13
Feb-13	SOUTHWEST GAS CORP	SWX	45.3	0.023687	0.295	0.0022	0.0215	Feb-13
Mar-13	SOUTHWEST GAS CORP	SWX	47.76	0.054305	0	0.0021	0.0522	Mar-13
Apr-13	SOUTHWEST GAS CORP	SWX	50.76	0.062814	0	0.0026	0.0602	Apr-13
May-13	SOUTHWEST GAS CORP	SWX	47.35	-0.06068	0.33	0.0023	-0.0630	May-13
Jun-13	SOUTHWEST GAS CORP	SWX	46.79	-0.01183	0	0.0024	-0.0142	Jun-13
Jul-13	SOUTHWEST GAS CORP	SWX	49.64	0.06091	0	0.003	0.0579	Jul-13
Aug-13	SOUTHWEST GAS CORP	SWX	46.78	-0.05097	0.33	0.0028	-0.0538	Aug-13
Sep-13	SOUTHWEST GAS CORP	SWX	50	0.068833	0	0.0029	0.0659	Sep-13
Oct-13	SOUTHWEST GAS CORP	SWX	54.26	0.0852	0	0.0029	0.0823	Oct-13
Nov-13	SOUTHWEST GAS CORP	SWX	53.06	-0.01603	0.33	0.0027	-0.0187	Nov-13
Dec-13	SOUTHWEST GAS CORP	SWX	55.91	0.053713	0	0.0031	0.0506	Dec-13
Jan-14	SOUTHWEST GAS CORP	SWX	53.73	-0.03899	0	0.0032	-0.0422	Jan-14
Feb-14	SOUTHWEST GAS CORP	SWX	54.02	0.011539	0.33	0.0026	0.0089	Feb-14
Mar-14	SOUTHWEST GAS CORP	SWX	53.45	-0.01055	0	0.0029	-0.0135	Mar-14
Apr-14	SOUTHWEST GAS CORP	SWX	55.01	0.029186	0	0.0028	0.0264	Apr-14
May-14	SOUTHWEST GAS CORP	SWX	52.36	-0.04154	0.365	0.0028	-0.0443	May-14
Jun-14	SOUTHWEST GAS CORP	SWX	52.79	0.008212	0	0.0025	0.0057	Jun-14
Jul-14	SOUTHWEST GAS CORP	SWX	49.53	-0.06175	0	0.0027	-0.0645	Jul-14
Aug-14	SOUTHWEST GAS CORP	SWX	52.21	0.061478	0.365	0.0026	0.0589	Aug-14
Sep-14	SOUTHWEST GAS CORP	SWX	48.58	-0.06953	0	0.0023	-0.0718	Sep-14
Oct-14	SOUTHWEST GAS CORP	SWX	58.09	0.19576	0	0.0025	0.1933	Oct-14
Nov-14	SOUTHWEST GAS CORP	SWX	57.89	0.00284	0.365	0.0023	0.0005	Nov-14
Dec-14	SOUTHWEST GAS CORP	SWX	61.81	0.067715	0	0.0022	0.0655	Dec-14
Jan-15	SOUTHWEST GAS CORP	SWX	61.46	-0.00566	0	0.002	-0.0077	Jan-15
Feb-15	SOUTHWEST GAS CORP	SWX	57.26	-0.0624	0.365	0.0015	-0.0639	Feb-15
Mar-15	SOUTHWEST GAS CORP	SWX	58.17	0.015892	0	0.0021	0.0138	Mar-15
Apr-15	SOUTHWEST GAS CORP	SWX	55	-0.0545	0	0.0019	-0.0564	Apr-15
May-15	SOUTHWEST GAS CORP	SWX	54.46	-0.00245	0.405	0.002	-0.0045	May-15
Jun-15	SOUTHWEST GAS CORP	SWX	53.21	-0.02295	0	0.003492	-0.0264	Jun-15
Jul-15	SOUTHWEST GAS CORP	SWX	56.34	0.058824	0	0.003458	0.0554	Jul-15
Aug-15	SOUTHWEST GAS CORP	SWX	55.09	-0.015	0.405	0.003367	-0.0184	Aug-15
Sep-15	SOUTHWEST GAS CORP	SWX	58.32	0.058631	0	0.003392	0.05524	Sep-15

Oct-15	SOUTHWEST GAS CORP	SWX	61.46	0.053841	0	0.003292	0.050549	Oct-15
Nov-15	SOUTHWEST GAS CORP	SWX	56.08	-0.08095	0.405	0.003383	-0.08433	Nov-15
Dec-15	SOUTHWEST GAS CORP	SWX	55.16	-0.01641	0	0.003308	-0.019713	Dec-15
Jan-16	SOUTHWEST GAS CORP	SWX	58.83	0.066534	0	0.003333	0.0632	Jan-16
Feb-16	SOUTHWEST GAS CORP	SWX	61	0.04377	0.405	0.0033	0.04047	Feb-16
Mar-16	SOUTHWEST GAS CORP	SWX	65.85	0.079508	0	0.003183	0.076325	Mar-16
Apr-16	SOUTHWEST GAS CORP	SWX	64.91	-0.01427	0	0.003183	-0.017458	Apr-16
May-16	SOUTHWEST GAS CORP	SWX	69.43	0.076568	0.45	0.003042	0.073526	May-16
Jun-16	SOUTHWEST GAS CORP	SWX	78.71	0.13366	0	0.002917	0.130743	Jun-16
Jul-16	SOUTHWEST GAS CORP	SWX	77.5	-0.01537	0	0.002733	-0.018106	Jul-16
Aug-16	SOUTHWEST GAS CORP	SWX	69.82	-0.09329	0.45	0.002767	-0.096057	Aug-16
Sep-16	SOUTHWEST GAS CORP	SWX	69.86	0.000573	0	0.002842	-0.002269	Sep-16
Oct-16	SOUTHWEST GAS CORP	SWX	72.46	0.037217	0	0.002842	0.034376	Oct-16
Nov-16	SOUTHWEST GAS CORP	SWX	74.13	0.029258	0.45	0.003217	0.026041	Nov-16
Dec-16	SOUTHWEST GAS CORP	SWX	76.62	0.03359	0	0.003383	0.030206	Dec-16
Jan-17	SOUTHWEST GAS CORP	SWX	80.57	0.051553	0	0.003267	0.048286	Jan-17
Feb-17	SOUTHWEST GAS CORP	SWX	85.53	0.067147	0.45	0.003292	0.063855	Feb-17
Mar-17	SOUTHWEST GAS CORP	SWX	82.91	-0.03063	0	0.003292	-0.033924	Mar-17
Apr-17	SOUTHWEST GAS CORP	SWX	83.76	0.010252	0	0.003225	0.007027	Apr-17
May-17	SOUTHWEST GAS CORP	SWX	79.57	-0.04411	0.495	0.003208	-0.047322	May-17
Jun-17	SOUTHWEST GAS CORP	SWX	73.06	-0.08181	0	0.003067	-0.084881	Jun-17
Jul-17	SOUTHWEST GAS CORP	SWX	80.1	0.096359	0	0.00315	0.093209	Jul-17
Aug-17	SOUTHWEST GAS CORP	SWX	79.52	-0.00106	0.495	0.003083	-0.004145	Aug-17
Sep-17	SOUTHWEST GAS CORP	SWX	77.62	-0.02389	0	0.003025	-0.026918	Sep-17
Oct-17	SOUTHWEST GAS CORP	SWX	82.39	0.061453	0	0.003	0.058453	Oct-17
Nov-17	SOUTHWEST GAS CORP	SWX	85.94	0.049096	0.495	0.003	0.046096	Nov-17
Dec-17	SOUTHWEST GAS CORP	SWX	80.48	-0.06353	0	0.002925	-0.066458	Dec-17
Jan-18	SOUTHWEST GAS CORP	SWX	73.58	-0.08574	0	0.002925	-0.088661	Jan-18
Feb-18	SOUTHWEST GAS CORP	SWX	65.88	-0.09792	0.495	0.002958	-0.100879	Feb-18
Mar-18	SOUTHWEST GAS CORP	SWX	67.63	0.026563	0	0.003225	0.023338	Mar-18
Apr-18	SOUTHWEST GAS CORP	SWX	72.99	0.079255	0	0.003208	0.076046	Apr-18
May-18	SOUTHWEST GAS CORP	SWX	75.7	0.044253	0.52	0.003325	0.040928	May-18
Jun-18	SOUTHWEST GAS CORP	SWX	76.27	0.00753	0	0.0033	0.00423	Jun-18
Jul-18	SOUTHWEST GAS CORP	SWX	78.2	0.025305	0	0.003225	0.02208	Jul-18
Aug-18	SOUTHWEST GAS CORP	SWX	77.32	-0.0046	0.52	0.003233	-0.007837	Aug-18
Sep-18	SOUTHWEST GAS CORP	SWX	79.03	0.022116	0	0.003233	0.018883	Sep-18

Oct-18	SOUTHWEST GAS CORP	SWX	77.27	-0.02227	0	0.00345	-0.02572	Oct-18
Nov-18	SOUTHWEST GAS CORP	SWX	78.77	0.026142	0.52	0.003517	0.022625	Nov-18
Dec-18	SOUTHWEST GAS CORP	SWX	76.5	-0.02882	0	0.00335	-0.032168	Dec-18
Jan-19	SOUTHWEST GAS CORP	SWX	78.32	0.023791	0	0.003275	0.020516	Jan-19
Feb-19	SOUTHWEST GAS CORP	SWX	81.94	0.05286	0.52	0.003158	0.049702	Feb-19
Mar-19	SOUTHWEST GAS CORP	SWX	82.26	0.003905	0	0.003158	0.000747	Mar-19
Apr-19	SOUTHWEST GAS CORP	SWX	83.19	0.011306	0	0.003075	0.008231	Apr-19
May-19	SOUTHWEST GAS CORP	SWX	85.14	0.029992	0.545	0.003058	0.026933	May-19
Jun-19	SOUTHWEST GAS CORP	SWX	89.62	0.052619	0	0.003058	0.049561	Jun-19
Jul-19	SOUTHWEST GAS CORP	SWX	88.91	-0.00792	0	0.002742	-0.010664	Jul-19
Aug-19	SOUTHWEST GAS CORP	SWX	91.23	0.032224	0.545	0.002742	0.029482	Aug-19
Sep-19	SOUTHWEST GAS CORP	SWX	91.04	-0.00208	0	0.002483	-0.004566	Sep-19
Oct-19	SOUTHWEST GAS CORP	SWX	87.3	-0.04108	0	0.002525	-0.043606	Oct-19
Nov-19	SOUTHWEST GAS CORP	SWX	75.76	-0.12595	0.545	0.002558	-0.128503	Nov-19
Dec-19	SOUTHWEST GAS CORP	SWX	75.97	0.002772	0	0.002508	0.000264	Dec-19
Jan-20	SOUTHWEST GAS CORP	SWX	75.51	-0.00606	0	0.00235	-0.008405	Jan-20
Feb-20	SOUTHWEST GAS CORP	SWX	64.68	-0.13621	0.545	0.00245	-0.138657	Feb-20
Mar-20	SOUTHWEST GAS CORP	SWX	69.56	0.075448	0	0.002317	0.073132	Mar-20
Apr-20	SOUTHWEST GAS CORP	SWX	75.8	0.089707	0	0.002025	0.087682	Apr-20
May-20	SOUTHWEST GAS CORP	SWX	75.95	0.009499	0.57	0.002075	0.007424	May-20
Jun-20	SOUTHWEST GAS CORP	SWX	69.05	-0.09085	0	0.002008	-0.092858	Jun-20
Jul-20	SOUTHWEST GAS CORP	SWX	69.64	0.008545	0	0.001692	0.006853	Jul-20
Aug-20	SOUTHWEST GAS CORP	SWX	62.87	-0.08903	0.57	0.001875	-0.090904	Aug-20
Sep-20	SOUTHWEST GAS CORP	SWX	63.1	0.003658	0	0.001925	0.001733	Sep-20
Oct-20	SOUTHWEST GAS CORP	SWX	65.72	0.041521	0	0.001958	0.039563	Oct-20
Nov-20	SOUTHWEST GAS CORP	SWX	64.25	-0.01369	0.57	0.001917	-0.015611	Nov-20
Dec-20	SOUTHWEST GAS CORP	SWX	60.75	-0.05447	0	0.001883	-0.056358	Dec-20
Jan-21	SOUTHWEST GAS CORP	SWX	59.96	-0.013	0	0.002042	-0.015046	Jan-21
Feb-21	SOUTHWEST GAS CORP	SWX	62.35	0.049366	0.57	0.00225	0.047116	Feb-21
Mar-21	SOUTHWEST GAS CORP	SWX	68.71	0.102005	0	0.002533	0.099471	Mar-21

Unique Index Number	Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP	Trading Date
66	Jan-26	LACLEDE GAS & LT CO		-162	0.022082	0	0.0031	0.0190	Jan-26
66	Feb-26	LACLEDE GAS & LT CO		162.5	0.003086	0	0.0028	0.0003	Feb-26
66	Mar-26	LACLEDE GAS & LT CO		155	-0.03385	2	0.0032	-0.0370	Mar-26
66	Apr-26	LACLEDE GAS & LT CO		-154.25	-0.00484	0	0.0030	-0.0078	Apr-26
66	May-26	LACLEDE GAS & LT CO		155	0.004862	0	0.0028	0.0021	May-26
66	Jun-26	LACLEDE GAS & LT CO		157	0.025806	2	0.0033	0.0225	Jun-26
66	Jul-26	LACLEDE GAS & LT CO		-166	0.057325	0	0.0031	0.0542	Jul-26
66	Aug-26	LACLEDE GAS & LT CO		-166.5	0.003012	0	0.0031	-0.0001	Aug-26
66	Sep-26	LACLEDE GAS & LT CO		-161	-0.02102	2	0.0030	-0.0240	Sep-26
66	Oct-26	LACLEDE GAS & LT CO		-162.5	0.009317	0	0.0030	0.0063	Oct-26
66	Nov-26	LACLEDE GAS & LT CO		175	0.076923	0	0.0031	0.0738	Nov-26
66	Dec-26	LACLEDE GAS & LT CO		180	0.051429	4	0.0030	0.0484	Dec-26
66	Jan-27	LACLEDE GAS & LT CO		174	-0.00111	0	0.0030	-0.0041	Jan-27
66	Feb-27	LACLEDE GAS & LT CO		186	0.068966	0	0.0027	0.0663	Feb-27
66	Mar-27	LACLEDE GAS & LT CO		-181.5	-0.00807	3	0.0029	-0.0110	Mar-27
66	Apr-27	LACLEDE GAS & LT CO		-198.5	0.093664	0	0.0027	0.0910	Apr-27
66	May-27	LACLEDE GAS & LT CO		243.25	0.225441	0	0.0028	0.2226	May-27
66	Jun-27	LACLEDE GAS & LT CO		-231.5	-0.03597	3	0.0027	-0.0387	Jun-27
66	Jul-27	LACLEDE GAS & LT CO		-237	0.023758	0	0.0027	0.0211	Jul-27
66	Aug-27	LACLEDE GAS & LT CO		-237.5	0.00211	0	0.0029	-0.0008	Aug-27
66	Sep-27	LACLEDE GAS & LT CO		-210	-0.10316	3	0.0027	-0.1059	Sep-27
66	Oct-27	LACLEDE GAS & LT CO		-212.5	0.011905	0	0.0028	0.0091	Oct-27
66	Nov-27	LACLEDE GAS & LT CO		-222.5	0.047059	0	0.0027	0.0444	Nov-27
66	Dec-27	LACLEDE GAS & LT CO		-197.5	-0.09888	3	0.0027	-0.1016	Dec-27
66	Jan-28	LACLEDE GAS & LT CO		-245	0.240506	0	0.0027	0.2378	Jan-28
66	Feb-28	LACLEDE GAS & LT CO		0	0	2.5	0.0025	-0.0025	Feb-28
66	Mar-28	LACLEDE GAS & LT CO		-225	-0.07143	0	0.0027	-0.0741	Mar-28
66	Apr-28	LACLEDE GAS & LT CO		-225	0	0	0.0026	-0.0026	Apr-28
66	May-28	LACLEDE GAS & LT CO		-222.5	0	2.5	0.0027	-0.0027	May-28
66	Jun-28	LACLEDE GAS & LT CO		-235	0.05618	0	0.0027	0.0535	Jun-28
66	Jul-28	LACLEDE GAS & LT CO		-225	-0.04255	0	0.0027	-0.0453	Jul-28
66	Aug-28	LACLEDE GAS & LT CO		-257.5	0.155556	2.5	0.0029	0.1527	Aug-28
66	Sep-28	LACLEDE GAS & LT CO		-230	-0.1068	0	0.0027	-0.1095	Sep-28

66	Oct-28	LACLEDE GAS & LT CO	-230	0	0	0.0030	-0.0030	Oct-28
66	Nov-28	LACLEDE GAS & LT CO	-230	0.01087	2.5	0.0027	0.0082	Nov-28
66	Dec-28	LACLEDE GAS & LT CO	-230	0	0	0.0029	-0.0029	Dec-28
66	Jan-29	LACLEDE GAS & LT CO	-242.5	0.054348	0	0.0029	0.0514	Jan-29
66	Feb-29	LACLEDE GAS & LT CO	240.25	-0.00928	0	0.0027	-0.0120	Feb-29
66	Mar-29	LACLEDE GAS & LT CO	-242.5	0.019771	2.5	0.0028	0.0170	Mar-29
66	Apr-29	LACLEDE GAS & LT CO	-235	-0.03093	0	0.0034	-0.0343	Apr-29
66	May-29	LACLEDE GAS & LT CO	-222.5	-0.04255	2.5	0.0030	-0.0456	May-29
66	Jun-29	LACLEDE GAS & LT CO	-232.5	0.044944	0	0.0029	0.0420	Jun-29
66	Jul-29	LACLEDE GAS & LT CO	0	0	0	0.0032	-0.0032	Jul-29
66	Aug-29	LACLEDE GAS & LT CO	-268.25	0.164516	2.5	0.0030	0.1615	Aug-29
66	Sep-29	LACLEDE GAS & LT CO	-238	-0.11277	0	0.0032	-0.1160	Sep-29
66	Oct-29	LACLEDE GAS & LT CO	-180	-0.2437	0	0.0031	-0.2468	Oct-29
66	Nov-29	LACLEDE GAS & LT CO	-217.5	0.208333	0	0.0026	0.2057	Nov-29
66	Dec-29	LACLEDE GAS & LT CO	-225	0.045977	2.5	0.0031	0.0429	Dec-29
66	Jan-30	LACLEDE GAS & LT CO	215	-0.04444	0	0.0029	-0.0473	Jan-30
66	Feb-30	LACLEDE GAS & LT CO	-215	0.011628	2.5	0.0026	0.0090	Feb-30
66	Mar-30	LACLEDE GAS & LT CO	-225	0.046512	0	0.0029	0.0436	Mar-30
66	Apr-30	LACLEDE GAS & LT CO	-225	0	0	0.0027	-0.0027	Apr-30
66	May-30	LACLEDE GAS & LT CO	-225	0	0	0.0027	-0.0027	May-30
66	Jun-30	LACLEDE GAS & LT CO	-225	0.011111	2.5	0.0029	0.0082	Jun-30
66	Jul-30	LACLEDE GAS & LT CO	-216.5	-0.03778	0	0.0028	-0.0406	Jul-30
66	Aug-30	LACLEDE GAS & LT CO	-222.5	0.039261	2.5	0.0026	0.0367	Aug-30
66	Sep-30	LACLEDE GAS & LT CO	-215	-0.03371	0	0.0029	-0.0366	Sep-30
66	Oct-30	LACLEDE GAS & LT CO	-215	0	0	0.0027	-0.0027	Oct-30
66	Nov-30	LACLEDE GAS & LT CO	-215	0	0	0.0026	-0.0026	Nov-30
66	Dec-30	LACLEDE GAS & LT CO	-222.5	0.046512	2.5	0.0028	0.0437	Dec-30
66	Jan-31	LACLEDE GAS & LT CO	-222.5	0	0	0.0028	-0.0028	Jan-31
66	Feb-31	LACLEDE GAS & LT CO	-213.5	-0.04045	0	0.0026	-0.0430	Feb-31
66	Mar-31	LACLEDE GAS & LT CO	-212.5	0.004684	2	0.0029	0.0018	Mar-31
66	Apr-31	LACLEDE GAS & LT CO	-212.5	0	0	0.0027	-0.0027	Apr-31
66	May-31	LACLEDE GAS & LT CO	-210	-0.01177	0	0.0026	-0.0144	May-31
66	Jun-31	LACLEDE GAS & LT CO	-216.5	0.040476	2	0.0028	0.0377	Jun-31
66	Jul-31	LACLEDE GAS & LT CO	-200	-0.07621	0	0.0027	-0.0789	Jul-31
66	Aug-31	LACLEDE GAS & LT CO	-202.5	0.0225	2	0.0027	0.0198	Aug-31
66	Sep-31	LACLEDE GAS & LT CO	-187.5	-0.07407	0	0.0027	-0.0768	Sep-31

66	Oct-31	LACLEDE GAS & LT CO	-187.5	0	0	0.0029	-0.0029	Oct-31
66	Nov-31	LACLEDE GAS & LT CO	-180	-0.04	0	0.0031	-0.0431	Nov-31
66	Dec-31	LACLEDE GAS & LT CO	-130	-0.26667	2	0.0032	-0.2699	Dec-31
66	Jan-32	LACLEDE GAS & LT CO	-130	0	0	0.0032	-0.0032	Jan-32
66	Feb-32	LACLEDE GAS & LT CO	-117.5	-0.09615	0	0.0032	-0.0994	Feb-32
66	Mar-32	LACLEDE GAS & LT CO	-112.5	-0.02979	1.5	0.0031	-0.0329	Mar-32
66	Apr-32	LACLEDE GAS & LT CO	-90	-0.2	0	0.0030	-0.2030	Apr-32
66	May-32	LACLEDE GAS & LT CO	-70	-0.22222	0	0.0028	-0.2250	May-32
66	Jun-32	LACLEDE GAS & LT CO	-45	-0.33571	1.5	0.0028	-0.3385	Jun-32
66	Jul-32	LACLEDE GAS & LT CO	-47.5	0.055556	0	0.0028	0.0528	Jul-32
66	Aug-32	LACLEDE GAS & LT CO	-65	0.368421	0	0.0028	0.3656	Aug-32
66	Sep-32	LACLEDE GAS & LT CO	-61	-0.03846	1.5	0.0026	-0.0411	Sep-32
66	Oct-32	LACLEDE GAS & LT CO	-65	0.065574	0	0.0027	0.0629	Oct-32
66	Nov-32	LACLEDE GAS & LT CO	-66	0.015385	0	0.0026	0.0128	Nov-32
66	Dec-32	LACLEDE GAS & LT CO	-59.5	-0.07576	1.5	0.0027	-0.0785	Dec-32
66	Jan-33	LACLEDE GAS & LT CO	-66.75	0.121849	0	0.0027	0.1191	Jan-33
66	Feb-33	LACLEDE GAS & LT CO	-57.563	-0.13764	0	0.0023	-0.1399	Feb-33
66	Mar-33	LACLEDE GAS & LT CO	-60	0.068404	1.5	0.0027	0.0657	Mar-33
66	Apr-33	LACLEDE GAS & LT CO	-40	-0.33333	0	0.0025	-0.3358	Apr-33
66	May-33	LACLEDE GAS & LT CO	-58.5	0.5	1.5	0.0028	0.4972	May-33
66	Jun-33	LACLEDE GAS & LT CO	-80	0.367521	0	0.0025	0.3650	Jun-33
66	Jul-33	LACLEDE GAS & LT CO	-65.5	-0.18125	0	0.0026	-0.1839	Jul-33
66	Aug-33	LACLEDE GAS & LT CO	-72.5	0.10687	0	0.0026	0.1043	Aug-33
66	Sep-33	LACLEDE GAS & LT CO	54	-0.23448	1.5	0.0025	-0.2370	Sep-33
66	Oct-33	LACLEDE GAS & LT CO	-43.063	-0.20255	0	0.0026	-0.2051	Oct-33
66	Nov-33	LACLEDE GAS & LT CO	-47	0.12627	1.5	0.0025	0.1238	Nov-33
66	Dec-33	LACLEDE GAS & LT CO	-45	-0.04255	0	0.0028	-0.0454	Dec-33
66	Jan-34	LACLEDE GAS & LT CO	-48.625	0.080556	0	0.0029	0.0777	Jan-34
66	Feb-34	LACLEDE GAS & LT CO	-48.563	-0.00129	0	0.0024	-0.0037	Feb-34
66	Mar-34	LACLEDE GAS & LT CO	-38.75	-0.20206	0	0.0027	-0.2048	Mar-34
66	Apr-34	LACLEDE GAS & LT CO	-42	0.083871	0	0.0025	0.0814	Apr-34
66	May-34	LACLEDE GAS & LT CO	0	0	0	0.0025	-0.0025	May-34
66	Jun-34	LACLEDE GAS & LT CO	-32.25	-0.23214	0	0.0024	-0.2345	Jun-34
66	Jul-34	LACLEDE GAS & LT CO	20	-0.37985	0	0.0024	-0.3822	Jul-34
66	Aug-34	LACLEDE GAS & LT CO	-21.75	0.0875	0	0.0024	0.0851	Aug-34
66	Sep-34	LACLEDE GAS & LT CO	-22.75	0.045977	0	0.0023	0.0437	Sep-34

66	Oct-34	LACLEDE GAS & LT CO	21.75	-0.04396	0	0.0027	-0.0467	Oct-34
66	Nov-34	LACLEDE GAS & LT CO	-22.75	0.045977	0	0.0025	0.0435	Nov-34
66	Dec-34	LACLEDE GAS & LT CO	-22	-0.03297	0	0.0025	-0.0355	Dec-34
66	Jan-35	LACLEDE GAS & LT CO	-20.25	-0.07955	0	0.0025	-0.0820	Jan-35
66	Feb-35	LACLEDE GAS & LT CO	15	-0.25926	0	0.0021	-0.2614	Feb-35
66	Mar-35	LACLEDE GAS & LT CO	12	-0.2	0	0.0022	-0.2022	Mar-35
66	Apr-35	LACLEDE GAS & LT CO	-16.5	0.375	0	0.0023	0.3727	Apr-35
66	May-35	LACLEDE GAS & LT CO	20	0.212121	0	0.0023	0.2098	May-35
66	Jun-35	LACLEDE GAS & LT CO	-14.75	-0.2625	0	0.0022	-0.2647	Jun-35
66	Jul-35	LACLEDE GAS & LT CO	23.25	0.576271	0	0.0024	0.5739	Jul-35
66	Aug-35	LACLEDE GAS & LT CO	22	-0.05376	0	0.0023	-0.0561	Aug-35
66	Sep-35	LACLEDE GAS & LT CO	18.25	-0.17046	0	0.0023	-0.1728	Sep-35
66	Oct-35	LACLEDE GAS & LT CO	-19.25	0.054795	0	0.0023	0.0525	Oct-35
66	Nov-35	LACLEDE GAS & LT CO	-21.063	0.094156	0	0.0024	0.0918	Nov-35
66	Dec-35	LACLEDE GAS & LT CO	-23.688	0.124629	0	0.0024	0.1222	Dec-35
66	Jan-36	LACLEDE GAS & LT CO	33	0.39314	0	0.0024	0.3907	Jan-36
66	Feb-36	LACLEDE GAS & LT CO	-26.5	-0.19697	0	0.0023	-0.1993	Feb-36
66	Mar-36	LACLEDE GAS & LT CO	-27.5	0.037736	0	0.0024	0.0353	Mar-36
66	Apr-36	LACLEDE GAS & LT CO	-22.125	-0.19546	0	0.0022	-0.1977	Apr-36
66	May-36	LACLEDE GAS & LT CO	-24.375	0.101695	0	0.0022	0.0995	May-36
66	Jun-36	LACLEDE GAS & LT CO	-23.5	-0.0359	0	0.0024	-0.0383	Jun-36
66	Jul-36	LACLEDE GAS & LT CO	27	0.148936	0	0.0023	0.1466	Jul-36
66	Aug-36	LACLEDE GAS & LT CO	-26.813	-0.00694	0	0.0023	-0.0092	Aug-36
66	Sep-36	LACLEDE GAS & LT CO	28.5	0.062937	0	0.0021	0.0608	Sep-36
66	Oct-36	LACLEDE GAS & LT CO	27	-0.05263	0	0.0023	-0.0549	Oct-36
66	Nov-36	LACLEDE GAS & LT CO	28.5	0.055556	0	0.0022	0.0534	Nov-36
66	Dec-36	LACLEDE GAS & LT CO	23	-0.19298	0	0.0022	-0.1952	Dec-36
66	Jan-37	LACLEDE GAS & LT CO	25	0.086957	0	0.0021	0.0849	Jan-37
66	Feb-37	LACLEDE GAS & LT CO	22.125	-0.115	0	0.0020	-0.1170	Feb-37
66	Mar-37	LACLEDE GAS & LT CO	21.125	-0.0452	0	0.0022	-0.0474	Mar-37
66	Apr-37	LACLEDE GAS & LT CO	-18.938	-0.10355	0	0.0023	-0.1059	Apr-37
66	May-37	LACLEDE GAS & LT CO	-18.625	-0.0165	0	0.0022	-0.0187	May-37
66	Jun-37	LACLEDE GAS & LT CO	-15.5	-0.16779	0	0.0025	-0.1703	Jun-37
66	Jul-37	LACLEDE GAS & LT CO	-17.75	0.145161	0	0.0024	0.1428	Jul-37
66	Aug-37	LACLEDE GAS & LT CO	-17.5	-0.01409	0	0.0023	-0.0164	Aug-37
66	Sep-37	LACLEDE GAS & LT CO	11.875	-0.32143	0	0.0023	-0.3237	Sep-37

66	Oct-37	LACLEDE GAS & LT CO	13	0.094737	0	0.0023	0.0924	Oct-37
66	Nov-37	LACLEDE GAS & LT CO	-12	-0.07692	0	0.0024	-0.0793	Nov-37
66	Dec-37	LACLEDE GAS & LT CO	14.5	0.208333	0	0.0023	0.2060	Dec-37
66	Jan-38	LACLEDE GAS & LT CO	13	-0.10345	0	0.0023	-0.1057	Jan-38
66	Feb-38	LACLEDE GAS & LT CO	-14.75	0.134615	0	0.0021	0.1325	Feb-38
66	Mar-38	LACLEDE GAS & LT CO	9	-0.38983	0	0.0023	-0.3921	Mar-38
66	Apr-38	LACLEDE GAS & LT CO	-10.625	0.180556	0	0.0022	0.1784	Apr-38
66	May-38	LACLEDE GAS & LT CO	11.5	0.082353	0	0.0022	0.0802	May-38
66	Jun-38	LACLEDE GAS & LT CO	15	0.304348	0	0.0021	0.3022	Jun-38
66	Jul-38	LACLEDE GAS & LT CO	-14.75	-0.01667	0	0.0021	-0.0188	Jul-38
66	Aug-38	LACLEDE GAS & LT CO	12	-0.18644	0	0.0022	-0.1886	Aug-38
66	Sep-38	LACLEDE GAS & LT CO	-13.125	0.09375	0	0.0021	0.0917	Sep-38
66	Oct-38	LACLEDE GAS & LT CO	-14.125	0.07619	0	0.0022	0.0740	Oct-38
66	Nov-38	LACLEDE GAS & LT CO	11.75	-0.16814	0	0.0021	-0.1702	Nov-38
66	Dec-38	LACLEDE GAS & LT CO	-11.5	-0.02128	0	0.0022	-0.0235	Dec-38
66	Jan-39	LACLEDE GAS & LT CO	-11.25	-0.02174	0	0.0021	-0.0238	Jan-39
66	Feb-39	LACLEDE GAS & LT CO	12.375	0.1	0	0.0019	0.0981	Feb-39
66	Mar-39	LACLEDE GAS & LT CO	9	-0.27273	0	0.0021	-0.2748	Mar-39
66	Apr-39	LACLEDE GAS & LT CO	-8.75	-0.02778	0	0.0019	-0.0297	Apr-39
66	May-39	LACLEDE GAS & LT CO	10.25	0.171429	0	0.0020	0.1694	May-39
66	Jun-39	LACLEDE GAS & LT CO	-8.75	-0.14634	0	0.0018	-0.1481	Jun-39
66	Jul-39	LACLEDE GAS & LT CO	9	0.028571	0	0.0019	0.0267	Jul-39
66	Aug-39	LACLEDE GAS & LT CO	-8.9375	-0.00694	0	0.0018	-0.0087	Aug-39
66	Sep-39	LACLEDE GAS & LT CO	-10.375	0.160839	0	0.0019	0.1589	Sep-39
66	Oct-39	LACLEDE GAS & LT CO	10	-0.03615	0	0.0023	-0.0384	Oct-39
66	Nov-39	LACLEDE GAS & LT CO	8	-0.2	0	0.0020	-0.2020	Nov-39
66	Dec-39	LACLEDE GAS & LT CO	-8.125	0.015625	0	0.0019	0.0137	Dec-39
66	Jan-40	LACLEDE GAS & LT CO	8	-0.01539	0	0.0020	-0.0174	Jan-40
66	Feb-40	LACLEDE GAS & LT CO	7.875	-0.01563	0	0.0018	-0.0174	Feb-40
66	Mar-40	LACLEDE GAS & LT CO	-8.6875	0.103175	0	0.0019	0.1013	Mar-40
66	Apr-40	LACLEDE GAS & LT CO	-7.4375	-0.14389	0	0.0018	-0.1457	Apr-40
66	May-40	LACLEDE GAS & LT CO	-4.75	-0.36135	0	0.0019	-0.3632	May-40
66	Jun-40	LACLEDE GAS & LT CO	7	0.473684	0	0.0019	0.4718	Jun-40
66	Jul-40	LACLEDE GAS & LT CO	-6.8125	-0.02679	0	0.0020	-0.0288	Jul-40
66	Aug-40	LACLEDE GAS & LT CO	-6.25	-0.08257	0	0.0019	-0.0845	Aug-40
66	Sep-40	LACLEDE GAS & LT CO	-6.5	0.04	0	0.0018	0.0382	Sep-40

66	Oct-40	LACLEDE GAS & LT CO	-7.25	0.115385	0	0.0018	0.1136	Oct-40
66	Nov-40	LACLEDE GAS & LT CO	-6.625	-0.08621	0	0.0018	-0.0880	Nov-40
66	Dec-40	LACLEDE GAS & LT CO	6	-0.09434	0	0.0017	-0.0960	Dec-40
66	Jan-41	LACLEDE GAS & LT CO	-6.625	0.104167	0	0.0016	0.1026	Jan-41
66	Feb-41	LACLEDE GAS & LT CO	-6.5	-0.01887	0	0.0016	-0.0205	Feb-41
66	Mar-41	LACLEDE GAS & LT CO	6.875	0.057692	0	0.0018	0.0559	Mar-41
66	Apr-41	LACLEDE GAS & LT CO	6.5	-0.05455	0	0.0017	-0.0562	Apr-41
66	May-41	LACLEDE GAS & LT CO	-6.4375	-0.00962	0	0.0017	-0.0113	May-41
66	Jun-41	LACLEDE GAS & LT CO	-7.1875	0.116505	0	0.0016	0.1149	Jun-41
66	Jul-41	LACLEDE GAS & LT CO	12.5	0.73913	0	0.0016	0.7375	Jul-41
66	Aug-41	LACLEDE GAS & LT CO	-14.063	0.125	0	0.0016	0.1234	Aug-41
66	Sep-41	LACLEDE GAS & LT CO	-12.75	-0.09333	0	0.0016	-0.0949	Sep-41
66	Oct-41	LACLEDE GAS & LT CO	-12.875	0.009804	0	0.0016	0.0082	Oct-41
66	Nov-41	LACLEDE GAS & LT CO	11.75	-0.08738	0	0.0014	-0.0888	Nov-41
66	Dec-41	LACLEDE GAS & LT CO	8.25	-0.29787	0	0.0016	-0.2995	Dec-41
66	Jan-42	LACLEDE GAS & LT CO	-9.25	0.121212	0	0.0021	0.1191	Jan-42
66	Feb-42	LACLEDE GAS & LT CO	-9.75	0.054054	0	0.0019	0.0522	Feb-42
66	Mar-42	LACLEDE GAS & LT CO	-9.1875	-0.05769	0	0.0021	-0.0598	Mar-42
66	Apr-42	LACLEDE GAS & LT CO	-8.125	-0.11565	0	0.0020	-0.1176	Apr-42
66	May-42	LACLEDE GAS & LT CO	10.25	0.261538	0	0.0019	0.2596	May-42
66	Jun-42	LACLEDE GAS & LT CO	12	0.170732	0	0.0021	0.1686	Jun-42
66	Jul-42	LACLEDE GAS & LT CO	-11.563	-0.03646	0	0.0021	-0.0386	Jul-42
66	Aug-42	LACLEDE GAS & LT CO	-11.375	-0.01622	0	0.0021	-0.0183	Aug-42
66	Sep-42	LACLEDE GAS & LT CO	9.75	-0.14286	0	0.0020	-0.1449	Sep-42
66	Oct-42	LACLEDE GAS & LT CO	10.375	0.064103	0	0.0021	0.0620	Oct-42
66	Nov-42	LACLEDE GAS & LT CO	-9.25	-0.10843	0	0.0020	-0.1104	Nov-42
66	Dec-42	LACLEDE GAS & LT CO	9.75	0.054054	0	0.0021	0.0520	Dec-42
66	Jan-43	LACLEDE GAS & LT CO	-10.75	0.102564	0	0.0020	0.1006	Jan-43
66	Feb-43	LACLEDE GAS & LT CO	11.75	0.093023	0	0.0019	0.0911	Feb-43
66	Mar-43	LACLEDE GAS & LT CO	14.875	0.265957	0	0.0021	0.2639	Mar-43
66	Apr-43	LACLEDE GAS & LT CO	14.75	-0.0084	0	0.0020	-0.0104	Apr-43
66	May-43	LACLEDE GAS & LT CO	16	0.084746	0	0.0019	0.0828	May-43
66	Jun-43	LACLEDE GAS & LT CO	15.5	-0.03125	0	0.0021	-0.0334	Jun-43
66	Jul-43	LACLEDE GAS & LT CO	-13.5	-0.12903	0	0.0021	-0.1311	Jul-43
66	Aug-43	LACLEDE GAS & LT CO	13.125	-0.02778	0	0.0021	-0.0299	Aug-43
66	Sep-43	LACLEDE GAS & LT CO	14.5	0.104762	0	0.0020	0.1028	Sep-43

66	Oct-43	LACLEDE GAS & LT CO	13.125	-0.09483	0	0.0020	-0.0968	Oct-43
66	Nov-43	LACLEDE GAS & LT CO	10.875	-0.17143	0	0.0021	-0.1735	Nov-43
66	Dec-43	LACLEDE GAS & LT CO	11.5	0.057471	0	0.0021	0.0554	Dec-43
66	Jan-44	LACLEDE GAS & LT CO	12.25	0.065217	0	0.0021	0.0631	Jan-44
66	Feb-44	LACLEDE GAS & LT CO	11.75	-0.04082	0	0.0020	-0.0428	Feb-44
66	Mar-44	LACLEDE GAS & LT CO	12.5	0.06383	0	0.0021	0.0617	Mar-44
66	Apr-44	LACLEDE GAS & LT CO	-11.688	-0.065	0	0.0020	-0.0670	Apr-44
66	May-44	LACLEDE GAS & LT CO	10.25	-0.123	0	0.0022	-0.1252	May-44
66	Jun-44	LACLEDE GAS & LT CO	11	0.073171	0	0.0020	0.0712	Jun-44
66	Jul-44	LACLEDE GAS & LT CO	-9.875	-0.10227	0	0.0021	-0.1044	Jul-44
66	Aug-44	LACLEDE GAS & LT CO	-9.8125	-0.00633	0	0.0021	-0.0084	Aug-44
66	Sep-44	LACLEDE GAS & LT CO	10	0.019108	0	0.0020	0.0171	Sep-44
66	Oct-44	LACLEDE GAS & LT CO	-10.188	0.01875	0	0.0021	0.0167	Oct-44
66	Nov-44	LACLEDE GAS & LT CO	9.75	-0.04295	0	0.0020	-0.0449	Nov-44
66	Dec-44	LACLEDE GAS & LT CO	9.375	-0.03846	0	0.0020	-0.0405	Dec-44
66	Jan-45	LACLEDE GAS & LT CO	7.375	-0.21333	0	0.0021	-0.2154	Jan-45
66	Feb-45	LACLEDE GAS & LT CO	-7.5625	0.025424	0	0.0018	0.0236	Feb-45
66	Mar-45	LACLEDE GAS & LT CO	5.125	-0.32231	0	0.0020	-0.3243	Mar-45
66	Apr-45	LACLEDE GAS & LT CO	5	-0.02439	0	0.0019	-0.0263	Apr-45
66	May-45	LACLEDE GAS & LT CO	5.375	0.075	0	0.0019	0.0731	May-45
66	Jun-45	LACLEDE GAS & LT CO	5.75	0.069767	0	0.0019	0.0679	Jun-45
66	Jul-45	LACLEDE GAS & LT CO	5.75	0	0	0.0018	-0.0018	Jul-45
66	Aug-45	LACLEDE GAS & LT CO	5.625	-0.02174	0	0.0019	-0.0236	Aug-45
66	Sep-45	LACLEDE GAS & LT CO	6	0.066667	0	0.0018	0.0649	Sep-45
66	Oct-45	LACLEDE GAS & LT CO	6.5	0.083333	0	0.0019	0.0814	Oct-45
66	Nov-45	LACLEDE GAS & LT CO	7.375	0.134615	0	0.0018	0.1328	Nov-45
66	Dec-45	LACLEDE GAS & LT CO	6.875	-0.05424	0.1	0.0018	-0.0560	Dec-45
66	Jan-46	LACLEDE GAS & LT CO	8.875	0.290909	0	0.0017	0.2892	Jan-46
66	Feb-46	LACLEDE GAS & LT CO	7.75	-0.12676	0	0.0015	-0.1283	Feb-46
66	Mar-46	LACLEDE GAS & LT CO	7.75	0.006452	0.05	0.0016	0.0049	Mar-46
66	Apr-46	LACLEDE GAS & LT CO	7.5	-0.03226	0	0.0017	-0.0340	Apr-46
66	May-46	LACLEDE GAS & LT CO	8.75	0.166667	0	0.0018	0.1649	May-46
66	Jun-46	LACLEDE GAS & LT CO	7.75	-0.10857	0.05	0.0016	-0.1102	Jun-46
66	Jul-46	LACLEDE GAS & LT CO	7.25	-0.06452	0	0.0019	-0.0664	Jul-46
66	Aug-46	LACLEDE GAS & LT CO	7	-0.03448	0	0.0017	-0.0362	Aug-46
66	Sep-46	LACLEDE GAS & LT CO	6.125	-0.11786	0.05	0.0018	-0.1197	Sep-46

66	Oct-46	LACLEDE GAS & LT CO	6	-0.02041	0	0.0019	-0.0223	Oct-46
66	Nov-46	LACLEDE GAS & LT CO	6.625	0.104167	0	0.0018	0.1024	Nov-46
66	Dec-46	LACLEDE GAS & LT CO	6.25	-0.04906	0.05	0.0019	-0.0510	Dec-46
66	Jan-47	LACLEDE GAS & LT CO	6.625	0.06	0	0.0018	0.0582	Jan-47
66	Feb-47	LACLEDE GAS & LT CO	6	-0.09434	0	0.0016	-0.0959	Feb-47
66	Mar-47	LACLEDE GAS & LT CO	5.625	-0.05417	0.05	0.0018	-0.0560	Mar-47
66	Apr-47	LACLEDE GAS & LT CO	5.125	-0.08889	0	0.0017	-0.0906	Apr-47
66	May-47	LACLEDE GAS & LT CO	5	-0.02439	0	0.0017	-0.0261	May-47
66	Jun-47	LACLEDE GAS & LT CO	5	0.01	0.05	0.0019	0.0081	Jun-47
66	Jul-47	LACLEDE GAS & LT CO	5.25	0.05	0	0.0018	0.0482	Jul-47
66	Aug-47	LACLEDE GAS & LT CO	6.125	0.166667	0	0.0017	0.1650	Aug-47
66	Sep-47	LACLEDE GAS & LT CO	5.625	-0.07347	0.05	0.0018	-0.0753	Sep-47
66	Oct-47	LACLEDE GAS & LT CO	5.375	-0.04444	0	0.0018	-0.0462	Oct-47
66	Nov-47	LACLEDE GAS & LT CO	5	-0.06977	0	0.0017	-0.0715	Nov-47
66	Dec-47	LACLEDE GAS & LT CO	4.875	-0.015	0.05	0.0021	-0.0171	Dec-47
66	Jan-48	LACLEDE GAS & LT CO	5.125	0.051282	0	0.0020	0.0493	Jan-48
66	Feb-48	LACLEDE GAS & LT CO	5	-0.02439	0	0.0019	-0.0263	Feb-48
66	Mar-48	LACLEDE GAS & LT CO	5.125	0.037426	0.05012	0.0022	0.0352	Mar-48
66	Apr-48	LACLEDE GAS & LT CO	5.5	0.073171	0	0.0020	0.0712	Apr-48
66	May-48	LACLEDE GAS & LT CO	6.125	0.113636	0	0.0018	0.1118	May-48
66	Jun-48	LACLEDE GAS & LT CO	6	-0.01225	0.05	0.0021	-0.0143	Jun-48
66	Jul-48	LACLEDE GAS & LT CO	5.875	-0.02083	0	0.0019	-0.0227	Jul-48
66	Aug-48	LACLEDE GAS & LT CO	5.75	-0.02128	0	0.0021	-0.0234	Aug-48
66	Sep-48	LACLEDE GAS & LT CO	5.75	0.008696	0.05	0.0020	0.0067	Sep-48
66	Oct-48	LACLEDE GAS & LT CO	6	0.043478	0	0.0019	0.0416	Oct-48
66	Nov-48	LACLEDE GAS & LT CO	5.125	-0.14583	0	0.0021	-0.1479	Nov-48
66	Dec-48	LACLEDE GAS & LT CO	5	-0.01463	0.05	0.0020	-0.0166	Dec-48
66	Jan-49	LACLEDE GAS & LT CO	5.625	0.125	0	0.0020	0.1230	Jan-49
66	Feb-49	LACLEDE GAS & LT CO	5.75	0.022222	0	0.0018	0.0204	Feb-49
66	Mar-49	LACLEDE GAS & LT CO	6.75	0.182609	0.05	0.0019	0.1807	Mar-49
66	Apr-49	LACLEDE GAS & LT CO	6.5	-0.03704	0	0.0018	-0.0388	Apr-49
66	May-49	LACLEDE GAS & LT CO	6.625	0.019231	0	0.0020	0.0172	May-49
66	Jun-49	LACLEDE GAS & LT CO	6.375	-0.03019	0.05	0.0019	-0.0321	Jun-49
66	Jul-49	LACLEDE GAS & LT CO	6.625	0.039216	0	0.0017	0.0375	Jul-49
66	Aug-49	LACLEDE GAS & LT CO	7.125	0.075472	0	0.0019	0.0736	Aug-49
66	Sep-49	LACLEDE GAS & LT CO	7.125	0.007018	0.05	0.0017	0.0053	Sep-49

66	Oct-49	LACLEDE GAS & LT CO	7.625	0.070175	0	0.0018	0.0684	Oct-49
66	Nov-49	LACLEDE GAS & LT CO	7.5	-0.01639	0	0.0017	-0.0181	Nov-49
66	Dec-49	LACLEDE GAS & LT CO	7.5	0.006667	0.05	0.0017	0.0050	Dec-49
66	Jan-50	LACLEDE GAS & LT CO	6.875	-0.08333	0	0.0018	-0.0851	Jan-50
66	Feb-50	LACLEDE GAS & LT CO	6.75	-0.01818	0	0.0016	-0.0198	Feb-50
66	Mar-50	LACLEDE GAS & LT CO	7	0.044444	0.05	0.0018	0.0426	Mar-50
66	Apr-50	LACLEDE GAS CO	7	0	0	0.0016	-0.0016	Apr-50
66	May-50	LACLEDE GAS CO	7.25	0.035714	0	0.0019	0.0338	May-50
66	Jun-50	LACLEDE GAS CO	6.5	-0.09655	0.05	0.0017	-0.0983	Jun-50
66	Jul-50	LACLEDE GAS CO	6.25	-0.03846	0	0.0018	-0.0403	Jul-50
66	Aug-50	LACLEDE GAS CO	6.5	0.04	0	0.0018	0.0382	Aug-50
66	Sep-50	LACLEDE GAS CO	6.75	0.046154	0.05	0.0017	0.0445	Sep-50
66	Oct-50	LACLEDE GAS CO	6.75	0	0	0.0019	-0.0019	Oct-50
66	Nov-50	LACLEDE GAS CO	7.375	0.092593	0	0.0018	0.0908	Nov-50
66	Dec-50	LACLEDE GAS CO	7.125	-0.02034	0.1	0.0018	-0.0221	Dec-50
66	Jan-51	LACLEDE GAS CO	7.375	0.035088	0	0.0020	0.0331	Jan-51
66	Feb-51	LACLEDE GAS CO	7.5	0.016949	0	0.0017	0.0152	Feb-51
66	Mar-51	LACLEDE GAS CO	7.25	-0.02	0.1	0.0019	-0.0219	Mar-51
66	Apr-51	LACLEDE GAS CO	7.125	-0.01724	0	0.0020	-0.0192	Apr-51
66	May-51	LACLEDE GAS CO	7.25	0.017544	0	0.0021	0.0154	May-51
66	Jun-51	LACLEDE GAS CO	7	-0.02069	0.1	0.0020	-0.0227	Jun-51
66	Jul-51	LACLEDE GAS CO	7.125	0.017857	0	0.0023	0.0156	Jul-51
66	Aug-51	LACLEDE GAS CO	7.375	0.035088	0	0.0021	0.0330	Aug-51
66	Sep-51	LACLEDE GAS CO	7.75	0.067797	0.125	0.0019	0.0659	Sep-51
66	Oct-51	LACLEDE GAS CO	7.875	0.016129	0	0.0023	0.0138	Oct-51
66	Nov-51	LACLEDE GAS CO	8.125	0.031746	0	0.0021	0.0296	Nov-51
66	Dec-51	LACLEDE GAS CO	8.625	0.076923	0.125	0.0022	0.0747	Dec-51
66	Jan-52	LACLEDE GAS CO	8.625	0	0	0.0023	-0.0023	Jan-52
66	Feb-52	LACLEDE GAS CO	8.375	-0.02899	0	0.0021	-0.0311	Feb-52
66	Mar-52	LACLEDE GAS CO	8.375	0.014925	0.125	0.0023	0.0126	Mar-52
66	Apr-52	LACLEDE GAS CO	8.125	-0.02985	0	0.0022	-0.0321	Apr-52
66	May-52	LACLEDE GAS CO	8.875	0.092308	0	0.0020	0.0903	May-52
66	Jun-52	LACLEDE GAS CO	8.375	-0.04225	0.125	0.0022	-0.0445	Jun-52
66	Jul-52	LACLEDE GAS CO	8.625	0.029851	0	0.0022	0.0277	Jul-52
66	Aug-52	LACLEDE GAS CO	8.75	0.014493	0	0.0021	0.0124	Aug-52
66	Sep-52	LACLEDE GAS CO	8.75	0.014286	0.125	0.0023	0.0120	Sep-52

66	Oct-52	LACLEDE GAS CO	8.875	0.014286	0	0.0023	0.0120	Oct-52
66	Nov-52	LACLEDE GAS CO	8.875	0	0	0.0021	-0.0021	Nov-52
66	Dec-52	LACLEDE GAS CO	9.5	0.084507	0.125	0.0024	0.0821	Dec-52
66	Jan-53	LACLEDE GAS CO	9.625	0.013158	0	0.0023	0.0109	Jan-53
66	Feb-53	LACLEDE GAS CO	9	-0.06494	0	0.0021	-0.0670	Feb-53
66	Mar-53	LACLEDE GAS CO	9.125	0.027778	0.125	0.0025	0.0253	Mar-53
66	Apr-53	LACLEDE GAS CO	8.75	-0.0411	0	0.0024	-0.0435	Apr-53
66	May-53	LACLEDE GAS CO	8.75	0	0	0.0024	-0.0024	May-53
66	Jun-53	LACLEDE GAS CO	8.5	-0.01429	0.125	0.0027	-0.0170	Jun-53
66	Jul-53	LACLEDE GAS CO	8.625	0.014706	0	0.0025	0.0122	Jul-53
66	Aug-53	LACLEDE GAS CO	8.5	-0.01449	0	0.0025	-0.0170	Aug-53
66	Sep-53	LACLEDE GAS CO	8.625	0.029412	0.125	0.0025	0.0269	Sep-53
66	Oct-53	LACLEDE GAS CO	9.5	0.101449	0	0.0023	0.0991	Oct-53
66	Nov-53	LACLEDE GAS CO	9.75	0.026316	0	0.0024	0.0239	Nov-53
66	Dec-53	LACLEDE GAS CO	9.875	0.028205	0.15	0.0024	0.0258	Dec-53
66	Jan-54	LACLEDE GAS CO	10.125	0.025316	0	0.0023	0.0230	Jan-54
66	Feb-54	LACLEDE GAS CO	10.625	0.049383	0	0.0022	0.0472	Feb-54
66	Mar-54	LACLEDE GAS CO	10.75	0.025882	0.15	0.0025	0.0234	Mar-54
66	Apr-54	LACLEDE GAS CO	10.75	0	0	0.0022	-0.0022	Apr-54
66	May-54	LACLEDE GAS CO	11.75	0.093023	0	0.0020	0.0910	May-54
66	Jun-54	LACLEDE GAS CO	11.5	-0.00851	0.15	0.0025	-0.0110	Jun-54
66	Jul-54	LACLEDE GAS CO	11.5	0	0	0.0022	-0.0022	Jul-54
66	Aug-54	LACLEDE GAS CO	11.875	0.032609	0	0.0023	0.0303	Aug-54
66	Sep-54	LACLEDE GAS CO	11.625	-0.00842	0.15	0.0022	-0.0106	Sep-54
66	Oct-54	LACLEDE GAS CO	11.25	-0.03226	0	0.0021	-0.0344	Oct-54
66	Nov-54	LACLEDE GAS CO	12.375	0.1	0	0.0023	0.0977	Nov-54
66	Dec-54	LACLEDE GAS CO	13.375	0.092929	0.15	0.0023	0.0906	Dec-54
66	Jan-55	LACLEDE GAS CO	13.875	0.037383	0	0.0022	0.0352	Jan-55
66	Feb-55	LACLEDE GAS CO	13.125	-0.05405	0	0.0022	-0.0563	Feb-55
66	Mar-55	LACLEDE GAS CO	13	0.001905	0.15	0.0024	-0.0005	Mar-55
66	Apr-55	LACLEDE GAS CO	13.125	0.009615	0	0.0022	0.0074	Apr-55
66	May-55	LACLEDE GAS CO	13.25	0.009524	0	0.0025	0.0070	May-55
66	Jun-55	LACLEDE GAS CO	13.125	0.001887	0.15	0.0023	-0.0004	Jun-55
66	Jul-55	LACLEDE GAS CO	14	0.066667	0	0.0023	0.0644	Jul-55
66	Aug-55	LACLEDE GAS CO	14.5	0.035714	0	0.0027	0.0330	Aug-55
66	Sep-55	LACLEDE GAS CO	14.875	0.038276	0.18	0.0024	0.0359	Sep-55

66	Oct-55	LACLEDE GAS CO	14.625	-0.01681	0	0.0025	-0.0193	Oct-55
66	Nov-55	LACLEDE GAS CO	14.625	0	0	0.0024	-0.0024	Nov-55
66	Dec-55	LACLEDE GAS CO	15.5	0.072137	0.18	0.0024	0.0697	Dec-55
66	Jan-56	LACLEDE GAS CO	15.375	-0.00807	0	0.0025	-0.0106	Jan-56
66	Feb-56	LACLEDE GAS CO	15.875	0.03252	0	0.0023	0.0302	Feb-56
66	Mar-56	LACLEDE GAS CO	15	-0.03722	0.18	0.0023	-0.0395	Mar-56
66	Apr-56	LACLEDE GAS CO	15.375	0.025	0	0.0026	0.0224	Apr-56
66	May-56	LACLEDE GAS CO	15.5	0.00813	0	0.0026	0.0055	May-56
66	Jun-56	LACLEDE GAS CO	15.75	0.027742	0.18	0.0023	0.0254	Jun-56
66	Jul-56	LACLEDE GAS CO	16	0.015873	0	0.0026	0.0133	Jul-56
66	Aug-56	LACLEDE GAS CO	16	0	0	0.0026	-0.0026	Aug-56
66	Sep-56	LACLEDE GAS CO	16	0.0125	0.2	0.0025	0.0100	Sep-56
66	Oct-56	LACLEDE GAS CO	16	0	0	0.0029	-0.0029	Oct-56
66	Nov-56	LACLEDE GAS CO	16	0	0	0.0027	-0.0027	Nov-56
66	Dec-56	LACLEDE GAS CO	15.625	-0.01094	0.2	0.0028	-0.0137	Dec-56
66	Jan-57	LACLEDE GAS CO	15	-0.04	0	0.0029	-0.0429	Jan-57
66	Feb-57	LACLEDE GAS CO	15.375	0.025	0	0.0025	0.0225	Feb-57
66	Mar-57	LACLEDE GAS CO	15.25	0.004878	0.2	0.0026	0.0023	Mar-57
66	Apr-57	LACLEDE GAS CO	15	-0.01639	0	0.0029	-0.0193	Apr-57
66	May-57	LACLEDE GAS CO	14.75	-0.01667	0	0.0029	-0.0196	May-57
66	Jun-57	LACLEDE GAS CO	14	-0.03729	0.2	0.0025	-0.0398	Jun-57
66	Jul-57	LACLEDE GAS CO	14.25	0.017857	0	0.0033	0.0146	Jul-57
66	Aug-57	LACLEDE GAS CO	14	-0.01754	0	0.0030	-0.0205	Aug-57
66	Sep-57	LACLEDE GAS CO	13.875	0.005357	0.2	0.0031	0.0023	Sep-57
66	Oct-57	LACLEDE GAS CO	12.875	-0.07207	0	0.0031	-0.0752	Oct-57
66	Nov-57	LACLEDE GAS CO	13.875	0.07767	0	0.0029	0.0748	Nov-57
66	Dec-57	LACLEDE GAS CO	13.75	0.005405	0.2	0.0029	0.0025	Dec-57
66	Jan-58	LACLEDE GAS CO	15.125	0.1	0	0.0027	0.0973	Jan-58
66	Feb-58	LACLEDE GAS CO	16.375	0.082645	0	0.0025	0.0801	Feb-58
66	Mar-58	LACLEDE GAS CO	16.75	0.036641	0.225	0.0027	0.0339	Mar-58
66	Apr-58	LACLEDE GAS CO	17.5	0.044776	0	0.0026	0.0422	Apr-58
66	May-58	LACLEDE GAS CO	-18.375	0.05	0	0.0024	0.0476	May-58
66	Jun-58	LACLEDE GAS CO	18.75	0.032653	0.225	0.0027	0.0300	Jun-58
66	Jul-58	LACLEDE GAS CO	19.375	0.033333	0	0.0027	0.0306	Jul-58
66	Aug-58	LACLEDE GAS CO	19.25	-0.00645	0	0.0027	-0.0092	Aug-58
66	Sep-58	LACLEDE GAS CO	19.25	0.011688	0.225	0.0032	0.0085	Sep-58

66	Oct-58	LACLEDE GAS CO	19.75	0.025974	0	0.0032	0.0228	Oct-58
66	Nov-58	LACLEDE GAS CO	19.875	0.006329	0	0.0028	0.0035	Nov-58
66	Dec-58	LACLEDE GAS CO	22.25	0.130818	0.225	0.0033	0.1275	Dec-58
66	Jan-59	LACLEDE GAS CO	22.5	0.011236	0	0.0031	0.0081	Jan-59
66	Feb-59	LACLEDE GAS CO	21.875	-0.02778	0	0.0031	-0.0309	Feb-59
66	Mar-59	LACLEDE GAS CO	21.25	-0.01829	0.225	0.0035	-0.0218	Mar-59
66	Apr-59	LACLEDE GAS CO	19.875	-0.06471	0	0.0033	-0.0680	Apr-59
66	May-59	LACLEDE GAS CO	21.5	0.081761	0	0.0033	0.0785	May-59
66	Jun-59	LACLEDE GAS CO	20.375	-0.04186	0.225	0.0036	-0.0455	Jun-59
66	Jul-59	LACLEDE GAS CO	20.625	0.01227	0	0.0035	0.0088	Jul-59
66	Aug-59	LACLEDE GAS CO	20.5	-0.00606	0	0.0035	-0.0096	Aug-59
66	Sep-59	LACLEDE GAS CO	19.625	-0.03171	0.225	0.0034	-0.0351	Sep-59
66	Oct-59	LACLEDE GAS CO	-19.25	-0.01911	0	0.0035	-0.0226	Oct-59
66	Nov-59	LACLEDE GAS CO	19.75	0.025974	0	0.0035	0.0225	Nov-59
66	Dec-59	LACLEDE GAS CO	21	0.074684	0.225	0.0036	0.0711	Dec-59
66	Jan-60	LACLEDE GAS CO	19.375	-0.07738	0	0.0035	-0.0809	Jan-60
66	Feb-60	LACLEDE GAS CO	18.875	-0.02581	0	0.0037	-0.0295	Feb-60
66	Mar-60	LACLEDE GAS CO	20	0.071523	0.225	0.0036	0.0679	Mar-60
66	Apr-60	LACLEDE GAS CO	22	0.1	0	0.0032	0.0968	Apr-60
66	May-60	LACLEDE GAS CO	22	0	0	0.0037	-0.0037	May-60
66	Jun-60	LACLEDE GAS CO	22.5	0.034659	0.2625	0.0034	0.0313	Jun-60
66	Jul-60	LACLEDE GAS CO	22.25	-0.00368	0	0.0032	-0.0069	Jul-60
66	Aug-60	LACLEDE GAS CO	24.5	0.101124	0	0.0034	0.0977	Aug-60
66	Sep-60	LACLEDE GAS CO	23.125	-0.04541	0.2625	0.0032	-0.0486	Sep-60
66	Oct-60	LACLEDE GAS CO	21.875	-0.05405	0	0.0033	-0.0574	Oct-60
66	Nov-60	LACLEDE GAS CO	24.375	0.114286	0	0.0032	0.1111	Nov-60
66	Dec-60	LACLEDE GAS CO	25.375	0.051795	0.2625	0.0033	0.0485	Dec-60
66	Jan-61	LACLEDE GAS CO	26.5	0.044335	0	0.0033	0.0410	Jan-61
66	Feb-61	LACLEDE GAS CO	28.5	0.075472	0	0.0030	0.0725	Feb-61
66	Mar-61	LACLEDE GAS CO	30	0.061842	0.2625	0.0031	0.0587	Mar-61
66	Apr-61	LACLEDE GAS CO	30	0	0	0.0031	-0.0031	Apr-61
66	May-61	LACLEDE GAS CO	32.5	0.083333	0	0.0034	0.0799	May-61
66	Jun-61	LACLEDE GAS CO	29.5	-0.08423	0.2625	0.0032	-0.0874	Jun-61
66	Jul-61	LACLEDE GAS CO	29.875	0.012712	0	0.0033	0.0094	Jul-61
66	Aug-61	LACLEDE GAS CO	30.5	0.020921	0	0.0033	0.0176	Aug-61
66	Sep-61	LACLEDE GAS CO	31.875	0.053689	0.2625	0.0032	0.0505	Sep-61

66	Oct-61	LACLEDE GAS CO		32.75	0.027451	0	0.0034	0.0241	Oct-61
66	Nov-61	LACLEDE GAS CO		32.75	0	0	0.0032	-0.0032	Nov-61
66	Dec-61	LACLEDE GAS CO		30.75	-0.05305	0.2625	0.0031	-0.0562	Dec-61
66	Jan-62	LACLEDE GAS CO		28.5	-0.07317	0	0.0037	-0.0769	Jan-62
66	Feb-62	LACLEDE GAS CO		28.25	-0.00877	0	0.0032	-0.0120	Feb-62
66	Mar-62	LACLEDE GAS CO		28.375	0.013717	0.2625	0.0033	0.0104	Mar-62
66	Apr-62	LACLEDE GAS CO		27.625	-0.02643	0	0.0033	-0.0297	Apr-62
66	May-62	LACLEDE GAS CO		24.75	-0.10407	0	0.0032	-0.1073	May-62
66	Jun-62	LACLEDE GAS CO		24.25	-0.0096	0.2625	0.0030	-0.0126	Jun-62
66	Jul-62	LACLEDE GAS CO	LG	24.875	0.025773	0	0.0034	0.0224	Jul-62
66	Aug-62	LACLEDE GAS CO	LG	25.125	0.01005	0	0.0034	0.0067	Aug-62
66	Sep-62	LACLEDE GAS CO	LG	24.375	-0.0194	0.2625	0.0030	-0.0224	Sep-62
66	Oct-62	LACLEDE GAS CO	LG	24.875	0.020513	0	0.0035	0.0170	Oct-62
66	Nov-62	LACLEDE GAS CO	LG	26.5	0.065327	0	0.0031	0.0622	Nov-62
66	Dec-62	LACLEDE GAS CO	LG	27.875	0.061792	0.2625	0.0032	0.0586	Dec-62
66	Jan-63	LACLEDE GAS CO	LG	31.25	0.121076	0	0.0032	0.1179	Jan-63
66	Feb-63	LACLEDE GAS CO	LG	30	-0.04	0	0.0029	-0.0429	Feb-63
66	Mar-63	LACLEDE GAS CO	LG	32.625	0.09625	0.2625	0.0031	0.0932	Mar-63
66	Apr-63	LACLEDE GAS CO	LG	34.25	0.049808	0	0.0034	0.0464	Apr-63
66	May-63	LACLEDE GAS CO	LG	30	-0.0365	0	0.0033	-0.0398	May-63
66	Jun-63	LACLEDE GAS CO	LG	29.75	0.000417	0.2625	0.0030	-0.0026	Jun-63
66	Jul-63	LACLEDE GAS CO	LG	30	0.008403	0	0.0036	0.0048	Jul-63
66	Aug-63	LACLEDE GAS CO	LG	29.25	-0.025	0	0.0033	-0.0283	Aug-63
66	Sep-63	LACLEDE GAS CO	LG	27.625	-0.04658	0.2625	0.0034	-0.0500	Sep-63
66	Oct-63	LACLEDE GAS CO	LG	27.25	-0.01358	0	0.0034	-0.0170	Oct-63
66	Nov-63	LACLEDE GAS CO	LG	26.375	-0.03211	0	0.0032	-0.0353	Nov-63
66	Dec-63	LACLEDE GAS CO	LG	27	0.033649	0.2625	0.0036	0.0300	Dec-63
66	Jan-64	LACLEDE GAS CO	LG	26	-0.03704	0	0.0035	-0.0405	Jan-64
66	Feb-64	LACLEDE GAS CO	LG	24.875	-0.04327	0	0.0032	-0.0465	Feb-64
66	Mar-64	LACLEDE GAS CO	LG	24.75	0.005528	0.2625	0.0037	0.0018	Mar-64
66	Apr-64	LACLEDE GAS CO	LG	24	-0.0303	0	0.0035	-0.0338	Apr-64
66	May-64	LACLEDE GAS CO	LG	24.5	0.020833	0	0.0032	0.0176	May-64
66	Jun-64	LACLEDE GAS CO	LG	24.75	0.020918	0.2625	0.0038	0.0171	Jun-64
66	Jul-64	LACLEDE GAS CO	LG	24.25	-0.0202	0	0.0035	-0.0237	Jul-64
66	Aug-64	LACLEDE GAS CO	LG	25.625	0.056701	0	0.0035	0.0532	Aug-64
66	Sep-64	LACLEDE GAS CO	LG	25.625	0.010244	0.2625	0.0034	0.0068	Sep-64

66	Oct-64	LACLEDE GAS CO	LG	26	0.014634	0	0.0034	0.0112	Oct-64
66	Nov-64	LACLEDE GAS CO	LG	26.25	0.009615	0	0.0035	0.0061	Nov-64
66	Dec-64	LACLEDE GAS CO	LG	26	0.001429	0.2875	0.0035	-0.0021	Dec-64
66	Jan-65	LACLEDE GAS CO	LG	26.25	0.009615	0	0.0033	0.0063	Jan-65
66	Feb-65	LACLEDE GAS CO	LG	27.875	0.061905	0	0.0032	0.0587	Feb-65
66	Mar-65	LACLEDE GAS CO	LG	26.5	-0.03901	0.2875	0.0038	-0.0428	Mar-65
66	Apr-65	LACLEDE GAS CO	LG	26.625	0.004717	0	0.0033	0.0014	Apr-65
66	May-65	LACLEDE GAS CO	LG	27	0.014085	0	0.0033	0.0108	May-65
66	Jun-65	LACLEDE GAS CO	LG	25.75	-0.03565	0.2875	0.0038	-0.0394	Jun-65
66	Jul-65	LACLEDE GAS CO	LG	26	0.009709	0	0.0034	0.0063	Jul-65
66	Aug-65	LACLEDE GAS CO	LG	25.625	-0.01442	0	0.0037	-0.0181	Aug-65
66	Sep-65	LACLEDE GAS CO	LG	25.375	0.001463	0.2875	0.0035	-0.0020	Sep-65
66	Oct-65	LACLEDE GAS CO	LG	26.25	0.034483	0	0.0034	0.0311	Oct-65
66	Nov-65	LACLEDE GAS CO	LG	25.75	-0.01905	0	0.0037	-0.0227	Nov-65
66	Dec-65	LACLEDE GAS CO	LG	27.125	0.065534	0.3125	0.0037	0.0618	Dec-65
66	Jan-66	LACLEDE GAS CO	LG	26	-0.04148	0	0.0038	-0.0453	Jan-66
66	Feb-66	LACLEDE GAS CO	LG	25	-0.03846	0	0.0034	-0.0419	Feb-66
66	Mar-66	LACLEDE GAS CO	LG	24.75	0.0025	0.3125	0.0040	-0.0015	Mar-66
66	Apr-66	LACLEDE GAS CO	LG	24.125	-0.02525	0	0.0036	-0.0289	Apr-66
66	May-66	LACLEDE GAS CO	LG	23.875	-0.01036	0	0.0041	-0.0145	May-66
66	Jun-66	LACLEDE GAS CO	LG	23.875	0.013089	0.3125	0.0039	0.0092	Jun-66
66	Jul-66	LACLEDE GAS CO	LG	23.375	-0.02094	0	0.0038	-0.0247	Jul-66
66	Aug-66	LACLEDE GAS CO	LG	22.625	-0.03209	0	0.0043	-0.0364	Aug-66
66	Sep-66	LACLEDE GAS CO	LG	22.25	-0.00276	0.3125	0.0041	-0.0069	Sep-66
66	Oct-66	LACLEDE GAS CO	LG	22	-0.01124	0	0.0040	-0.0152	Oct-66
66	Nov-66	LACLEDE GAS CO	LG	22.125	0.005682	0	0.0038	0.0019	Nov-66
66	Dec-66	LACLEDE GAS CO	LG	21.125	-0.03107	0.3125	0.0039	-0.0350	Dec-66
66	Jan-67	LACLEDE GAS CO	LG	23.875	0.130178	0	0.0040	0.1262	Jan-67
66	Feb-67	LACLEDE GAS CO	LG	23.375	-0.02094	0	0.0034	-0.0243	Feb-67
66	Mar-67	LACLEDE GAS CO	LG	23.375	0.013369	0.3125	0.0039	0.0095	Mar-67
66	Apr-67	LACLEDE GAS CO	LG	22.875	-0.02139	0	0.0035	-0.0249	Apr-67
66	May-67	LACLEDE GAS CO	LG	23.25	0.016393	0	0.0043	0.0121	May-67
66	Jun-67	LACLEDE GAS CO	LG	23.5	0.024731	0.325	0.0039	0.0208	Jun-67
66	Jul-67	LACLEDE GAS CO	LG	23.75	0.010638	0	0.0043	0.0063	Jul-67
66	Aug-67	LACLEDE GAS CO	LG	23.5	-0.01053	0	0.0042	-0.0147	Aug-67
66	Sep-67	LACLEDE GAS CO	LG	23.375	0.008511	0.325	0.0040	0.0045	Sep-67

66	Oct-67	LACLEDE GAS CO	LG	23	-0.01604	0	0.0045	-0.0205	Oct-67
66	Nov-67	LACLEDE GAS CO	LG	22.625	-0.0163	0	0.0045	-0.0208	Nov-67
66	Dec-67	LACLEDE GAS CO	LG	21.875	-0.01879	0.325	0.0044	-0.0232	Dec-67
66	Jan-68	LACLEDE GAS CO	LG	23.375	0.068571	0	0.0050	0.0636	Jan-68
66	Feb-68	LACLEDE GAS CO	LG	22.375	-0.04278	0	0.0042	-0.0470	Feb-68
66	Mar-68	LACLEDE GAS CO	LG	21.625	-0.01899	0.325	0.0043	-0.0233	Mar-68
66	Apr-68	LACLEDE GAS CO	LG	21.625	0	0	0.0049	-0.0049	Apr-68
66	May-68	LACLEDE GAS CO	LG	22	0.017341	0	0.0046	0.0127	May-68
66	Jun-68	LACLEDE GAS CO	LG	23	0.060227	0.325	0.0042	0.0560	Jun-68
66	Jul-68	LACLEDE GAS CO	LG	23.625	0.027174	0	0.0048	0.0224	Jul-68
66	Aug-68	LACLEDE GAS CO	LG	22.75	-0.03704	0	0.0042	-0.0412	Aug-68
66	Sep-68	LACLEDE GAS CO	LG	22.875	0.01978	0.325	0.0044	0.0154	Sep-68
66	Oct-68	LACLEDE GAS CO	LG	22.875	0	0	0.0045	-0.0045	Oct-68
66	Nov-68	LACLEDE GAS CO	LG	25.5	0.114754	0	0.0043	0.1105	Nov-68
66	Dec-68	LACLEDE GAS CO	LG	23.625	-0.06078	0.325	0.0049	-0.0657	Dec-68
66	Jan-69	LACLEDE GAS CO	LG	24.5	0.037037	0	0.0050	0.0320	Jan-69
66	Feb-69	LACLEDE GAS CO	LG	23.125	-0.05612	0	0.0046	-0.0607	Feb-69
66	Mar-69	LACLEDE GAS CO	LG	22.5	-0.01297	0.325	0.0047	-0.0177	Mar-69
66	Apr-69	LACLEDE GAS CO	LG	22.25	-0.01111	0	0.0055	-0.0166	Apr-69
66	May-69	LACLEDE GAS CO	LG	22.5	0.011236	0	0.0047	0.0065	May-69
66	Jun-69	LACLEDE GAS CO	LG	21	-0.05222	0.325	0.0055	-0.0577	Jun-69
66	Jul-69	LACLEDE GAS CO	LG	20.375	-0.02976	0	0.0052	-0.0350	Jul-69
66	Aug-69	LACLEDE GAS CO	LG	20.875	0.02454	0	0.0048	0.0197	Aug-69
66	Sep-69	LACLEDE GAS CO	LG	20.25	-0.01437	0.325	0.0055	-0.0199	Sep-69
66	Oct-69	LACLEDE GAS CO	LG	20.375	0.006173	0	0.0057	0.0005	Oct-69
66	Nov-69	LACLEDE GAS CO	LG	20.75	0.018405	0	0.0049	0.0135	Nov-69
66	Dec-69	LACLEDE GAS CO	LG	20.25	-0.00723	0.35	0.0060	-0.0132	Dec-69
66	Jan-70	LACLEDE GAS CO	LG	19.75	-0.02469	0	0.0056	-0.0303	Jan-70
66	Feb-70	LACLEDE GAS CO	LG	20.75	0.050633	0	0.0052	0.0454	Feb-70
66	Mar-70	LACLEDE GAS CO	LG	21.5	0.053012	0.35	0.0056	0.0474	Mar-70
66	Apr-70	LACLEDE GAS CO	LG	20	-0.06977	0	0.0054	-0.0752	Apr-70
66	May-70	LACLEDE GAS CO	LG	20.75	0.0375	0	0.0055	0.0320	May-70
66	Jun-70	LACLEDE GAS CO	LG	19.75	-0.03133	0.35	0.0064	-0.0377	Jun-70
66	Jul-70	LACLEDE GAS CO	LG	20.125	0.018987	0	0.0059	0.0131	Jul-70
66	Aug-70	LACLEDE GAS CO	LG	21.875	0.086957	0	0.0057	0.0813	Aug-70
66	Sep-70	LACLEDE GAS CO	LG	-21.625	0.004571	0.35	0.0056	-0.0010	Sep-70

66	Oct-70	LACLEDE GAS CO	LG	22.375	0.034682	0	0.0055	0.0292	Oct-70
66	Nov-70	LACLEDE GAS CO	LG	25	0.117318	0	0.0058	0.1115	Nov-70
66	Dec-70	LACLEDE GAS CO	LG	24	-0.0255	0.3625	0.0053	-0.0308	Dec-70
66	Jan-71	LACLEDE GAS CO	LG	24	0	0	0.0051	-0.0051	Jan-71
66	Feb-71	LACLEDE GAS CO	LG	24.25	0.010417	0	0.0046	0.0058	Feb-71
66	Mar-71	LACLEDE GAS CO	LG	23.75	-0.00567	0.3625	0.0056	-0.0113	Mar-71
66	Apr-71	LACLEDE GAS CO	LG	24	0.010526	0	0.0048	0.0057	Apr-71
66	May-71	LACLEDE GAS CO	LG	21.75	-0.09375	0	0.0047	-0.0985	May-71
66	Jun-71	LACLEDE GAS CO	LG	21.625	0.01092	0.3625	0.0056	0.0053	Jun-71
66	Jul-71	LACLEDE GAS CO	LG	21.625	0	0	0.0052	-0.0052	Jul-71
66	Aug-71	LACLEDE GAS CO	LG	-22.563	0.043353	0	0.0055	0.0379	Aug-71
66	Sep-71	LACLEDE GAS CO	LG	21.75	-0.01995	0.3625	0.0049	-0.0248	Sep-71
66	Oct-71	LACLEDE GAS CO	LG	22.375	0.028736	0	0.0047	0.0240	Oct-71
66	Nov-71	LACLEDE GAS CO	LG	22.25	-0.00559	0	0.0051	-0.0107	Nov-71
66	Dec-71	LACLEDE GAS CO	LG	22.125	0.010674	0.3625	0.0050	0.0057	Dec-71
66	Jan-72	LACLEDE GAS CO	LG	22.125	0	0	0.0050	-0.0050	Jan-72
66	Feb-72	LACLEDE GAS CO	LG	21.875	-0.0113	0	0.0047	-0.0160	Feb-72
66	Mar-72	LACLEDE GAS CO	LG	21.625	0.005143	0.3625	0.0049	0.0002	Mar-72
66	Apr-72	LACLEDE GAS CO	LG	21.125	-0.02312	0	0.0048	-0.0279	Apr-72
66	May-72	LACLEDE GAS CO	LG	20.625	-0.02367	0	0.0055	-0.0292	May-72
66	Jun-72	LACLEDE GAS CO	LG	20.125	-0.00667	0.3625	0.0049	-0.0116	Jun-72
66	Jul-72	LACLEDE GAS CO	LG	20.25	0.006211	0	0.0051	0.0011	Jul-72
66	Aug-72	LACLEDE GAS CO	LG	20.375	0.006173	0	0.0049	0.0013	Aug-72
66	Sep-72	LACLEDE GAS CO	LG	20	-0.00061	0.3625	0.0047	-0.0053	Sep-72
66	Oct-72	LACLEDE GAS CO	LG	21.25	0.0625	0	0.0052	0.0573	Oct-72
66	Nov-72	LACLEDE GAS CO	LG	21.75	0.023529	0	0.0048	0.0187	Nov-72
66	Dec-72	LACLEDE GAS CO	LG	20.625	-0.03506	0.3625	0.0045	-0.0396	Dec-72
66	Jan-73	LACLEDE GAS CO	LG	22.125	0.072727	0	0.0054	0.0673	Jan-73
66	Feb-73	LACLEDE GAS CO	LG	22	-0.00565	0	0.0051	-0.0108	Feb-73
66	Mar-73	LACLEDE GAS CO	LG	21.625	0	0.375	0.0056	-0.0056	Mar-73
66	Apr-73	LACLEDE GAS CO	LG	21.5	-0.00578	0	0.0057	-0.0115	Apr-73
66	May-73	LACLEDE GAS CO	LG	-20.5	-0.04651	0	0.0058	-0.0523	May-73
66	Jun-73	LACLEDE GAS CO	LG	19.75	-0.01829	0.375	0.0055	-0.0238	Jun-73
66	Jul-73	LACLEDE GAS CO	LG	19.25	-0.02532	0	0.0061	-0.0314	Jul-73
66	Aug-73	LACLEDE GAS CO	LG	19.5	0.012987	0	0.0062	0.0068	Aug-73
66	Sep-73	LACLEDE GAS CO	LG	19.5	0.019231	0.375	0.0055	0.0137	Sep-73

66	Oct-73	LACLEDE GAS CO	LG	19.25	-0.01282	0	0.0063	-0.0191	Oct-73
66	Nov-73	LACLEDE GAS CO	LG	18.375	-0.04546	0	0.0056	-0.0511	Nov-73
66	Dec-73	LACLEDE GAS CO	LG	17.75	-0.01279	0.39	0.0060	-0.0188	Dec-73
66	Jan-74	LACLEDE GAS CO	LG	18.25	0.028169	0	0.0061	0.0221	Jan-74
66	Feb-74	LACLEDE GAS CO	LG	19.25	0.054795	0	0.0055	0.0493	Feb-74
66	Mar-74	LACLEDE GAS CO	LG	18.125	-0.03818	0.39	0.0058	-0.0440	Mar-74
66	Apr-74	LACLEDE GAS CO	LG	17.5	-0.03448	0	0.0068	-0.0413	Apr-74
66	May-74	LACLEDE GAS CO	LG	15.875	-0.09286	0	0.0068	-0.0997	May-74
66	Jun-74	LACLEDE GAS CO	LG	15.25	-0.0148	0.39	0.0061	-0.0209	Jun-74
66	Jul-74	LACLEDE GAS CO	LG	15.625	0.02459	0	0.0072	0.0174	Jul-74
66	Aug-74	LACLEDE GAS CO	LG	14.25	-0.088	0	0.0065	-0.0945	Aug-74
66	Sep-74	LACLEDE GAS CO	LG	13.375	-0.03404	0.39	0.0071	-0.0411	Sep-74
66	Oct-74	LACLEDE GAS CO	LG	-15.063	0.126168	0	0.0070	0.1192	Oct-74
66	Nov-74	LACLEDE GAS CO	LG	13.25	-0.12033	0	0.0062	-0.1265	Nov-74
66	Dec-74	LACLEDE GAS CO	LG	12.375	-0.0366	0.39	0.0067	-0.0433	Dec-74
66	Jan-75	LACLEDE GAS CO	LG	17	0.373737	0	0.0068	0.3669	Jan-75
66	Feb-75	LACLEDE GAS CO	LG	16.125	-0.05147	0	0.0060	-0.0575	Feb-75
66	Mar-75	LACLEDE GAS CO	LG	16	0.016434	0.39	0.0066	0.0098	Mar-75
66	Apr-75	LACLEDE GAS CO	LG	16	0	0	0.0067	-0.0067	Apr-75
66	May-75	LACLEDE GAS CO	LG	18.25	0.140625	0	0.0067	0.1339	May-75
66	Jun-75	LACLEDE GAS CO	LG	17.75	-0.00548	0.4	0.0070	-0.0125	Jun-75
66	Jul-75	LACLEDE GAS CO	LG	17.125	-0.03521	0	0.0068	-0.0420	Jul-75
66	Aug-75	LACLEDE GAS CO	LG	16.5	-0.0365	0	0.0065	-0.0430	Aug-75
66	Sep-75	LACLEDE GAS CO	LG	16.625	0.031818	0.4	0.0073	0.0245	Sep-75
66	Oct-75	LACLEDE GAS CO	LG	17.25	0.037594	0	0.0072	0.0304	Oct-75
66	Nov-75	LACLEDE GAS CO	LG	17.625	0.021739	0	0.0061	0.0156	Nov-75
66	Dec-75	LACLEDE GAS CO	LG	17.5	0.015603	0.4	0.0074	0.0082	Dec-75
66	Jan-76	LACLEDE GAS CO	LG	18.25	0.042857	0	0.0065	0.0364	Jan-76
66	Feb-76	LACLEDE GAS CO	LG	19.25	0.054795	0	0.0060	0.0488	Feb-76
66	Mar-76	LACLEDE GAS CO	LG	17.875	-0.04987	0.415	0.0071	-0.0570	Mar-76
66	Apr-76	LACLEDE GAS CO	LG	18.25	0.020979	0	0.0064	0.0146	Apr-76
66	May-76	LACLEDE GAS CO	LG	17.875	-0.02055	0	0.0059	-0.0264	May-76
66	Jun-76	LACLEDE GAS CO	LG	18	0.03021	0.415	0.0073	0.0229	Jun-76
66	Jul-76	LACLEDE GAS CO	LG	19.125	0.0625	0	0.0065	0.0560	Jul-76
66	Aug-76	LACLEDE GAS CO	LG	18.75	-0.01961	0	0.0069	-0.0265	Aug-76
66	Sep-76	LACLEDE GAS CO	LG	18.875	0.0288	0.415	0.0064	0.0224	Sep-76

66	Oct-76	LACLEDE GAS CO	LG	18.875	0	0	0.0061	-0.0061	Oct-76
66	Nov-76	LACLEDE GAS CO	LG	19.5	0.033113	0	0.0066	0.0265	Nov-76
66	Dec-76	LACLEDE GAS CO	LG	20.25	0.059744	0.415	0.0063	0.0534	Dec-76
66	Jan-77	LACLEDE GAS CO	LG	24	0.185185	0	0.0059	0.1793	Jan-77
66	Feb-77	LACLEDE GAS CO	LG	20.75	-0.13542	0	0.0057	-0.1411	Feb-77
66	Mar-77	LACLEDE GAS CO	LG	20.125	-0.01012	0.415	0.0065	-0.0166	Mar-77
66	Apr-77	LACLEDE GAS CO	LG	20.125	0	0	0.0061	-0.0061	Apr-77
66	May-77	LACLEDE GAS CO	LG	21.625	0.074534	0	0.0067	0.0678	May-77
66	Jun-77	LACLEDE GAS CO	LG	23.125	0.088555	0.415	0.0062	0.0824	Jun-77
66	Jul-77	LACLEDE GAS CO	LG	22.75	-0.01622	0	0.0059	-0.0221	Jul-77
66	Aug-77	LACLEDE GAS CO	LG	21.625	-0.04945	0	0.0067	-0.0562	Aug-77
66	Sep-77	LACLEDE GAS CO	LG	21.25	0.00185	0.415	0.0061	-0.0043	Sep-77
66	Oct-77	LACLEDE GAS CO	LG	20.375	-0.04118	0	0.0063	-0.0475	Oct-77
66	Nov-77	LACLEDE GAS CO	LG	21.25	0.042945	0	0.0063	0.0366	Nov-77
66	Dec-77	LACLEDE GAS CO	LG	20.125	-0.03294	0.425	0.0062	-0.0391	Dec-77
66	Jan-78	LACLEDE GAS CO	LG	20	-0.00621	0	0.0069	-0.0131	Jan-78
66	Feb-78	LACLEDE GAS CO	LG	20	0	0	0.0060	-0.0060	Feb-78
66	Mar-78	LACLEDE GAS CO	LG	20	0.02125	0.425	0.0069	0.0144	Mar-78
66	Apr-78	LACLEDE GAS CO	LG	19.5	-0.025	0	0.0063	-0.0313	Apr-78
66	May-78	LACLEDE GAS CO	LG	19.125	-0.01923	0	0.0075	-0.0267	May-78
66	Jun-78	LACLEDE GAS CO	LG	18.875	0.00915	0.425	0.0069	0.0023	Jun-78
66	Jul-78	LACLEDE GAS CO	LG	18.875	0	0	0.0073	-0.0073	Jul-78
66	Aug-78	LACLEDE GAS CO	LG	19.125	0.013245	0	0.0070	0.0062	Aug-78
66	Sep-78	LACLEDE GAS CO	LG	19.375	0.035294	0.425	0.0065	0.0288	Sep-78
66	Oct-78	LACLEDE GAS CO	LG	17.875	-0.07742	0	0.0073	-0.0847	Oct-78
66	Nov-78	LACLEDE GAS CO	LG	18.75	0.048951	0	0.0071	0.0419	Nov-78
66	Dec-78	LACLEDE GAS CO	LG	18.125	-0.00853	0.465	0.0068	-0.0153	Dec-78
66	Jan-79	LACLEDE GAS CO	LG	19.875	0.096552	0	0.0079	0.0887	Jan-79
66	Feb-79	LACLEDE GAS CO	LG	22.125	0.113208	0	0.0065	0.1067	Feb-79
66	Mar-79	LACLEDE GAS CO	LG	21.625	-0.00158	0.465	0.0074	-0.0090	Mar-79
66	Apr-79	LACLEDE GAS CO	LG	20.75	-0.04046	0	0.0076	-0.0481	Apr-79
66	May-79	LACLEDE GAS CO	LG	22.25	0.072289	0	0.0077	0.0646	May-79
66	Jun-79	LACLEDE GAS CO	LG	23	0.054607	0.465	0.0071	0.0475	Jun-79
66	Jul-79	LACLEDE GAS CO	LG	22.625	-0.0163	0	0.0076	-0.0239	Jul-79
66	Aug-79	LACLEDE GAS CO	LG	22.75	0.005525	0	0.0073	-0.0018	Aug-79
66	Sep-79	LACLEDE GAS CO	LG	22.5	0.009451	0.465	0.0068	0.0027	Sep-79

66	Oct-79	LACLEDE GAS CO	LG	19.75	-0.12222	0	0.0082	-0.1304	Oct-79
66	Nov-79	LACLEDE GAS CO	LG	20.25	0.025316	0	0.0083	0.0170	Nov-79
66	Dec-79	LACLEDE GAS CO	LG	19.5	-0.01407	0.465	0.0083	-0.0224	Dec-79
66	Jan-80	LACLEDE GAS CO	LG	21.625	0.108974	0	0.0083	0.1007	Jan-80
66	Feb-80	LACLEDE GAS CO	LG	19	-0.12139	0	0.0084	-0.1298	Feb-80
66	Mar-80	LACLEDE GAS CO	LG	15.75	-0.14658	0.465	0.0099	-0.1565	Mar-80
66	Apr-80	LACLEDE GAS CO	LG	18	0.142857	0	0.0100	0.1329	Apr-80
66	May-80	LACLEDE GAS CO	LG	19.125	0.0625	0	0.0087	0.0538	May-80
66	Jun-80	LACLEDE GAS CO	LG	19.875	0.063529	0.465	0.0086	0.0549	Jun-80
66	Jul-80	LACLEDE GAS CO	LG	19.5	-0.01887	0	0.0084	-0.0273	Jul-80
66	Aug-80	LACLEDE GAS CO	LG	18.375	-0.05769	0	0.0081	-0.0658	Aug-80
66	Sep-80	LACLEDE GAS CO	LG	20.375	0.13415	0.465	0.0097	0.1245	Sep-80
66	Oct-80	LACLEDE GAS CO	LG	20.25	-0.00614	0	0.0097	-0.0158	Oct-80
66	Nov-80	LACLEDE GAS CO	LG	23.375	0.154321	0	0.0091	0.1452	Nov-80
66	Dec-80	LACLEDE GAS CO	LG	23.625	0.033583	0.535	0.0108	0.0228	Dec-80
66	Jan-81	LACLEDE GAS CO	LG	21.25	-0.10053	0	0.0094	-0.1099	Jan-81
66	Feb-81	LACLEDE GAS CO	LG	21	-0.01177	0	0.0088	-0.0206	Feb-81
66	Mar-81	LACLEDE GAS CO	LG	19.875	-0.0281	0.535	0.0111	-0.0392	Mar-81
66	Apr-81	LACLEDE GAS CO	LG	19.375	-0.02516	0	0.0101	-0.0353	Apr-81
66	May-81	LACLEDE GAS CO	LG	19.25	-0.00645	0	0.0104	-0.0169	May-81
66	Jun-81	LACLEDE GAS CO	LG	19.125	0.021299	0.535	0.0109	0.0104	Jun-81
66	Jul-81	LACLEDE GAS CO	LG	18.125	-0.05229	0	0.0109	-0.0632	Jul-81
66	Aug-81	LACLEDE GAS CO	LG	18.25	0.006897	0	0.0110	-0.0041	Aug-81
66	Sep-81	LACLEDE GAS CO	LG	16.875	-0.04603	0.535	0.0114	-0.0574	Sep-81
66	Oct-81	LACLEDE GAS CO	LG	16.875	0	0	0.0117	-0.0117	Oct-81
66	Nov-81	LACLEDE GAS CO	LG	20.875	0.237037	0	0.0113	0.2257	Nov-81
66	Dec-81	LACLEDE GAS CO	LG	20	-0.01317	0.6	0.0100	-0.0232	Dec-81
66	Jan-82	LACLEDE GAS CO	LG	18.875	-0.05625	0	0.0108	-0.0671	Jan-82
66	Feb-82	LACLEDE GAS CO	LG	19	0.006623	0	0.0103	-0.0037	Feb-82
66	Mar-82	LACLEDE GAS CO	LG	19.375	0.051316	0.6	0.0124	0.0389	Mar-82
66	Apr-82	LACLEDE GAS CO	LG	19.75	0.019355	0	0.0112	0.0082	Apr-82
66	May-82	LACLEDE GAS CO	LG	21	0.063291	0	0.0101	0.0532	May-82
66	Jun-82	LACLEDE GAS CO	LG	20.75	0.016667	0.6	0.0120	0.0047	Jun-82
66	Jul-82	LACLEDE GAS CO	LG	20.5	-0.01205	0	0.0114	-0.0234	Jul-82
66	Aug-82	LACLEDE GAS CO	LG	21	0.02439	0	0.0112	0.0132	Aug-82
66	Sep-82	LACLEDE GAS CO	LG	21.5	0.052381	0.6	0.0100	0.0424	Sep-82

66	Oct-82	LACLEDE GAS CO	LG	22.625	0.052326	0	0.0091	0.0432	Oct-82
66	Nov-82	LACLEDE GAS CO	LG	24.375	0.077348	0	0.0094	0.0679	Nov-82
66	Dec-82	LACLEDE GAS CO	LG	25.125	0.057436	0.65	0.0093	0.0481	Dec-82
66	Jan-83	LACLEDE GAS CO	LG	25.375	0.00995	0	0.0087	0.0013	Jan-83
66	Feb-83	LACLEDE GAS CO	LG	26	0.024631	0	0.0081	0.0165	Feb-83
66	Mar-83	LACLEDE GAS CO	LG	25.875	0.020192	0.65	0.0089	0.0113	Mar-83
66	Apr-83	LACLEDE GAS CO	LG	26.625	0.028986	0	0.0085	0.0205	Apr-83
66	May-83	LACLEDE GAS CO	LG	26.375	-0.00939	0	0.0091	-0.0185	May-83
66	Jun-83	LACLEDE GAS CO	LG	26.625	0.034123	0.65	0.0090	0.0251	Jun-83
66	Jul-83	LACLEDE GAS CO	LG	28	0.051643	0	0.0088	0.0428	Jul-83
66	Aug-83	LACLEDE GAS CO	LG	26.375	-0.05804	0	0.0103	-0.0683	Aug-83
66	Sep-83	LACLEDE GAS CO	LG	27.25	0.05782	0.65	0.0096	0.0482	Sep-83
66	Oct-83	LACLEDE GAS CO	LG	29.125	0.068807	0	0.0095	0.0593	Oct-83
66	Nov-83	LACLEDE GAS CO	LG	32.75	0.124464	0	0.0094	0.1151	Nov-83
66	Dec-83	LACLEDE GAS CO	LG	31.375	-0.01908	0.75	0.0094	-0.0285	Dec-83
66	Jan-84	LACLEDE GAS CO	LG	32	0.01992	0	0.0103	0.0096	Jan-84
66	Feb-84	LACLEDE GAS CO	LG	33.25	0.039062	0	0.0092	0.0299	Feb-84
66	Mar-84	LACLEDE GAS CO	LG	17.5	0.075188	0.75	0.0098	0.0654	Mar-84
66	Apr-84	LACLEDE GAS CO	LG	18.75	0.071429	0	0.0104	0.0610	Apr-84
66	May-84	LACLEDE GAS CO	LG	17.75	-0.05333	0	0.0103	-0.0636	May-84
66	Jun-84	LACLEDE GAS CO	LG	17.625	0.014085	0.375	0.0106	0.0035	Jun-84
66	Jul-84	LACLEDE GAS CO	LG	17.625	0	0	0.0116	-0.0116	Jul-84
66	Aug-84	LACLEDE GAS CO	LG	17.375	-0.01418	0	0.0106	-0.0248	Aug-84
66	Sep-84	LACLEDE GAS CO	LG	19.875	0.165468	0.375	0.0094	0.1561	Sep-84
66	Oct-84	LACLEDE GAS CO	LG	22.25	0.119497	0	0.0108	0.1087	Oct-84
66	Nov-84	LACLEDE GAS CO	LG	23	0.033708	0	0.0091	0.0246	Nov-84
66	Dec-84	LACLEDE GAS CO	LG	24	0.061957	0.425	0.0098	0.0522	Dec-84
66	Jan-85	LACLEDE GAS CO	LG	24.125	0.005208	0	0.0096	-0.0044	Jan-85
66	Feb-85	LACLEDE GAS CO	LG	24.25	0.005181	0	0.0082	-0.0030	Feb-85
66	Mar-85	LACLEDE GAS CO	LG	23.5	-0.0134	0.425	0.0094	-0.0228	Mar-85
66	Apr-85	LACLEDE GAS CO	LG	21.75	-0.07447	0	0.0102	-0.0847	Apr-85
66	May-85	LACLEDE GAS CO	LG	24.25	0.114943	0	0.0097	0.1052	May-85
66	Jun-85	LACLEDE GAS CO	LG	23.75	-0.00309	0.425	0.0080	-0.0111	Jun-85
66	Jul-85	LACLEDE GAS CO	LG	22.625	-0.04737	0	0.0094	-0.0568	Jul-85
66	Aug-85	LACLEDE GAS CO	LG	22.625	0	0	0.0085	-0.0085	Aug-85
66	Sep-85	LACLEDE GAS CO	LG	24.375	0.096133	0.425	0.0088	0.0873	Sep-85

66	Oct-85	LACLEDE GAS CO	LG	25.25	0.035897	0	0.0089	0.0270	Oct-85
66	Nov-85	LACLEDE GAS CO	LG	28.25	0.118812	0	0.0081	0.1107	Nov-85
66	Dec-85	LACLEDE GAS CO	LG	29.875	0.074336	0.475	0.0086	0.0657	Dec-85
66	Jan-86	LACLEDE GAS CO	LG	29.125	-0.02511	0	0.0079	-0.0330	Jan-86
66	Feb-86	LACLEDE GAS CO	LG	32.75	0.124464	0	0.0073	0.1172	Feb-86
66	Mar-86	LACLEDE GAS CO	LG	33.875	0.048855	0.475	0.0071	0.0418	Mar-86
66	Apr-86	LACLEDE GAS CO	LG	35.5	0.04797	0	0.0063	0.0417	Apr-86
66	May-86	LACLEDE GAS CO	LG	36.625	0.03169	0	0.0062	0.0255	May-86
66	Jun-86	LACLEDE GAS CO	LG	39.25	0.084642	0.475	0.0070	0.0776	Jun-86
66	Jul-86	LACLEDE GAS CO	LG	38.5	-0.01911	0	0.0066	-0.0257	Jul-86
66	Aug-86	LACLEDE GAS CO	LG	36.375	-0.0552	0	0.0063	-0.0615	Aug-86
66	Sep-86	LACLEDE GAS CO	LG	35.125	-0.02131	0.475	0.0065	-0.0278	Sep-86
66	Oct-86	LACLEDE GAS CO	LG	35.25	0.003559	0	0.0069	-0.0033	Oct-86
66	Nov-86	LACLEDE GAS CO	LG	37.375	0.060284	0	0.0059	0.0544	Nov-86
66	Dec-86	LACLEDE GAS CO	LG	36	-0.02274	0.525	0.0070	-0.0297	Dec-86
66	Jan-87	LACLEDE GAS CO	LG	36.75	0.020833	0	0.0064	0.0144	Jan-87
66	Feb-87	LACLEDE GAS CO	LG	37	0.006803	0	0.0059	0.0009	Feb-87
66	Mar-87	LACLEDE GAS CO	LG	37.75	0.034459	0.525	0.0066	0.0279	Mar-87
66	Apr-87	LACLEDE GAS CO	LG	33.625	-0.10927	0	0.0065	-0.1158	Apr-87
66	May-87	LACLEDE GAS CO	LG	32.125	-0.04461	0	0.0066	-0.0512	May-87
66	Jun-87	LACLEDE GAS CO	LG	31.125	-0.01479	0.525	0.0075	-0.0223	Jun-87
66	Jul-87	LACLEDE GAS CO	LG	31.375	0.008032	0	0.0073	0.0007	Jul-87
66	Aug-87	LACLEDE GAS CO	LG	31.5	0.003984	0	0.0075	-0.0035	Aug-87
66	Sep-87	LACLEDE GAS CO	LG	32.75	0.056349	0.525	0.0075	0.0488	Sep-87
66	Oct-87	LACLEDE GAS CO	LG	28.875	-0.11832	0	0.0079	-0.1262	Oct-87
66	Nov-87	LACLEDE GAS CO	LG	28.25	-0.02165	0	0.0075	-0.0291	Nov-87
66	Dec-87	LACLEDE GAS CO	LG	28.125	0.015044	0.55	0.0078	0.0072	Dec-87
66	Jan-88	LACLEDE GAS CO	LG	28	-0.00444	0	0.0072	-0.0116	Jan-88
66	Feb-88	LACLEDE GAS CO	LG	29.5	0.053571	0	0.0071	0.0465	Feb-88
66	Mar-88	LACLEDE GAS CO	LG	29.5	0.018644	0.55	0.0072	0.0114	Mar-88
66	Apr-88	LACLEDE GAS CO	LG	29.5	0	0	0.0070	-0.0070	Apr-88
66	May-88	LACLEDE GAS CO	LG	28.5	-0.0339	0	0.0078	-0.0417	May-88
66	Jun-88	LACLEDE GAS CO	LG	29.375	0.05	0.55	0.0076	0.0424	Jun-88
66	Jul-88	LACLEDE GAS CO	LG	29	-0.01277	0	0.0071	-0.0199	Jul-88
66	Aug-88	LACLEDE GAS CO	LG	28.25	-0.02586	0	0.0083	-0.0342	Aug-88
66	Sep-88	LACLEDE GAS CO	LG	29.5	0.063717	0.55	0.0076	0.0561	Sep-88

66	Oct-88	LACLEDE GAS CO	LG	29.125	-0.01271	0	0.0076	-0.0203	Oct-88
66	Nov-88	LACLEDE GAS CO	LG	30.625	0.051502	0	0.0070	0.0445	Nov-88
66	Dec-88	LACLEDE GAS CO	LG	31	0.03102	0.575	0.0075	0.0235	Dec-88
66	Jan-89	LACLEDE GAS CO	LG	29.5	-0.04839	0	0.0080	-0.0564	Jan-89
66	Feb-89	LACLEDE GAS CO	LG	29.625	0.004237	0	0.0069	-0.0027	Feb-89
66	Mar-89	LACLEDE GAS CO	LG	28.375	-0.02279	0.575	0.0079	-0.0307	Mar-89
66	Apr-89	LACLEDE GAS CO	LG	29.25	0.030837	0	0.0070	0.0238	Apr-89
66	May-89	LACLEDE GAS CO	LG	30	0.025641	0	0.0080	0.0176	May-89
66	Jun-89	LACLEDE GAS CO	LG	30.375	0.031667	0.575	0.0070	0.0247	Jun-89
66	Jul-89	LACLEDE GAS CO	LG	31.75	0.045267	0	0.0068	0.0385	Jul-89
66	Aug-89	LACLEDE GAS CO	LG	31.125	-0.01969	0	0.0066	-0.0263	Aug-89
66	Sep-89	LACLEDE GAS CO	LG	29.75	-0.0257	0.575	0.0065	-0.0322	Sep-89
66	Oct-89	LACLEDE GAS CO	LG	31.25	0.05042	0	0.0072	0.0432	Oct-89
66	Nov-89	LACLEDE GAS CO	LG	33.125	0.06	0	0.0064	0.0536	Nov-89
66	Dec-89	LACLEDE GAS CO	LG	34	0.044226	0.59	0.0064	0.0378	Dec-89
66	Jan-90	LACLEDE GAS CO	LG	32.375	-0.04779	0	0.0073	-0.0551	Jan-90
66	Feb-90	LACLEDE GAS CO	LG	31.5	-0.02703	0	0.0066	-0.0336	Feb-90
66	Mar-90	LACLEDE GAS CO	LG	33.5	0.082222	0.59	0.0071	0.0751	Mar-90
66	Apr-90	LACLEDE GAS CO	LG	32.125	-0.04105	0	0.0075	-0.0485	Apr-90
66	May-90	LACLEDE GAS CO	LG	31.375	-0.02335	0	0.0075	-0.0308	May-90
66	Jun-90	LACLEDE GAS CO	LG	30.125	-0.02104	0.59	0.0068	-0.0278	Jun-90
66	Jul-90	LACLEDE GAS CO	LG	29.75	-0.01245	0	0.0074	-0.0198	Jul-90
66	Aug-90	LACLEDE GAS CO	LG	30.5	0.02521	0	0.0071	0.0181	Aug-90
66	Sep-90	LACLEDE GAS CO	LG	30	0.002951	0.59	0.0069	-0.0039	Sep-90
66	Oct-90	LACLEDE GAS CO	LG	-31.688	0.05625	0	0.0081	0.0482	Oct-90
66	Nov-90	LACLEDE GAS CO	LG	30.375	-0.04142	0	0.0071	-0.0485	Nov-90
66	Dec-90	LACLEDE GAS CO	LG	30.125	0.011523	0.6	0.0072	0.0043	Dec-90
66	Jan-91	LACLEDE GAS CO	LG	31.125	0.033195	0	0.0071	0.0261	Jan-91
66	Feb-91	LACLEDE GAS CO	LG	30.625	-0.01606	0	0.0064	-0.0225	Feb-91
66	Mar-91	LACLEDE GAS CO	LG	31.75	0.056327	0.6	0.0064	0.0499	Mar-91
66	Apr-91	LACLEDE GAS CO	LG	31	-0.02362	0	0.0076	-0.0312	Apr-91
66	May-91	LACLEDE GAS CO	LG	33.25	0.072581	0	0.0068	0.0658	May-91
66	Jun-91	LACLEDE GAS CO	LG	33	0.010526	0.6	0.0063	0.0042	Jun-91
66	Jul-91	LACLEDE GAS CO	LG	34.125	0.034091	0	0.0076	0.0265	Jul-91
66	Aug-91	LACLEDE GAS CO	LG	33.5	-0.01832	0	0.0068	-0.0251	Aug-91
66	Sep-91	LACLEDE GAS CO	LG	35.25	0.070149	0.6	0.0068	0.0633	Sep-91

66	Oct-91	LACLEDE GAS CO	LG	36.375	0.031915	0	0.0065	0.0254	Oct-91
66	Nov-91	LACLEDE GAS CO	LG	36.25	-0.00344	0	0.0060	-0.0094	Nov-91
66	Dec-91	LACLEDE GAS CO	LG	35	-0.01793	0.6	0.0068	-0.0247	Dec-91
66	Jan-92	LACLEDE GAS CO	LG	38.5	0.1	0	0.0061	0.0939	Jan-92
66	Feb-92	LACLEDE GAS CO	LG	37.625	-0.02273	0	0.0059	-0.0286	Feb-92
66	Mar-92	LACLEDE GAS CO	LG	35.125	-0.0505	0.6	0.0067	-0.0572	Mar-92
66	Apr-92	LACLEDE GAS CO	LG	35.875	0.021352	0	0.0065	0.0149	Apr-92
66	May-92	LACLEDE GAS CO	LG	34.625	-0.03484	0	0.0061	-0.0409	May-92
66	Jun-92	LACLEDE GAS CO	LG	35.375	0.038989	0.6	0.0067	0.0323	Jun-92
66	Jul-92	LACLEDE GAS CO	LG	38.375	0.084806	0	0.0063	0.0785	Jul-92
66	Aug-92	LACLEDE GAS CO	LG	40.25	0.04886	0	0.0060	0.0429	Aug-92
66	Sep-92	LACLEDE GAS CO	LG	37.375	-0.05652	0.6	0.0058	-0.0623	Sep-92
66	Oct-92	LACLEDE GAS CO	LG	37.25	-0.00334	0	0.0057	-0.0090	Oct-92
66	Nov-92	LACLEDE GAS CO	LG	40.75	0.09396	0	0.0061	0.0879	Nov-92
66	Dec-92	LACLEDE GAS CO	LG	40.5	0.008589	0.6	0.0063	0.0023	Dec-92
66	Jan-93	LACLEDE GAS CO	LG	41.875	0.033951	0	0.0059	0.0281	Jan-93
66	Feb-93	LACLEDE GAS CO	LG	41.75	-0.00299	0	0.0055	-0.0085	Feb-93
66	Mar-93	LACLEDE GAS CO	LG	43.5	0.056527	0.61	0.0063	0.0502	Mar-93
66	Apr-93	LACLEDE GAS CO	LG	44.375	0.020115	0	0.0057	0.0144	Apr-93
66	May-93	LACLEDE GAS CO	LG	46	0.03662	0	0.0052	0.0314	May-93
66	Jun-93	LACLEDE GAS CO	LG	46.875	0.032283	0.61	0.0062	0.0261	Jun-93
66	Jul-93	LACLEDE GAS CO	LG	47.75	0.018667	0	0.0054	0.0133	Jul-93
66	Aug-93	LACLEDE GAS CO	LG	49.5	0.036649	0	0.0056	0.0310	Aug-93
66	Sep-93	LACLEDE GAS CO	LG	49.625	0.014848	0.61	0.0050	0.0098	Sep-93
66	Oct-93	LACLEDE GAS CO	LG	48.25	-0.02771	0	0.0049	-0.0326	Oct-93
66	Nov-93	LACLEDE GAS CO	LG	48	-0.00518	0	0.0053	-0.0105	Nov-93
66	Dec-93	LACLEDE GAS CO	LG	47.5	0.002292	0.61	0.0055	-0.0032	Dec-93
66	Jan-94	LACLEDE GAS CO	LG	49.5	0.042105	0	0.0055	0.0366	Jan-94
66	Feb-94	LACLEDE GAS CO	LG	47.375	-0.04293	0	0.0049	-0.0478	Feb-94
66	Mar-94	LACLEDE GAS CO	LG	25	0.068285	0.61	0.0058	0.0625	Mar-94
66	Apr-94	LACLEDE GAS CO	LG	23.375	-0.065	0	0.0057	-0.0707	Apr-94
66	May-94	LACLEDE GAS CO	LG	21.75	-0.06952	0	0.0063	-0.0758	May-94
66	Jun-94	LACLEDE GAS CO	LG	21.5	0.002529	0.305	0.0061	-0.0036	Jun-94
66	Jul-94	LACLEDE GAS CO	LG	21.875	0.017442	0	0.0060	0.0114	Jul-94
66	Aug-94	LACLEDE GAS CO	LG	22.5	0.028571	0	0.0066	0.0220	Aug-94
66	Sep-94	LACLEDE GAS CO	LG	21.125	-0.04756	0.305	0.0061	-0.0537	Sep-94

66	Oct-94	LACLEDE GAS CO	LG	20.875	-0.01183	0	0.0066	-0.0184	Oct-94
66	Nov-94	LACLEDE GAS CO	LG	20.875	0	0	0.0064	-0.0064	Nov-94
66	Dec-94	LACLEDE GAS CO	LG	19.875	-0.03305	0.31	0.0066	-0.0397	Dec-94
66	Jan-95	LACLEDE GAS CO	LG	19.5	-0.01887	0	0.0070	-0.0259	Jan-95
66	Feb-95	LACLEDE GAS CO	LG	19.75	0.012821	0	0.0059	0.0069	Feb-95
66	Mar-95	LACLEDE GAS CO	LG	19.5	0.003038	0.31	0.0064	-0.0034	Mar-95
66	Apr-95	LACLEDE GAS CO	LG	18.875	-0.03205	0	0.0058	-0.0379	Apr-95
66	May-95	LACLEDE GAS CO	LG	18.875	0	0	0.0065	-0.0065	May-95
66	Jun-95	LACLEDE GAS CO	LG	19.625	0.056159	0.31	0.0054	0.0508	Jun-95
66	Jul-95	LACLEDE GAS CO	LG	20	0.019108	0	0.0056	0.0135	Jul-95
66	Aug-95	LACLEDE GAS CO	LG	19.875	-0.00625	0	0.0057	-0.0120	Aug-95
66	Sep-95	LACLEDE GAS CO	LG	20.625	0.053333	0.31	0.0052	0.0481	Sep-95
66	Oct-95	LACLEDE GAS CO	LG	20.375	-0.01212	0	0.0057	-0.0178	Oct-95
66	Nov-95	LACLEDE GAS CO	LG	21.125	0.03681	0	0.0051	0.0317	Nov-95
66	Dec-95	LACLEDE GAS CO	LG	21.25	0.020828	0.315	0.0049	0.0159	Dec-95
66	Jan-96	LACLEDE GAS CO	LG	22.375	0.052941	0	0.0054	0.0475	Jan-96
66	Feb-96	LACLEDE GAS CO	LG	21	-0.06145	0	0.0048	-0.0663	Feb-96
66	Mar-96	LACLEDE GAS CO	LG	22.75	0.098333	0.315	0.0052	0.0931	Mar-96
66	Apr-96	LACLEDE GAS CO	LG	23.5	0.032967	0	0.0059	0.0271	Apr-96
66	May-96	LACLEDE GAS CO	LG	22.875	-0.0266	0	0.0058	-0.0324	May-96
66	Jun-96	LACLEDE GAS CO	LG	22.375	-0.00809	0.315	0.0054	-0.0135	Jun-96
66	Jul-96	LACLEDE GAS CO	LG	22.5	0.005587	0	0.0062	-0.0006	Jul-96
66	Aug-96	LACLEDE GAS CO	LG	23.375	0.038889	0	0.0057	0.0332	Aug-96
66	Sep-96	LACLEDE GAS CO	LG	24.25	0.050909	0.315	0.0060	0.0449	Sep-96
66	Oct-96	LACLEDE GAS CO	LG	23.375	-0.03608	0	0.0058	-0.0419	Oct-96
66	Nov-96	LACLEDE GAS CO	LG	23.875	0.02139	0	0.0052	0.0162	Nov-96
66	Dec-96	LACLEDE GAS CO	LG	24.125	0.024084	0.325	0.0056	0.0185	Dec-96
66	Jan-97	LACLEDE GAS CO	LG	24	-0.00518	0	0.0056	-0.0108	Jan-97
66	Feb-97	LACLEDE GAS CO	LG	23.125	-0.03646	0	0.0051	-0.0416	Feb-97
66	Mar-97	LACLEDE GAS CO	LG	20.875	-0.08324	0.325	0.0059	-0.0891	Mar-97
66	Apr-97	LACLEDE GAS CO	LG	22.25	0.065868	0	0.0059	0.0600	Apr-97
66	May-97	LACLEDE GAS CO	LG	21.625	-0.02809	0	0.0058	-0.0339	May-97
66	Jun-97	LACLEDE GAS CO	LG	21.75	0.020809	0.325	0.0059	0.0149	Jun-97
66	Jul-97	LACLEDE GAS CO	LG	23.5	0.08046	0	0.0058	0.0747	Jul-97
66	Aug-97	LACLEDE GAS CO	LG	24.4375	0.039894	0	0.0049	0.0350	Aug-97
66	Sep-97	LACLEDE GAS CO	LG	24.3125	0.008184	0.325	0.0058	0.0024	Sep-97

66	Oct-97	LACLEDE GAS CO	LG	24.9375	0.025707	0	0.0054	0.0203	Oct-97
66	Nov-97	LACLEDE GAS CO	LG	25.8125	0.035088	0	0.0047	0.0304	Nov-97
66	Dec-97	LACLEDE GAS CO	LG	28.0625	0.099952	0.33	0.0054	0.0946	Dec-97
66	Jan-98	LACLEDE GAS CO	LG	24.9375	-0.11136	0	0.0048	-0.1162	Jan-98
66	Feb-98	LACLEDE GAS CO	LG	24.8125	-0.00501	0	0.0044	-0.0094	Feb-98
66	Mar-98	LACLEDE GAS CO	LG	25.0625	0.023375	0.33	0.0052	0.0182	Mar-98
66	Apr-98	LACLEDE GAS CO	LG	24.75	-0.01247	0	0.0049	-0.0174	Apr-98
66	May-98	LACLEDE GAS CO	LG	24.75	0	0	0.0048	-0.0048	May-98
66	Jun-98	LACLEDE GAS CO	LG	24.5	0.003232	0.33	0.0052	-0.0020	Jun-98
66	Jul-98	LACLEDE GAS CO	LG	23.3125	-0.04847	0	0.0049	-0.0534	Jul-98
66	Aug-98	LACLEDE GAS CO	LG	22.625	-0.02949	0	0.0048	-0.0343	Aug-98
66	Sep-98	LACLEDE GAS CO	LG	23.0625	0.033923	0.33	0.0044	0.0295	Sep-98
66	Oct-98	LACLEDE GAS CO	LG	25.625	0.111111	0	0.0042	0.1069	Oct-98
66	Nov-98	LACLEDE GAS CO	LG	25.0625	-0.02195	0	0.0045	-0.0265	Nov-98
66	Dec-98	LACLEDE GAS CO	LG	26.75	0.080698	0.335	0.0045	0.0762	Dec-98
66	Jan-99	LACLEDE GAS CO	LG	23.5625	-0.11916	0	0.0042	-0.1234	Jan-99
66	Feb-99	LACLEDE GAS CO	LG	23	-0.02387	0	0.0040	-0.0279	Feb-99
66	Mar-99	LACLEDE GAS CO	LG	20.9375	-0.07511	0.335	0.0053	-0.0804	Mar-99
66	Apr-99	LACLEDE GAS CO	LG	20.1875	-0.03582	0	0.0048	-0.0406	Apr-99
66	May-99	LACLEDE GAS CO	LG	22.0625	0.092879	0	0.0045	0.0884	May-99
66	Jun-99	LACLEDE GAS CO	LG	23.25	0.069008	0.335	0.0055	0.0635	Jun-99
66	Jul-99	LACLEDE GAS CO	LG	23.4375	0.008065	0	0.0051	0.0030	Jul-99
66	Aug-99	LACLEDE GAS CO	LG	21.6875	-0.07467	0	0.0054	-0.0801	Aug-99
66	Sep-99	LACLEDE GAS CO	LG	22.75	0.064438	0.335	0.0052	0.0592	Sep-99
66	Oct-99	LACLEDE GAS CO	LG	21.3125	-0.06319	0	0.0050	-0.0682	Oct-99
66	Nov-99	LACLEDE GAS CO	LG	21.875	0.026393	0	0.0056	0.0208	Nov-99
66	Dec-99	LACLEDE GAS CO	LG	21.625	0.003886	0.335	0.0055	-0.0016	Dec-99
66	Jan-00	LACLEDE GAS CO	LG	18.875	-0.12717	0	0.0057	-0.1329	Jan-00
66	Feb-00	LACLEDE GAS CO	LG	20	0.059603	0	0.0051	0.0545	Feb-00
66	Mar-00	LACLEDE GAS CO	LG	20	0.01675	0.335	0.0054	0.0114	Mar-00
66	Apr-00	LACLEDE GAS CO	LG	19.625	-0.01875	0	0.0047	-0.0235	Apr-00
66	May-00	LACLEDE GAS CO	LG	19.6875	0.003185	0	0.0056	-0.0024	May-00
66	Jun-00	LACLEDE GAS CO	LG	19.25	-0.00521	0.335	0.0052	-0.0104	Jun-00
66	Jul-00	LACLEDE GAS CO	LG	19.8125	0.029221	0	0.0052	0.0240	Jul-00
66	Aug-00	LACLEDE GAS CO	LG	21.5625	0.088328	0	0.0050	0.0833	Aug-00
66	Sep-00	LACLEDE GAS CO	LG	21.625	0.018435	0.335	0.0046	0.0138	Sep-00

66	Oct-00	LACLEDE GAS CO	LG	21.875	0.011561	0	0.0053	0.0063	Oct-00
66	Nov-00	LACLEDE GAS CO	LG	22.75	0.04	0	0.0048	0.0352	Nov-00
66	Dec-00	LACLEDE GAS CO	LG	23.375	0.042198	0.335	0.0045	0.0377	Dec-00
66	Jan-01	LACLEDE GAS CO	LG	21.25	-0.09091	0	0.0049	-0.0958	Jan-01
66	Feb-01	LACLEDE GAS CO	LG	23.85	0.122353	0	0.0042	0.1182	Feb-01
66	Mar-01	LACLEDE GAS CO	LG	23.3	-0.00902	0.335	0.0045	-0.0135	Mar-01
66	Apr-01	LACLEDE GAS CO	LG	24	0.030043	0	0.0047	0.0253	Apr-01
66	May-01	LACLEDE GAS CO	LG	23.9	-0.00417	0	0.0050	-0.0092	May-01
66	Jun-01	LACLEDE GAS CO	LG	25.4	0.076778	0.335	0.0047	0.0721	Jun-01
66	Jul-01	LACLEDE GAS CO	LG	22	-0.13386	0	0.0052	-0.1391	Jul-01
66	Aug-01	LACLEDE GAS CO	LG	23.9	0.086364	0	0.0046	0.0818	Aug-01
66	Sep-01	LACLEDE GAS CO	LG	24	0.018201	0.335	0.0041	0.0141	Sep-01
66	Oct-01	LACLEDE GROUP INC	LG	22.8	-0.05	0	0.0048	-0.0548	Oct-01
66	Nov-01	LACLEDE GROUP INC	LG	23.7	0.039474	0	0.0041	0.0354	Nov-01
66	Dec-01	LACLEDE GROUP INC	LG	23.9	0.022574	0.335	0.0046	0.0180	Dec-01
66	Jan-02	LACLEDE GROUP INC	LG	23.14	-0.0318	0	0.0048	-0.0366	Jan-02
66	Feb-02	LACLEDE GROUP INC	LG	23.15	0.000432	0	0.0043	-0.0039	Feb-02
66	Mar-02	LACLEDE GROUP INC	LG	23.3	0.02095	0.335	0.0043	0.0167	Mar-02
66	Apr-02	LACLEDE GROUP INC	LG	24.45	0.049356	0	0.0054	0.0440	Apr-02
66	May-02	LACLEDE GROUP INC	LG	24.58	0.005317	0	0.0049	0.0004	May-02
66	Jun-02	LACLEDE GROUP INC	LG	23.48	-0.03112	0.335	0.0044	-0.0355	Jun-02
66	Jul-02	LACLEDE GROUP INC	LG	22.82	-0.02811	0	0.0051	-0.0332	Jul-02
66	Aug-02	LACLEDE GROUP INC	LG	24.1	0.056091	0	0.0044	0.0517	Aug-02
66	Sep-02	LACLEDE GROUP INC	LG	23.3	-0.0193	0.335	0.0042	-0.0235	Sep-02
66	Oct-02	LACLEDE GROUP INC	LG	23.6	0.012876	0	0.0040	0.0089	Oct-02
66	Nov-02	LACLEDE GROUP INC	LG	23.9	0.012712	0	0.0040	0.0087	Nov-02
66	Dec-02	LACLEDE GROUP INC	LG	24.2	0.026569	0.335	0.0045	0.0221	Dec-02
66	Jan-03	LACLEDE GROUP INC	LG	23.62	-0.02397	0	0.0041	-0.0281	Jan-03
66	Feb-03	LACLEDE GROUP INC	LG	22.75	-0.03683	0	0.0038	-0.0406	Feb-03
66	Mar-03	LACLEDE GROUP INC	LG	23.2	0.034506	0.335	0.0040	0.0305	Mar-03
66	Apr-03	LACLEDE GROUP INC	LG	24.1	0.038793	0	0.0040	0.0348	Apr-03
66	May-03	LACLEDE GROUP INC	LG	26	0.078838	0	0.0039	0.0749	May-03
66	Jun-03	LACLEDE GROUP INC	LG	26.8	0.043654	0.335	0.0036	0.0401	Jun-03
66	Jul-03	LACLEDE GROUP INC	LG	27.3	0.018657	0	0.0038	0.0149	Jul-03
66	Aug-03	LACLEDE GROUP INC	LG	27.38	0.00293	0	0.0042	-0.0013	Aug-03
66	Sep-03	LACLEDE GROUP INC	LG	27.01	-0.00128	0.335	0.0046	-0.0059	Sep-03

66	Oct-03	LACLEDE GROUP INC	LG	28.35	0.049611	0	0.0041	0.0455	Oct-03
66	Nov-03	LACLEDE GROUP INC	LG	29.25	0.031746	0	0.0039	0.0278	Nov-03
66	Dec-03	LACLEDE GROUP INC	LG	28.55	-0.01248	0.335	0.0047	-0.0172	Dec-03
66	Jan-04	LACLEDE GROUP INC	LG	29.75	0.042032	0	0.0042	0.0378	Jan-04
66	Feb-04	LACLEDE GROUP INC	LG	30.97	0.041008	0	0.0038	0.0372	Feb-04
66	Mar-04	LACLEDE GROUP INC	LG	30.3	-0.01066	0.34	0.0043	-0.0150	Mar-04
66	Apr-04	LACLEDE GROUP INC	LG	27.59	-0.08944	0	0.0039	-0.0933	Apr-04
66	May-04	LACLEDE GROUP INC	LG	27.24	-0.01269	0	0.0040	-0.0167	May-04
66	Jun-04	LACLEDE GROUP INC	LG	27.41	0.018722	0.34	0.0048	0.0139	Jun-04
66	Jul-04	LACLEDE GROUP INC	LG	26.91	-0.01824	0	0.0043	-0.0225	Jul-04
66	Aug-04	LACLEDE GROUP INC	LG	28.86	0.072464	0	0.0045	0.0680	Aug-04
66	Sep-04	LACLEDE GROUP INC	LG	29.23	0.024601	0.34	0.0040	0.0206	Sep-04
66	Oct-04	LACLEDE GROUP INC	LG	30.15	0.031475	0	0.0038	0.0277	Oct-04
66	Nov-04	LACLEDE GROUP INC	LG	32.2	0.067993	0	0.0041	0.0639	Nov-04
66	Dec-04	LACLEDE GROUP INC	LG	31.15	-0.02205	0.34	0.0043	-0.0264	Dec-04
66	Jan-05	LACLEDE GROUP INC	LG	30.3	-0.02729	0	0.0041	-0.0314	Jan-05
66	Feb-05	LACLEDE GROUP INC	LG	31.38	0.035644	0	0.0035	0.0321	Feb-05
66	Mar-05	LACLEDE GROUP INC	LG	29.2	-0.05848	0.345	0.0041	-0.0626	Mar-05
66	Apr-05	LACLEDE GROUP INC	LG	27.37	-0.06267	0	0.0039	-0.0666	Apr-05
66	May-05	LACLEDE GROUP INC	LG	29.9	0.092437	0	0.0040	0.0884	May-05
66	Jun-05	LACLEDE GROUP INC	LG	31.76	0.073746	0.345	0.0036	0.0701	Jun-05
66	Jul-05	LACLEDE GROUP INC	LG	32.69	0.029282	0	0.0034	0.0259	Jul-05
66	Aug-05	LACLEDE GROUP INC	LG	32.32	-0.01132	0	0.0040	-0.0153	Aug-05
66	Sep-05	LACLEDE GROUP INC	LG	32.49	0.015934	0.345	0.0035	0.0124	Sep-05
66	Oct-05	LACLEDE GROUP INC	LG	29.9	-0.07972	0	0.0039	-0.0836	Oct-05
66	Nov-05	LACLEDE GROUP INC	LG	29.96	0.002007	0	0.0039	-0.0019	Nov-05
66	Dec-05	LACLEDE GROUP INC	LG	29.21	-0.01352	0.345	0.0039	-0.0174	Dec-05
66	Jan-06	LACLEDE GROUP INC	LG	32.62	0.116741	0	0.0040	0.1127	Jan-06
66	Feb-06	LACLEDE GROUP INC	LG	33.69	0.032802	0	0.0036	0.0292	Feb-06
66	Mar-06	LACLEDE GROUP INC	LG	34.42	0.032205	0.355	0.0039	0.0283	Mar-06
66	Apr-06	LACLEDE GROUP INC	LG	34.1	-0.0093	0	0.0039	-0.0132	Apr-06
66	May-06	LACLEDE GROUP INC	LG	33.65	-0.0132	0	0.0048	-0.0180	May-06
66	Jun-06	LACLEDE GROUP INC	LG	34.36	0.031649	0.355	0.0044	0.0272	Jun-06
66	Jul-06	LACLEDE GROUP INC	LG	33.23	-0.03289	0	0.0045	-0.0374	Jul-06
66	Aug-06	LACLEDE GROUP INC	LG	32.59	-0.01926	0	0.0043	-0.0236	Aug-06
66	Sep-06	LACLEDE GROUP INC	LG	32.08	-0.00476	0.355	0.0039	-0.0087	Sep-06

66	Oct-06	LACLEDE GROUP INC	LG	35.63	0.110661	0	0.0042	0.1065	Oct-06
66	Nov-06	LACLEDE GROUP INC	LG	36.58	0.026663	0	0.0039	0.0228	Nov-06
66	Dec-06	LACLEDE GROUP INC	LG	35.03	-0.0324	0.365	0.0036	-0.0360	Dec-06
66	Jan-07	LACLEDE GROUP INC	LG	32.48	-0.0728	0	0.0043	-0.0771	Jan-07
66	Feb-07	LACLEDE GROUP INC	LG	31.15	-0.04095	0	0.0038	-0.0447	Feb-07
66	Mar-07	LACLEDE GROUP INC	LG	31.08	0.00947	0.365	0.0039	0.0056	Mar-07
66	Apr-07	LACLEDE GROUP INC	LG	31.39	0.009974	0	0.0042	0.0058	Apr-07
66	May-07	LACLEDE GROUP INC	LG	31.16	-0.00733	0	0.0041	-0.0114	May-07
66	Jun-07	LACLEDE GROUP INC	LG	31.88	0.03482	0.365	0.0040	0.0308	Jun-07
66	Jul-07	LACLEDE GROUP INC	LG	29.55	-0.07309	0	0.0046	-0.0777	Jul-07
66	Aug-07	LACLEDE GROUP INC	LG	32.64	0.104569	0	0.0042	0.1004	Aug-07
66	Sep-07	LACLEDE GROUP INC	LG	32.28	0.000153	0.365	0.0037	-0.0035	Sep-07
66	Oct-07	LACLEDE GROUP INC	LG	34.79	0.077757	0	0.0043	0.0735	Oct-07
66	Nov-07	LACLEDE GROUP INC	LG	34.41	-0.01092	0	0.0039	-0.0148	Nov-07
66	Dec-07	LACLEDE GROUP INC	LG	34.24	0.005958	0.375	0.0037	0.0023	Dec-07
66	Jan-08	LACLEDE GROUP INC	LG	33.77	-0.01373	0	0.0040	-0.0177	Jan-08
66	Feb-08	LACLEDE GROUP INC	LG	34.15	0.011253	0	0.0034	0.0079	Feb-08
66	Mar-08	LACLEDE GROUP INC	LG	35.63	0.054319	0.375	0.0037	0.0506	Mar-08
66	Apr-08	LACLEDE GROUP INC	LG	37.82	0.061465	0	0.0035	0.0580	Apr-08
66	May-08	LACLEDE GROUP INC	LG	40	0.057641	0	0.0037	0.0539	May-08
66	Jun-08	LACLEDE GROUP INC	LG	40.37	0.018625	0.375	0.0040	0.0146	Jun-08
66	Jul-08	LACLEDE GROUP INC	LG	42.41	0.050533	0	0.0039	0.0466	Jul-08
66	Aug-08	LACLEDE GROUP INC	LG	44.93	0.05942	0	0.0036	0.0558	Aug-08
66	Sep-08	LACLEDE GROUP INC	LG	48.49	0.087581	0.375	0.0039	0.0837	Sep-08
66	Oct-08	LACLEDE GROUP INC	LG	52.32	0.078985	0	0.0037	0.0753	Oct-08
66	Nov-08	LACLEDE GROUP INC	LG	52.68	0.006881	0	0.0036	0.0033	Nov-08
66	Dec-08	LACLEDE GROUP INC	LG	46.84	-0.10355	0.385	0.0033	-0.1069	Dec-08
66	Jan-09	LACLEDE GROUP INC	LG	45.39	-0.03096	0	0.0024	-0.0334	Jan-09
66	Feb-09	LACLEDE GROUP INC	LG	39.58	-0.128	0	0.0030	-0.1310	Feb-09
66	Mar-09	LACLEDE GROUP INC	LG	38.98	-0.00543	0.385	0.0035	-0.0089	Mar-09
66	Apr-09	LACLEDE GROUP INC	LG	34.68	-0.11031	0	0.0029	-0.1132	Apr-09
66	May-09	LACLEDE GROUP INC	LG	31.08	-0.10381	0	0.0033	-0.1071	May-09
66	Jun-09	LACLEDE GROUP INC	LG	33.13	0.078346	0.385	0.0038	0.0745	Jun-09
66	Jul-09	LACLEDE GROUP INC	LG	33.57	0.013281	0	0.0036	0.0097	Jul-09
66	Aug-09	LACLEDE GROUP INC	LG	32.56	-0.03009	0	0.0036	-0.0337	Aug-09
66	Sep-09	LACLEDE GROUP INC	LG	32.16	-0.00046	0.385	0.0034	-0.0039	Sep-09

66	Oct-09	LACLEDE GROUP INC	LG	30.71	-0.04509	0	0.0033	-0.0484	Oct-09
66	Nov-09	LACLEDE GROUP INC	LG	31.31	0.019538	0	0.0035	0.0160	Nov-09
66	Dec-09	LACLEDE GROUP INC	LG	33.77	0.091185	0.395	0.0034	0.0878	Dec-09
66	Jan-10	LACLEDE GROUP INC	LG	32.26	-0.04471	0	0.0036	-0.0483	Jan-10
66	Feb-10	LACLEDE GROUP INC	LG	32.79	0.016429	0	0.0033	0.0131	Feb-10
66	Mar-10	LACLEDE GROUP INC	LG	33.72	0.040409	0.395	0.0040	0.0364	Mar-10
66	Apr-10	LACLEDE GROUP INC	LG	34.08	0.010676	0	0.0038	0.0069	Apr-10
66	May-10	LACLEDE GROUP INC	LG	33.09	-0.02905	0	0.0034	-0.0324	May-10
66	Jun-10	LACLEDE GROUP INC	LG	33.13	0.013146	0.395	0.0037	0.0094	Jun-10
66	Jul-10	LACLEDE GROUP INC	LG	34.94	0.054633	0	0.0031	0.0515	Jul-10
66	Aug-10	LACLEDE GROUP INC	LG	33.3	-0.04694	0	0.0032	-0.0501	Aug-10
66	Sep-10	LACLEDE GROUP INC	LG	34.42	0.045495	0.395	0.0026	0.0429	Sep-10
66	Oct-10	LACLEDE GROUP INC	LG	35.11	0.020047	0	0.0027	0.0173	Oct-10
66	Nov-10	LACLEDE GROUP INC	LG	35.35	0.006836	0	0.0032	0.0036	Nov-10
66	Dec-10	LACLEDE GROUP INC	LG	36.54	0.04512	0.405	0.0032	0.0419	Dec-10
66	Jan-11	LACLEDE GROUP INC	LG	38	0.039956	0	0.003567	0.0364	Jan-11
66	Feb-11	LACLEDE GROUP INC	LG	38.89	0.023421	0	0.003683	0.0197	Feb-11
66	Mar-11	LACLEDE GROUP INC	LG	38.1	-0.0099	0.405	0.003558	-0.0135	Mar-11
66	Apr-11	LACLEDE GROUP INC	LG	38.37	0.007087	0	0.003567	0.0035	Apr-11
66	May-11	LACLEDE GROUP INC	LG	37.61	-0.01981	0	0.003342	-0.0231	May-11
66	Jun-11	LACLEDE GROUP INC	LG	37.83	0.016618	0.405	0.003258	0.0134	Jun-11
66	Jul-11	LACLEDE GROUP INC	LG	37.25	-0.01533	0	0.003292	-0.0186	Jul-11
66	Aug-11	LACLEDE GROUP INC	LG	39.7	0.065772	0	0.003042	0.0627	Aug-11
66	Sep-11	LACLEDE GROUP INC	LG	38.75	-0.01373	0.405	0.002358	-0.0161	Sep-11
66	Oct-11	LACLEDE GROUP INC	LG	40.12	0.035355	0	0.002392	0.0330	Oct-11
66	Nov-11	LACLEDE GROUP INC	LG	40.13	0.000249	0	0.002267	-0.0020	Nov-11
66	Dec-11	LACLEDE GROUP INC	LG	40.47	0.018814	0.415	0.002483	0.0163	Dec-11
66	Jan-12	LACLEDE GROUP INC	LG	41.66	0.029404	0	0.0021	0.0273	Jan-12
66	Feb-12	LACLEDE GROUP INC	LG	41.09	-0.01368	0	0.002	-0.0157	Feb-12
66	Mar-12	LACLEDE GROUP INC	LG	39.02	-0.04028	0.415	0.0022	-0.0425	Mar-12
66	Apr-12	LACLEDE GROUP INC	LG	39.38	0.009226	0	0.0025	0.0067	Apr-12
66	May-12	LACLEDE GROUP INC	LG	38.11	-0.03225	0	0.0023	-0.0346	May-12
66	Jun-12	LACLEDE GROUP INC	LG	39.81	0.055497	0.415	0.0018	0.0537	Jun-12
66	Jul-12	LACLEDE GROUP INC	LG	41.78	0.049485	0	0.002	0.0475	Jul-12
66	Aug-12	LACLEDE GROUP INC	LG	42.25	0.011249	0	0.0018	0.0094	Aug-12
66	Sep-12	LACLEDE GROUP INC	LG	43	0.027574	0.415	0.0017	0.0259	Sep-12

Oct-12	LACLEDE GROUP INC	LG	41.64	-0.03163	0	0.0021	-0.0337	Oct-12
Nov-12	LACLEDE GROUP INC	LG	40.71	-0.02233	0	0.0019	-0.0242	Nov-12
Dec-12	LACLEDE GROUP INC	LG	38.61	-0.04114	0.425	0.0019	-0.0430	Dec-12
Jan-13	LACLEDE GROUP INC	LG	39.92	0.033929	0	0.0022	0.0317	Jan-13
Feb-13	LACLEDE GROUP INC	LG	40.76	0.021042	0	0.0022	0.0188	Feb-13
Mar-13	LACLEDE GROUP INC	LG	42.7	0.058023	0.425	0.0021	0.0559	Mar-13
Apr-13	LACLEDE GROUP INC	LG	46.71	0.093911	0	0.0026	0.0913	Apr-13
May-13	LACLEDE GROUP INC	LG	47.33	0.013273	0	0.0023	0.0110	May-13
Jun-13	LACLEDE GROUP INC	LG	45.66	-0.0263	0.425	0.0024	-0.0287	Jun-13
Jul-13	LACLEDE GROUP INC	LG	45.76	0.00219	0	0.003	-0.0008	Jul-13
Aug-13	LACLEDE GROUP INC	LG	44.53	-0.02688	0	0.0028	-0.0297	Aug-13
Sep-13	LACLEDE GROUP INC	LG	45	0.020099	0.425	0.0029	0.0172	Sep-13
Oct-13	LACLEDE GROUP INC	LG	47.07	0.046	0	0.0029	0.0431	Oct-13
Nov-13	LACLEDE GROUP INC	LG	46.11	-0.0204	0	0.0027	-0.0231	Nov-13
Dec-13	LACLEDE GROUP INC	LG	45.54	-0.00282	0.44	0.0031	-0.0059	Dec-13
Jan-14	LACLEDE GROUP INC	LG	45.89	0.007686	0	0.0032	0.0045	Jan-14
Feb-14	LACLEDE GROUP INC	LG	45.85	-0.00087	0	0.0026	-0.0035	Feb-14
Mar-14	LACLEDE GROUP INC	LG	47.15	0.03795	0.44	0.0029	0.0350	Mar-14
Apr-14	LACLEDE GROUP INC	LG	47.41	0.005514	0	0.0028	0.0027	Apr-14
May-14	LACLEDE GROUP INC	LG	46.68	-0.0154	0	0.0028	-0.0182	May-14
Jun-14	LACLEDE GROUP INC	LG	48.55	0.049486	0.44	0.0025	0.0470	Jun-14
Jul-14	LACLEDE GROUP INC	LG	46.98	-0.03234	0	0.0027	-0.0350	Jul-14
Aug-14	LACLEDE GROUP INC	LG	49.45	0.052576	0	0.0026	0.0500	Aug-14
Sep-14	LACLEDE GROUP INC	LG	46.4	-0.05278	0.44	0.0023	-0.0551	Sep-14
Oct-14	LACLEDE GROUP INC	LG	50.77	0.094181	0	0.0025	0.0917	Oct-14
Nov-14	LACLEDE GROUP INC	LG	50.73	-0.00079	0	0.0023	-0.0031	Nov-14
Dec-14	LACLEDE GROUP INC	LG	53.2	0.057757	0.46	0.0022	0.0556	Dec-14
Jan-15	LACLEDE GROUP INC	LG	53.76	0.010526	0	0.002	0.0085	Jan-15
Feb-15	LACLEDE GROUP INC	LG	51.76	-0.0372	0	0.0015	-0.0387	Feb-15
Mar-15	LACLEDE GROUP INC	LG	51.22	-0.00155	0.46	0.0021	-0.0036	Mar-15
Apr-15	LACLEDE GROUP INC	LG	51.93	0.013862	0	0.0019	0.0120	Apr-15
May-15	LACLEDE GROUP INC	LG	53.51	0.030426	0	0.002	0.0284	May-15
Jun-15	LACLEDE GROUP INC	LG	52.06	-0.0185	0.46	0.003492	-0.0220	Jun-15
Jul-15	LACLEDE GROUP INC	LG	54.11	0.039378	0	0.003458	0.0359	Jul-15
Aug-15	LACLEDE GROUP INC	LG	52.94	-0.02162	0	0.003367	-0.0250	Aug-15
Sep-15	LACLEDE GROUP INC	LG	54.53	0.038723	0.46	0.003392	0.035331	Sep-15

Oct-15	LACLEDE GROUP INC	LG	58.57	0.074088	0	0.003292	0.070796	Oct-15
Nov-15	LACLEDE GROUP INC	LG	58.36	-0.00359	0	0.003383	-0.006969	Nov-15
Dec-15	LACLEDE GROUP INC	LG	59.41	0.026388	0.49	0.003308	0.02308	Dec-15
Jan-16	LACLEDE GROUP INC	LG	63.94	0.07625	0	0.003333	0.072916	Jan-16
Feb-16	LACLEDE GROUP INC	LG	65.52	0.024711	0	0.0033	0.021411	Feb-16
Mar-16	LACLEDE GROUP INC	LG	67.75	0.041514	0.49	0.003183	0.038331	Mar-16
Apr-16	LACLEDE GROUP INC	LG	63.96	-0.05594	0	0.003183	-0.059124	Apr-16
May-16	LACLEDE GROUP INC	LG	63.58	-0.00594	0	0.003042	-0.008983	May-16
Jun-16	LACLEDE GROUP INC	LG	70.84	0.121894	0.49	0.002917	0.118977	Jun-16
Jul-16	LACLEDE GROUP INC	LG	69.4	-0.02033	0	0.002733	-0.023061	Jul-16
Aug-16	LACLEDE GROUP INC	LG	64.7	-0.06772	0	0.002767	-0.07049	Aug-16
Sep-16	LACLEDE GROUP INC	LG	63.74	-0.00726	0.49	0.002842	-0.010106	Sep-16
Oct-16	LACLEDE GROUP INC	LG	62.8	-0.01475	0	0.002842	-0.017589	Oct-16
Nov-16	LACLEDE GROUP INC	LG	64.54	0.027707	0	0.003217	0.02449	Nov-16
Dec-16	LACLEDE GROUP INC	LG	64.55	0.008289	0.525	0.003383	0.004906	Dec-16
Jan-17	LACLEDE GROUP INC	LG	65	0.006971	0	0.003267	0.003705	Jan-17
Feb-17	LACLEDE GROUP INC	LG	65.9	0.013846	0	0.003292	0.010554	Feb-17
Mar-17	LACLEDE GROUP INC	LG	67.5	0.032246	0.525	0.003292	0.028954	Mar-17
Apr-17	LACLEDE GROUP INC	LG	68.55	0.015556	0	0.003225	0.012331	Apr-17
May-17	LACLEDE GROUP INC	LG	70.85	0.033552	0	0.003208	0.030344	May-17
Jun-17	LACLEDE GROUP INC	LG	69.75	-0.00812	0.525	0.003067	-0.011182	Jun-17
Jul-17	LACLEDE GROUP INC	LG	72.6	0.04086	0	0.00315	0.03771	Jul-17
Aug-17	LACLEDE GROUP INC	LG	76.5	0.053719	0	0.003083	0.050636	Aug-17
Sep-17	LACLEDE GROUP INC	LG	74.65	-0.01732	0.525	0.003025	-0.020345	Sep-17
Oct-17	LACLEDE GROUP INC	LG	78.95	0.057602	0	0.003	0.054602	Oct-17
Nov-17	LACLEDE GROUP INC	LG	82.25	0.041799	0	0.003	0.038799	Nov-17
Dec-17	LACLEDE GROUP INC	LG	75.15	-0.07948	0.5625	0.002925	-0.082408	Dec-17
Jan-18	LACLEDE GROUP INC	LG	66.5	-0.1151	0	0.002925	-0.118028	Jan-18
Feb-18	LACLEDE GROUP INC	LG	67.8	0.019549	0	0.002958	0.016591	Feb-18
Mar-18	LACLEDE GROUP INC	LG	72.3	0.074668	0.5625	0.003225	0.071443	Mar-18
Apr-18	LACLEDE GROUP INC	LG	72.15	-0.00207	0	0.003208	-0.005283	Apr-18
May-18	LACLEDE GROUP INC	LG	71.25	-0.01247	0	0.003325	-0.015799	May-18
Jun-18	LACLEDE GROUP INC	LG	70.65	-0.00053	0.5625	0.0033	-0.003826	Jun-18
Jul-18	LACLEDE GROUP INC	LG	71.6	0.013447	0	0.003225	0.010222	Jul-18
Aug-18	LACLEDE GROUP INC	LG	74.55	0.041201	0	0.003233	0.037968	Aug-18
Sep-18	LACLEDE GROUP INC	LG	73.55	-0.00587	0.5625	0.003233	-0.009102	Sep-18

Oct-18	LACLEDE GROUP INC	LG	72.58	-0.01319	0	0.00345	-0.016638	Oct-18
Nov-18	LACLEDE GROUP INC	LG	78.91	0.087214	0	0.003517	0.083697	Nov-18
Dec-18	LACLEDE GROUP INC	LG	74.08	-0.0537	0.5925	0.00335	-0.05705	Dec-18
Jan-19	LACLEDE GROUP INC	LG	79.37	0.071409	0	0.003275	0.068134	Jan-19
Feb-19	LACLEDE GROUP INC	LG	79.32	-0.00063	0	0.003158	-0.003788	Feb-19
Mar-19	LACLEDE GROUP INC	LG	82.29	0.044913	0.5925	0.003158	0.041755	Mar-19
Apr-19	LACLEDE GROUP INC	LG	84.19	0.023089	0	0.003075	0.020014	Apr-19
May-19	LACLEDE GROUP INC	LG	83.32	-0.01033	0	0.003058	-0.013392	May-19
Jun-19	LACLEDE GROUP INC	LG	83.92	0.014312	0.5925	0.003058	0.011254	Jun-19
Jul-19	LACLEDE GROUP INC	LG	82.41	-0.01799	0	0.002742	-0.020735	Jul-19
Aug-19	LACLEDE GROUP INC	LG	84.9	0.030215	0	0.002742	0.027473	Aug-19
Sep-19	LACLEDE GROUP INC	LG	87.24	0.034541	0.5925	0.002483	0.032057	Sep-19
Oct-19	LACLEDE GROUP INC	LG	84.06	-0.03645	0	0.002525	-0.038976	Oct-19
Nov-19	LACLEDE GROUP INC	LG	77.42	-0.07899	0	0.002558	-0.08155	Nov-19
Dec-19	LACLEDE GROUP INC	LG	83.31	0.084119	0.6225	0.002508	0.081611	Dec-19
Jan-20	LACLEDE GROUP INC	LG	84.32	0.012123	0	0.00235	0.009773	Jan-20
Feb-20	LACLEDE GROUP INC	LG	75.05	-0.10994	0	0.00245	-0.112388	Feb-20
Mar-20	LACLEDE GROUP INC	LG	74.48	0.0007	0.6225	0.002317	-0.001617	Mar-20
Apr-20	LACLEDE GROUP INC	LG	72.96	-0.02041	0	0.002025	-0.022433	Apr-20
May-20	LACLEDE GROUP INC	LG	72.92	-0.00055	0	0.002075	-0.002623	May-20
Jun-20	LACLEDE GROUP INC	LG	65.71	-0.09034	0.6225	0.002008	-0.092347	Jun-20
Jul-20	LACLEDE GROUP INC	LG	61.66	-0.06163	0	0.001692	-0.063326	Jul-20
Aug-20	LACLEDE GROUP INC	LG	58.21	-0.05595	0	0.001875	-0.057827	Aug-20
Sep-20	LACLEDE GROUP INC	LG	53.2	-0.07537	0.6225	0.001925	-0.077299	Sep-20
Oct-20	LACLEDE GROUP INC	LG	56.04	0.053383	0	0.001958	0.051425	Oct-20
Nov-20	LACLEDE GROUP INC	LG	63.96	0.141328	0	0.001917	0.139411	Nov-20
Dec-20	LACLEDE GROUP INC	LG	64.04	0.011413	0.65	0.001883	0.00953	Dec-20
Jan-21	LACLEDE GROUP INC	LG	61.19	-0.0445	0	0.002042	-0.046545	Jan-21
Feb-21	LACLEDE GROUP INC	LG	66.42	0.085471	0	0.00225	0.083221	Feb-21
Mar-21	LACLEDE GROUP INC	LG	73.89	0.122252	0.65	0.002533	0.119719	Mar-21

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Atmos Energy
 CAPITALIZATION AND FINANCIAL STATISTICS (1)
 2014 - 2019, Inclusive

	FYE: 9/30/2020	2020	2019	2018	2017	2016	2015
Capital Structure:							
Long Term Debt	LTDEBT	4,531,779,165,000	3,529,452,000,000	3,068,665,000,000	3,067,045,000,000	2,438,779,000,000	2,455,388,000,000
Preferred Stock	PFDD	0.000	0.000	0.000	0.000	0.000	0.000
Common Shares Outst.	Input Data	125,882,477,000	119,338,925,000	111,273,683,000	106,104,634,000	103,930,560,000	101,478,818,000
Common Equity	TOTEC	6,791,203,000,000	5,750,223,000,000	4,769,951,000,000	3,898,666,000,000	3,463,059,000,000	3,194,797,000,000
Sinking Fund Requirements	Input Data	0.000	0.000	0.000	0.000	0.000	0.000
Short Term Debt	STDEBT	0.000	464,915,000,000	575,780,000,000	447,745,000,000	829,811,000,000	457,927,000,000
EPS excluding extra	EPSAPPCOMM	4.890	4.350	5.430	3.600	3.380	3.090
Price - High	Bloomberg	120.570	114.650	94.770	88.690	81.320	58.810
Price - Low	Bloomberg	80.500	89.330	78.030	68.960	57.820	47.350
DPS by payable date	Bloomberg	2.300	2.100	1.940	1.800	1.680	1.560
AFUDC	AFUDC	31,929,000,000	18,808,000,000	6,800,000,000	2,500,000,000	2,800,000,000	0.000
Total Interest	INTEXP	84,474,000,000	103,153,000,000	106,646,000,000	120,182,000,000	115,948,000,000	116,241,000,000
Net Income before Extra.	NETINC	601,443,000,000	511,406,000,000	603,064,000,000	396,421,000,000	350,104,000,000	315,075,000,000
CE Income before Extra.	INCAVALCOMM	601,443,000,000	511,406,000,000	603,064,000,000	396,421,000,000	350,104,000,000	315,075,000,000
Preferred Stock Dividends	PFDDIV	0.000	0.000	0.000	0.000	0.000	0.000
Common Dividends	COMDIVS1	282,444,000,000	245,717,000,000	214,906,000,000	191,931,000,000	175,126,000,000	160,018,000,000
Income Bef Extra Items-S&U	INCBEFEXT	601,443,000,000	511,406,000,000	603,064,000,000	396,421,000,000	350,104,000,000	315,075,000,000
Net Operating Cash Flow	NETOPGFC	1,037,999,000,000	968,769,000,000	1,124,662,000,000	867,090,000,000	794,990,000,000	836,519,000,000
Change in op'a Assets + Liabilities	CHGOPASLIAB	-133,676,000,000	-76,656,000,000	134,863,000,000	-73,177,000,000	-63,212,000,000	-19,990,000,000
Depreciation & Amortization	DEPAMORT	429,628,000,000	391,456,000,000	361,053,000,000	319,448,000,000	293,096,000,000	274,796,000,000
Income Tax Expense	INCTAX	145,353,000,000	138,903,000,000	8,080,000,000	221,383,000,000	200,373,000,000	195,690,000,000
Calculations							
Com Eq / Shares Out.	calc	53.949	48.184	42.867	36.744	33.321	31.482
Total Permanent Capital	calc	11,322,982,165,000	9,279,675,000,000	7,838,616,000,000	6,965,711,000,000	5,901,838,000,000	5,650,185,000,000
Average Price	calc	100.535	101.990	86.400	78.825	69.570	53.080
Total Debt		4,531,779,165,000	3,994,367,000,000	3,644,445,000,000	3,514,790,000,000	3,268,590,000,000	2,913,315,000,000
Total Capital	calc	11,322,982,165,000	9,744,590,000,000	8,414,396,000,000	7,413,456,000,000	6,731,649,000,000	6,108,112,000,000
Preferred Slk + Sink Fund Req.	calc	0.000	0.000	0.000	0.000	0.000	0.000
NETOPGFC + CHGOPASLIAB - AFUDC	calc	872,394,000,000	873,275,000,000	1,252,723,000,000	791,413,000,000	728,978,000,000	816,529,000,000
EBITDA	calc	1,261,098,000,000	1,144,918,000,000	1,078,873,000,000	1,057,434,000,000	959,521,000,000	901,802,000,000

Atmos Energy
 CAPITALIZATION AND FINANCIAL STATISTICS (1)
 2014 - 2019, Inclusive

	2020	2019	2018	2017	2016
(MILLIONS OF DOLLARS)					
CAPITALIZATION STATISTICS					
AMOUNT OF CAPITAL EMPLOYED					
TOTAL PERMANENT CAPITAL	\$11,322,982	\$9,279,675	\$7,838,616	\$6,965,711	\$5,901,838
SHORT-TERM DEBT	\$0.000	\$464,915	\$575,780	\$447,745	\$829,811
TOTAL CAPITAL EMPLOYED	<u>\$11,322,982</u>	<u>\$9,744,590</u>	<u>\$8,414,396</u>	<u>\$7,413,456</u>	<u>\$6,731,649</u>
INDICATED AVERAGE CAPITAL COST RATES (2)					
TOTAL DEBT	1.98 %	2.70 %	2.98 %	3.54 %	3.75 %
PREFERRED STOCK					
CAPITAL STRUCTURE RATIOS					
BASED ON TOTAL PERMANENT CAPITAL:					
LONG-TERM DEBT	40.02 %	38.03 %	39.15 %	44.03 %	41.32 %
PREFERRED STOCK	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
COMMON EQUITY	59.98 %	61.97 %	60.85 %	55.97 %	58.68 %
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:					
TOTAL DEBT, INCLUDING SHORT-TERM	40.02 %	40.99 %	43.31 %	47.41 %	48.56 %
PREFERRED STOCK	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
COMMON EQUITY	59.98 %	59.01 %	56.69 %	52.59 %	51.44 %
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS					
FINANCIAL RATIOS - MARKET BASED					
EARNINGS / PRICE RATIO	4.86 %	4.27 %	6.28 %	4.57 %	4.86 %
MARKET / AVERAGE BOOK RATIO	196.87	224.03	217.06	225.01	214.71
DIVIDEND YIELD	2.29	2.06	2.25	2.28	2.41
DIVIDEND PAYOUT RATIO	48.96	48.05	35.64	48.42	50.02
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	9.59 %	9.72 %	13.91 %	10.77 %	10.52 %
TOTAL DEBT / EBITDA (3)	3.59 x	3.49 x	3.38 x	3.32 x	3.41 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	19.25 %	21.86 %	34.37 %	22.52 %	22.30 %
TOTAL DEBT / TOTAL CAPITAL	40.02 %	40.99 %	43.31 %	47.41 %	48.56 %

5 YEAR AVERAGE

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New Jersey Resources
 CAPITALIZATION AND FINANCIAL STATISTICS (1)
 2015 - 2020, Inclusive

	FYE: 09/30/2020	2020	2019	2018	2017	2016	2015
Capital Structure:							
Long Term Debt	LTDEBT	2,286,702,000.00	1,558,596,000.00	1,304,164,000.00	1,162,455,000.00	1,125,002,000.00	854,733,000.00
Preferred Stock	PPD	0.00	0.00	0.00	0.00	0.00	0.00
Common Shares Outst.	Input Data	95,949,183.00	89,338,054.00	86,107,943.00	86,555,507.00	86,086,355.00	85,531,423.00
Common Equity	TOTEQ	1,844,692,000.00	1,551,717,000.00	1,418,978,000.00	1,236,643,000.00	1,166,591,000.00	1,106,956,000.00
Sinking Fund Requirements	Input Data	0.00	0.00	0.00	0.00	0.00	0.00
Short Term Debt	STDEBT	125,350,000.00	25,450,000.00	151,950,000.00	266,000,000.00	121,700,000.00	66,350,000.00
EPS excluding extra	EPSAPPCOMM	2.040	1.890	2.640	1.520	1.520	2.100
Price - High	Bloomberg	45.460	51.130	47.550	44.250	38.710	33.475
Price - Low	Bloomberg	24.610	43.820	36.250	31.070	28.140	24.805
DPS by payable date	Bloomberg	1.270	1.190	1.110	1.038	0.975	0.915
AFUDC	AFUDC	19,733,000.000	10,202,000.000	7,510,000.000	5,178,000.000	9,384,000.000	6,297,000.000
Total Interest	INTEXP	67,597,000.000	47,082,000.000	46,286,000.000	44,886,000.000	31,044,000.000	27,721,000.000
Net Income before Extra.	NETINC	193,919,000.000	169,505,000.000	233,436,000.000	132,065,000.000	131,672,000.000	180,960,000.000
CE Income before Extra.	INCAVAILCOMM	193,919,000.000	169,505,000.000	233,436,000.000	132,065,000.000	131,672,000.000	180,960,000.000
Preferred Stock Dividends	PFDDIV	0.000	0.000	0.000	0.000	0.000	0.000
Common Dividends	COMDIVS1	117,804,000.000	104,059,000.000	95,835,000.000	87,988,000.000	82,445,000.000	76,532,000.000
Income Bef Extra Items-S&U	INCBEFEXT	193,919,000.000	169,505,000.000	233,436,000.000	132,065,000.000	131,672,000.000	180,960,000.000
Net Operating Cash Flow	NETOPGFC	213,481,000.000	189,350,000.000	398,286,000.000	248,046,000.000	142,630,000.000	387,920,000.000
Change in op'g Assets + Liabilities	CHGOPASLIAB	-8,096,000.000	-27,759,000.000	97,004,000.000	17,081,000.000	-123,325,000.000	76,753,000.000
Depreciation & Amortization	DEPAMORT	119,894,000.000	91,730,000.000	85,701,000.000	81,841,000.000	72,748,000.000	61,399,000.000
Income Tax Expense	INCTAX	-6,944,000.000	-37,751,000.000	-53,785,000.000	18,343,000.000	23,530,000.000	59,724,000.000
Calculations							
Com Eq / Shares Out.	calc	19.226	17.369	16.479	14.287	13.551	12.942
Total Permanent Capital	calc	4,131,394,000.000	3,110,313,000.000	2,723,142,000.000	2,399,098,000.000	2,291,593,000.000	1,961,689,000.000
Average Price	calc	35.035	47.475	41.900	37.660	33.425	29.140
Total Debt	calc	2,412,052,000.000	1,584,046,000.000	1,456,114,000.000	1,428,455,000.000	1,246,702,000.000	921,083,000.000
Total Capital	calc	4,256,744,000.000	3,135,763,000.000	2,875,092,000.000	2,665,098,000.000	2,413,293,000.000	2,028,039,000.000
Preferred Stk + Sink Fund Req.	calc	0.000	0.000	0.000	0.000	0.000	0.000
NETOPGFC + CHGOPASLIAB - AFUDC	calc	185,652,000.000	151,389,000.000	487,780,000.000	259,949,000.000	9,921,000.000	458,376,000.000
EBITDA	calc	374,466,000.000	270,566,000.000	311,638,000.000	277,135,000.000	258,994,000.000	329,804,000.000

New Jersey Resources
 CAPITALIZATION AND FINANCIAL STATISTICS (1)
 2015 - 2020, Inclusive

	2020	2019	2018	2017	2016
(MILLIONS OF DOLLARS)					
CAPITALIZATION STATISTICS					
AMOUNT OF CAPITAL EMPLOYED					
TOTAL PERMANENT CAPITAL	\$4,131,394	\$3,110,313	\$2,723,142	\$2,399,098	\$2,291,593
SHORT-TERM DEBT	\$125,350	\$25,450	\$151,950	\$266,000	\$121,700
TOTAL CAPITAL EMPLOYED	<u>\$4,256,744</u>	<u>\$3,135,763</u>	<u>\$2,875,092</u>	<u>\$2,665,098</u>	<u>\$2,413,293</u>
INDICATED AVERAGE CAPITAL COST RATES (2)					
TOTAL DEBT	3.38 %	3.10 %	3.21 %	3.36 %	2.86 %
PREFERRED STOCK					
CAPITAL STRUCTURE RATIOS					
BASED ON TOTAL PERMANENT CAPITAL:					
LONG-TERM DEBT	55.35 %	50.11 %	47.89 %	48.45 %	49.09 %
PREFERRED STOCK	0.00	0.00	0.00	0.00	0.00
COMMON EQUITY	44.65	49.89	52.11	51.55	50.91
TOTAL	<u>100.00</u> %	<u>100.00</u> %	<u>100.00</u> %	<u>100.00</u> %	<u>100.00</u> %
BASED ON TOTAL CAPITAL:					
TOTAL DEBT, INCLUDING SHORT-TERM	56.66 %	50.52 %	50.65 %	53.60 %	51.66 %
PREFERRED STOCK	0.00	0.00	0.00	0.00	0.00
COMMON EQUITY	43.34	49.48	49.35	46.40	48.34
TOTAL	<u>100.00</u> %	<u>100.00</u> %	<u>100.00</u> %	<u>100.00</u> %	<u>100.00</u> %
5-YEAR AVERAGE					
LONG-TERM DEBT	55.35 %	50.11 %	47.89 %	48.45 %	49.09 %
PREFERRED STOCK	0.00	0.00	0.00	0.00	0.00
COMMON EQUITY	44.65	49.89	52.11	51.55	50.91
TOTAL	<u>100.00</u> %	<u>100.00</u> %	<u>100.00</u> %	<u>100.00</u> %	<u>100.00</u> %
FINANCIAL STATISTICS					
FINANCIAL RATIOS - MARKET BASED					
EARNINGS / PRICE RATIO	5.82 %	3.98 %	6.30 %	4.04 %	4.55 %
MARKET / AVERAGE BOOK RATIO	191.48	280.52	272.38	270.56	252.33
DIVIDEND YIELD	3.62	2.51	2.65	2.75	2.92
DIVIDEND PAYOUT RATIO	60.75	61.39	41.05	66.62	62.61
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	11.42 %	11.41 %	17.58 %	10.99 %	11.58 %
TOTAL DEBT / EBITDA (3)	6.44 x	5.85 x	4.67 x	5.15 x	4.81 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	7.70 %	9.56 %	33.50 %	18.20 %	0.80 %
TOTAL DEBT / TOTAL CAPITAL	56.66 %	50.52 %	50.65 %	53.60 %	51.66 %

Ticker
NWN

		Northwest Nat. Gas CAPITALIZATION AND FINANCIAL STATISTICS (1) 2015 - 2020, Inclusive					
	FYE: 12/31/2020	2020	2019	2018	2017	2016	2015
Capital Structure:							
Long Term Debt	LTDEBT	955,425,000,000	881,064,000,000	736,236,000,000	779,887,000,000	719,323,000,000	601,700,000,000
Preferred Stock	FPD	0.000	0.000	0.000	0.000	0.000	0.000
Common Shares Outst.	Input Data	30,589,000,000	30,472,000,000	28,880,000,000	28,736,000,000	28,630,000,000	27,427,000,000
Common Equity	TOTEQ	888,733,000,000	865,999,000,000	762,634,000,000	742,776,000,000	850,497,000,000	780,972,000,000
Sinking Fund Requirements	Input Data	0.000	0.000	0.000	0.000	0.000	0.000
Short Term Debt	STDEBT	304,525,000,000	149,100,000,000	217,620,000,000	54,200,000,000	53,300,000,000	270,035,000,000
EPS excluding extra	EPSAPPCOMM	2.510	2.070	2.240	-1.940	2.120	1.960
Price - High	Bloomberg	76.900	73.860	70.710	69.150	65.600	51.980
Price - Low	Bloomberg	43.410	57.460	51.950	56.850	49.440	42.180
DPS by payable date	Bloomberg	1.910	1.900	1.890	1.883	1.873	1.863
AFUDC	AFUDC	0.000	700,000,000	4,100,000,000	5,298,000,000	0.000	0.000
Total Interest	INTEXP	43,052,000,000	42,685,000,000	37,059,000,000	38,501,000,000	39,128,000,000	42,539,000,000
Net Income before Extra.	NETINC	76,781,000,000	61,735,000,000	64,569,000,000	-55,623,000,000	58,895,000,000	53,703,000,000
CE Income before Extra.	INCAVAILCOMM	76,781,000,000	61,735,000,000	64,569,000,000	-55,623,000,000	58,895,000,000	53,703,000,000
Preferred Stock Dividends	FPDDIV	0.000	0.000	0.000	0.000	0.000	0.000
Common Dividends	COMDIVS1	58,708,000,000	56,833,000,000	54,736,000,000	53,957,000,000	51,508,000,000	49,243,000,000
Income Bef Extra Items-S&U	INCBEFEXT	76,781,000,000	61,735,000,000	64,569,000,000	-55,623,000,000	58,895,000,000	53,703,000,000
Net Operating Cash Flow	NETOPGFC	143,020,000,000	185,298,000,000	168,771,000,000	206,704,000,000	222,147,000,000	184,688,000,000
Change in op'g Assets + Liabilities	CHGOPASLIAB	-24,567,000,000	-35,408,000,000	-10,041,000,000	30,696,000,000	33,237,000,000	-7,190,000,000
Depreciation & Amortization	DEPAMORT	103,683,000,000	91,496,000,000	85,156,000,000	85,578,000,000	82,289,000,000	80,923,000,000
Income Tax Expense	INCTAX	21,082,000,000	12,642,000,000	24,191,000,000	-30,757,000,000	40,714,000,000	35,753,000,000
Calculations							
Com Eq / Shares Out.	calc	29.054	28.419	26.407	25.848	29.706	28.475
Total Permanent Capital	calc	1,844,158,000,000	1,747,063,000,000	1,498,870,000,000	1,522,663,000,000	1,569,820,000,000	1,382,672,000,000
Average Price	calc	60.155	65.660	61.330	63.000	57.520	47.080
Total Debt	calc	1,259,950,000,000	1,030,164,000,000	953,856,000,000	834,087,000,000	772,623,000,000	871,735,000,000
Total Capital	calc	2,148,683,000,000	1,896,163,000,000	1,716,490,000,000	1,576,863,000,000	1,623,120,000,000	1,652,707,000,000
Preferred Stk + Sink Fund Req.	calc	0.000	0.000	0.000	0.000	0.000	0.000
NETOPGFC + CHGOPASLIAB - AFUDC	calc	118,453,000,000	149,190,000,000	154,630,000,000	232,102,000,000	255,384,000,000	177,498,000,000
EBITDA	calc	244,598,000,000	208,558,000,000	210,975,000,000	37,699,000,000	221,026,000,000	212,918,000,000

		Northwest Nat. Gas CAPITALIZATION AND FINANCIAL STATISTICS (1) 2015 - 2020, Inclusive				
		2020	2019	2018	2017	2016
		(MILLIONS OF DOLLARS)				
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL		\$1,844,158	\$1,747,063	\$1,498,870	\$1,522,663	\$1,569,820
SHORT-TERM DEBT		\$304,525	\$149,100	\$217,620	\$54,200	\$53,300
TOTAL CAPITAL EMPLOYED		<u>\$2,148,683</u>	<u>\$1,896,163</u>	<u>\$1,716,490</u>	<u>\$1,576,863</u>	<u>\$1,623,120</u>
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT		3.76 %	4.30 %	4.15 %	4.79 %	4.76 %
PREFERRED STOCK						
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT		51.81 %	50.43 %	49.12 %	51.22 %	49.68 %
PREFERRED STOCK		0.00	0.00	0.00	0.00	0.00
COMMON EQUITY		48.19	49.57	50.88	48.78	50.32
TOTAL		<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM		58.64 %	54.33 %	55.57 %	52.90 %	47.60 %
PREFERRED STOCK		0.00	0.00	0.00	0.00	0.00
COMMON EQUITY		41.36	45.67	44.43	47.10	52.40
TOTAL		<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO		4.17 %	3.15 %	3.65 %	-3.08 %	3.69 %
MARKET / AVERAGE BOOK RATIO		209.33	239.52	234.73	226.80	197.73
DIVIDEND YIELD		3.18	2.89	3.08	2.99	3.26
DIVIDEND PAYOUT RATIO		76.46	92.06	84.77	-97.00	87.46
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY		8.75 %	7.58 %	8.58 %	-6.98 %	7.22 %
TOTAL DEBT / EBITDA (3)		5.15 x	4.94 x	4.52 x	22.12 x	3.50 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)		9.40 %	14.48 %	16.21 %	27.83 %	33.05 %
TOTAL DEBT / TOTAL CAPITAL		58.64 %	54.33 %	55.57 %	52.90 %	47.60 %

5 YEAR
AVERAGE

Ticker
OSS

		ONE Gas, Inc. CAPITALIZATION AND FINANCIAL STATISTICS (1) 2015 - 2020, Inclusive					
	FYE: 12/31/2020	2020	2019	2018	2017	2016	2015
Capital Structure:							
Long Term Debt	LTDEBT	1,601,300,000.000	1,286,064,000.000	1,285,483,000.000	1,193,257,000.000	1,192,453,000.000	1,201,312,000.000
Preferred Stock	PFDD	0.000	0.000	0.000	0.000	0.000	0.000
Common Shares Outst.	Input Data	53,166,733.000	52,771,749.000	52,564,902.000	52,312,516.000	52,598,005.000	52,259,224.000
Common Equity	TOTEQ	2,233,311,000.000	2,129,990,000.000	2,042,656,000.000	1,960,209,000.000	1,888,280,000.000	1,841,555,000.000
Sinking Fund Requirements	Input Data	0.000	0.000	0.000	0.000	0.000	0.000
Short Term Debt	STDEBT	418,225,000.000	516,500,000.000	299,500,000.000	357,215,000.000	145,000,000.000	12,500,000.000
EPS excluding extra	EPSAPPCOMM	3.680	3.510	3.250	3.080	2.650	2.240
Price - High	Bloomberg	96.690	96.270	87.030	79.250	66.590	51.340
Price - Low	Bloomberg	66.550	76.130	62.750	62.300	48.400	39.380
DPS by payable date	Bloomberg	2.160	2.000	1.840	1.680	1.400	1.200
AFUDC	AFUDC	4,200,000.000	4,600,000.000	3,400,000.000	3,000,000.000	3,600,000.000	2,600,000.000
Total Interest	INTEXP	62,505,000.000	62,681,000.000	51,305,000.000	46,065,000.000	43,738,000.000	44,570,000.000
Net Income before Extra.	NETINC	196,412,000.000	186,749,000.000	172,234,000.000	162,995,000.000	140,095,000.000	119,030,000.000
CE Income before Extra.	INCAVAILCOMM	196,412,000.000	186,749,000.000	172,234,000.000	162,995,000.000	140,095,000.000	119,030,000.000
Preferred Stock Dividends	PFDDIV	0.000	0.000	0.000	0.000	0.000	0.000
Common Dividends	COMDIVS1	114,372,000.000	105,424,000.000	96,594,000.000	87,951,000.000	73,209,000.000	62,828,000.000
Income Bef Extra Items-S&U	INCBEFEXT	196,412,000.000	186,749,000.000	172,234,000.000	162,995,000.000	140,095,000.000	119,030,000.000
Net Operating Cash Flow	NETOPGFC	364,500,000.000	310,345,000.000	467,694,000.000	253,800,000.000	281,567,000.000	394,207,000.000
Change in oply Assets + Liabilities	CHGCPASLIAB	-70,531,000.000	-88,414,000.000	65,431,000.000	-18,198,000.000	-30,653,000.000	41,327,000.000
Depreciation & Amortization	DEPAMORT	194,881,000.000	180,395,000.000	160,086,000.000	151,889,000.000	143,829,000.000	133,023,000.000
Income Tax Expense	INCTAX	41,579,000.000	42,852,000.000	53,531,000.000	93,143,000.000	85,243,000.000	72,979,000.000
Calculations							
Com Eq / Shares Out.	calc	42.008	40.351	38.860	37.471	35.900	35.239
Total Permanent Capital	calc	3,834,611,000.000	3,415,454,000.000	3,328,139,000.000	3,153,466,000.000	3,080,733,000.000	3,042,867,000.000
Average Price	calc	81.620	86.200	74.890	70.775	57.495	45.360
Total Debt		2,019,525,000.000	1,802,564,000.000	1,584,983,000.000	1,550,472,000.000	1,337,453,000.000	1,213,812,000.000
Total Capital	calc	4,252,836,000.000	3,931,954,000.000	3,627,639,000.000	3,510,681,000.000	3,225,733,000.000	3,055,367,000.000
Preferred Stk + Sink Fund Req.	calc	0.000	0.000	0.000	0.000	0.000	0.000
NETOPGFC + CHGCPASLIAB - AFUDC	calc	289,769,000.000	217,331,000.000	529,725,000.000	232,692,000.000	247,314,000.000	432,934,000.000
EBITDA	calc	495,377,000.000	472,677,000.000	437,156,000.000	454,092,000.000	412,906,000.000	369,602,000.000

		ONE Gas, Inc. CAPITALIZATION AND FINANCIAL STATISTICS (1) 2015 - 2020, Inclusive				
		2020	2019	2018	2017	2016
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL		\$3,834,611	\$3,415,454	\$3,328,139	\$3,153,466	\$3,080,733
TOTAL SHORT-TERM DEBT		\$418,225	\$516,500	\$299,500	\$357,215	\$145,000
TOTAL CAPITAL EMPLOYED		<u>\$4,252,836</u>	<u>\$3,931,954</u>	<u>\$3,627,639</u>	<u>\$3,510,681</u>	<u>\$3,225,733</u>
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT		3.27 %	3.70 %	3.27 %	3.19 %	3.43 %
PREFERRED STOCK						
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT		41.76 %	37.65 %	38.62 %	37.84 %	38.71 %
PREFERRED STOCK		0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
COMMON EQUITY		58.24 %	62.35 %	61.38 %	62.16 %	61.29 %
TOTAL		<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM		47.49 %	45.84 %	43.69 %	44.16 %	44.16 %
PREFERRED STOCK		0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
COMMON EQUITY		52.51 %	54.16 %	56.31 %	55.84 %	55.84 %
TOTAL		<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO		4.51 %	4.07 %	4.34 %	4.35 %	4.61 %
MARKET / AVERAGE BOOK RATIO		198.21	217.65	196.22	192.92	161.64
DIVIDEND YIELD		2.65	2.32	2.46	2.37	2.43
DIVIDEND PAYOUT RATIO		58.23	56.45	56.08	53.96	52.26
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY		9.00 %	8.95 %	8.61 %	8.47 %	7.51 %
TOTAL DEBT / EBITDA (3)		4.08 x	3.81 x	3.63 x	3.41 x	3.24 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)		14.35 %	12.06 %	33.42 %	15.01 %	18.49 %
TOTAL DEBT / TOTAL CAPITAL		47.49 %	45.84 %	43.69 %	44.16 %	44.16 %

5 YEAR AVERAGE

Ticker
SJI

South Jersey Industries, Inc.
 CAPITALIZATION AND FINANCIAL STATISTICS (1)
 2015 - 2020, Inclusive

South Jersey Industries, Inc.
 CAPITALIZATION AND FINANCIAL STATISTICS (1)
 2015 - 2020, Inclusive

	FYE: 12/31/2020	2020	2019	2018	2017	2016	2015
Capital Structure:							
Long Term Debt	LTDEBT	2,919,201,000.000	2,537,995,000.000	2,840,772,000.000	1,186,808,000.000	1,039,914,000.000	1,035,848,000.000
Preferred Stock	PPFD	0.000	0.000	0.000	0.000	0.000	0.000
Common Shares Outst.	Input Data	100,591,940.000	92,394,155.000	85,506,218.000	79,549,080.000	79,478,055.000	70,965,622.000
Common Equity	TOTEQ	1,666,876,000.000	1,423,785,000.000	1,267,022,000.000	1,192,409,000.000	1,289,240,000.000	1,037,539,000.000
Sinking Fund Requirements	Input Data	0.000	0.000	0.000	0.000	0.000	0.000
Short Term Debt	STDEBT	596,400,000.000	848,700,000.000	270,500,000.000	346,400,000.000	296,100,000.000	431,700,000.000
EPS excluding extra	EPSAPPCOMM	1.620	0.840	0.210	-0.040	1.590	1.520
Price - High	Yahoo	33.210	34.270	36.130	38.120	34.680	30.295
Price - Low	Yahoo	18.480	26.890	26.110	30.780	22.630	21.370
DPS by payable date	Yahoo	1.190	1.160	1.130	1.100	1.070	1.018
AFUDC	AFUDC	1,901,000.000	1,546,000.000	1,835,000.000	3,094,000.000	7,500,000.000	1,109,000.000
Total Interest	INTEXP	118,534,000.000	114,477,000.000	90,296,000.000	54,019,000.000	31,449,000.000	31,622,000.000
Net Income before Extra.	NETINC	157,042,000.000	76,917,000.000	17,663,000.000	-3,404,000.000	119,061,000.000	105,107,000.000
CE Income before Extra.	INCAVAILCOMM	157,084,000.000	76,917,000.000	17,663,000.000	-3,404,000.000	119,061,000.000	105,107,000.000
Preferred Stock Dividends	PFDDIV	0.000	0.000	0.000	0.000	0.000	0.000
Common Dividends	COMDIVS1	114,643,000.000	106,938,000.000	94,756,000.000	87,308,000.000	82,380,000.000	70,158,000.000
Income Bef Extra Items-S&U	INCBEFEXT	157,042,000.000	76,917,000.000	17,663,000.000	-3,404,000.000	119,061,000.000	105,610,000.000
Net Operating Cash Flow	NETOPGFC	311,639,000.000	121,052,000.000	143,583,000.000	190,321,000.000	262,240,000.000	186,794,000.000
Change in op/g Assets + Liabilities	CHGOPASLIAB	-16,175,000.000	-91,396,000.000	291,000.000	35,102,000.000	60,492,000.000	10,893,000.000
Depreciation & Amortization	DEPAMORT	170,647,000.000	133,385,000.000	132,914,000.000	109,816,000.000	91,042,000.000	91,042,000.000
Income Tax Expense	INCTAX	22,664,000.000	21,061,000.000	561,000.000	-24,937,000.000	54,151,000.000	1,360,000.000
Calculations							
Com Eq / Shares Out.	calc	16.571	15.410	14.818	14.990	16.221	14.620
Total Permanent Capital	calc	4,586,077,000.000	3,961,780,000.000	4,107,794,000.000	2,379,217,000.000	2,329,154,000.000	2,073,387,000.000
Average Price	calc	25.845	30.580	31.120	34.450	28.655	25.833
Total Debt		3,515,601,000.000	3,386,695,000.000	3,111,272,000.000	1,533,208,000.000	1,336,014,000.000	1,467,548,000.000
Total Capital	calc	5,182,477,000.000	4,810,480,000.000	4,378,294,000.000	2,725,617,000.000	2,625,254,000.000	2,505,087,000.000
Preferred Stk + Sink Fund Req.	calc	0.000	0.000	0.000	0.000	0.000	0.000
NETOPGFC + CHGOPASLIAB - AFUDC	calc	293,563,000.000	28,110,000.000	142,029,000.000	222,329,000.000	315,232,000.000	196,578,000.000
EBITDA	calc	468,887,000.000	345,840,000.000	241,434,000.000	135,496,000.000	295,703,000.000	229,634,000.000

CAPITALIZATION STATISTICS

AMOUNT OF CAPITAL EMPLOYED
 TOTAL PERMANENT CAPITAL
 SHORT-TERM DEBT
 TOTAL CAPITAL EMPLOYED

INDICATED AVERAGE CAPITAL COST RATES (2)
 TOTAL DEBT
 PREFERRED STOCK

CAPITAL STRUCTURE RATIOS
 BASED ON TOTAL PERMANENT CAPITAL:
 LONG-TERM DEBT
 PREFERRED STOCK
 COMMON EQUITY
 TOTAL

BASED ON TOTAL CAPITAL:
 TOTAL DEBT, INCLUDING SHORT-TERM
 PREFERRED STOCK
 COMMON EQUITY
 TOTAL

FINANCIAL STATISTICS

FINANCIAL RATIOS - MARKET BASED
 EARNINGS / PRICE RATIO
 MARKET / AVERAGE BOOK RATIO
 DIVIDEND YIELD
 DIVIDEND PAYOUT RATIO

RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY

TOTAL DEBT / EBITDA (3)

FUNDS FROM OPERATIONS / TOTAL DEBT (4)

TOTAL DEBT / TOTAL CAPITAL

2020 2019 2018 2017 2016
 (MILLIONS OF DOLLARS)

\$4,586,077 \$3,961,780 \$4,107,794 \$2,379,217 \$2,329,154
 \$596,400 \$848,700 \$270,500 \$346,400 \$296,100
 \$5,182,477 \$4,810,480 \$4,378,294 \$2,725,617 \$2,625,254

3.43 % 3.52 % 3.89 % 3.77 % 2.24 %

63.65 % 64.06 % 69.16 % 49.88 % 44.65 % 58.28 %
 0.00 0.00 0.00 0.00 0.00 0.00
 36.35 35.94 30.84 50.12 55.35 41.72
 100.00 % 100.00 % 100.00 % 100.00 % 100.00 % 100.00 %

67.84 % 70.40 % 71.06 % 56.25 % 50.89 % 63.29 %
 0.00 0.00 0.00 0.00 0.00 0.00
 32.16 29.60 28.94 43.75 49.11 36.71
 100.00 % 100.00 % 100.00 % 100.00 % 100.00 % 100.00 %

6.27 % 2.75 % 0.67 % -0.12 % 5.44 % 3.00 %
 161.63 202.33 208.81 220.76 185.82 195.87
 4.60 3.79 3.63 3.19 3.73 3.79
 72.98 139.03 536.47 NA 69.19 204.42

10.17 % 5.72 % 1.44 % -0.27 % 10.23 % 5.46 %

7.50 x 9.79 x 12.89 x 11.32 x 4.52 x 9.20 x

8.35 % 0.83 % 4.56 % 14.50 % 23.59 % 10.37 %

67.84 % 70.40 % 71.06 % 56.25 % 50.89 % 63.29 %

5 YEAR
 AVERAGE

Ticker
SWX

		Southwest Gas CAPITALIZATION AND FINANCIAL STATISTICS (1) 2015 - 2020, Inclusive					
	FYE: 12/31/2020	2020	2019	2018	2017	2016	2015
Capital Structure:							
Long Term Debt	LTDEBT	2,772,633,000.00	2,463,994,000.00	2,140,318,000.00	1,773,230,000.00	1,600,084,000.00	1,570,679,000.00
Preferred Stock	FPD	0.00	0.00	0.00	0.00	0.00	0.00
Common Shares Outst.	Input Data	57,192,925.00	55,007,433.00	53,026,848.00	48,090,470.00	47,482,068.00	47,377,575.00
Common Equity	TOTEQ	2,674,953,000.00	2,505,914,000.00	2,251,590,000.00	1,812,403,000.00	1,661,273,000.00	1,594,408,000.00
Sinking Fund Requirements	Input Data	0.00	0.00	0.00	0.00	0.00	0.00
Short Term Debt	STDEBT	107,000,000.00	211,000,000.00	152,000,000.00	214,500,000.00	0.00	18,000,000.00
EPS excluding extra	EPSAPPCOMM	4.140	3.940	3.690	4.040	3.180	2.920
Price - High	Bloomberg	79.950	92.140	84.770	86.270	78.830	63.380
Price - Low	Bloomberg	52.270	73.920	64.140	72.830	53.860	50.780
DPS by payable date	Bloomberg	2.280	2.180	2.080	2.100	1.800	1.620
AFUDC	AFUDC	7,926,000.000	8,719,000.000	6,891,000.000	3,962,000.000	3,464,000.000	3,008,000.000
Total Interest	INTEXP	111,477,000.000	109,226,000.000	96,671,000.000	78,064,000.000	73,660,000.000	71,879,000.000
Net Income before Extra.	NETINC	238,985,000.000	216,647,000.000	181,652,000.000	193,942,000.000	153,055,000.000	138,317,000.000
CE Income before Extra.	INCAVAILCOMM	238,985,000.000	216,647,000.000	182,277,000.000	193,481,000.000	152,041,000.000	138,317,000.000
Preferred Stock Dividends	PFDDIV	0.000	0.000	0.000	0.000	0.000	99,000.000
Common Dividends	COMDIVS1	125,504,000.00	116,127,000.00	100,240,000.00	92,130,000.00	83,317,000.00	74,248,000.00
Income Bef Extra Items-S&U	INCBEFEXT	238,985,000.000	216,647,000.000	182,277,000.000	193,481,000.000	152,041,000.000	138,317,000.000
Net Operating Cash Flow	NETOPGFC	626,080,000.000	500,372,000.000	528,856,000.000	369,955,000.000	598,389,000.000	547,147,000.000
Change in opg Assets + Liabilities	CHGOPASLIAB	99,071,000.000	-37,121,000.000	13,462,000.000	-124,885,000.000	52,938,000.000	-86,821,000.000
Depreciation & Amortization	DEFAIMORT	332,027,000.000	303,237,000.000	249,212,000.000	250,951,000.000	289,132,000.000	270,111,000.000
Income Tax Expense	INCTAX	65,753,000.000	56,023,000.000	61,684,000.000	65,088,000.000	78,468,000.000	79,902,000.000
Calculations							
Com Eq / Shares Out.	calc	46.771	45.556	42.461	37.687	34.987	33.653
Total Permanent Capital	calc	5,447,586,000.000	4,969,908,000.000	4,391,908,000.000	3,585,633,000.000	3,261,357,000.000	3,165,087,000.000
Average Price	calc	66.110	83.030	74.455	79.550	66.345	57.080
Total Debt	calc	2,879,633,000.000	2,674,994,000.000	2,292,318,000.000	1,987,730,000.000	1,600,084,000.000	1,588,679,000.000
Total Capital	calc	5,554,586,000.000	5,180,908,000.000	4,543,908,000.000	3,800,133,000.000	3,261,357,000.000	3,183,087,000.000
Preferred Stk + Sink Fund Req.	calc	0.000	0.000	0.000	0.000	0.000	0.000
NETOPGFC + CHGOPASLIAB - AFUDC	calc	717,225,000.000	454,532,000.000	535,427,000.000	241,308,000.000	687,863,000.000	455,318,000.000
EBITDA	calc	748,242,000.000	685,133,000.000	589,844,000.000	587,584,000.000	593,301,000.000	560,209,000.000

		Southwest Gas CAPITALIZATION AND FINANCIAL STATISTICS (1) 2015 - 2020, Inclusive				
		2020	2019	2018	2017	2016
CAPITALIZATION STATISTICS (MILLIONS OF DOLLARS)						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL		\$5,447,586	\$4,969,908	\$4,391,908	\$3,585,633	\$3,261,357
SHORT-TERM DEBT		\$107,000	\$211,000	\$152,000	\$214,500	\$0,000
TOTAL CAPITAL EMPLOYED		<u>\$5,554,586</u>	<u>\$5,180,908</u>	<u>\$4,543,908</u>	<u>\$3,800,133</u>	<u>\$3,261,357</u>
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT		4.01 %	4.40 %	4.52 %	4.35 %	4.62 %
PREFERRED STOCK						
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT		50.90 %	49.58 %	48.73 %	49.45 %	49.06 %
PREFERRED STOCK		0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
COMMON EQUITY		49.10 %	50.42 %	51.27 %	50.55 %	50.94 %
TOTAL		<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM		51.84 %	51.63 %	50.45 %	52.31 %	49.06 %
PREFERRED STOCK		0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
COMMON EQUITY		48.16 %	48.37 %	49.55 %	47.69 %	50.94 %
TOTAL		<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO		6.26 %	4.75 %	4.94 %	5.08 %	4.79 %
MARKET / AVERAGE BOOK RATIO		143.21	188.67	185.79	218.92	193.31
DIVIDEND YIELD		3.45	2.63	2.79	2.64	2.71
DIVIDEND PAYOUT RATIO		52.52	53.60	54.99	47.62	54.80
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY						
TOTAL DEBT / EBITDA (3)		3.85 x	3.90 x	3.89 x	3.38 x	2.70 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)		24.91 %	16.99 %	23.36 %	12.14 %	42.99 %
TOTAL DEBT / TOTAL CAPITAL		51.84 %	51.63 %	50.45 %	52.31 %	49.06 %

5 YEAR
AVERAGE

Ticker
SR

		Spire Inc. CAPITALIZATION AND FINANCIAL STATISTICS (1) 2015 - 2020, Inclusive					
	FYE: 9/30/2020	2020	2019	2018	2017	2016	2015
Capital Structure:							
Long Term Debt	LTDEBT	2,484,100,000.000	2,122,600,000.000	1,917,600,000.000	2,095,000,000.000	2,083,700,000.000	1,851,500,000.000
Preferred Stock	FPD	242,000,000.000	242,000,000.000	0.000	0.000	0.000	0.000
Common Shares Outst.	Input Data	51,611,789.000	50,973,515.000	50,671,903.000	48,263,243.000	45,650,642.000	43,335,012.000
Common Equity	TOTEQ	2,280,300,000.000	2,301,000,000.000	2,255,400,000.000	1,991,300,000.000	1,768,200,000.000	1,573,600,000.000
Sinking Fund Requirements	Input Data	0.000	0.000	0.000	0.000	0.000	0.000
Short Term Debt	STDEBT	648,000,000.000	743,200,000.000	553,600,000.000	477,300,000.000	398,700,000.000	338,000,000.000
EPS excluding extra	EPSAPPCOMM	1.440	3.520	4.330	3.430	3.240	3.180
Price - High	Bloomberg	87.600	87.240	82.250	77.400	70.840	56.000
Price - Low	Bloomberg	51.520	71.150	61.300	59.970	54.580	46.150
DPS by payable date	Bloomberg	2.490	2.370	2.250	2.100	1.960	1.840
AFUDC	AFUDC	0.000	0.000	0.000	0.000	0.000	0.000
Total Interest	INTEXP	105,500,000.000	104,400,000.000	98,400,000.000	89,100,000.000	77,200,000.000	74,600,000.000
Net Income before Extra.	NETINC	88,600,000.000	184,600,000.000	214,200,000.000	161,600,000.000	144,200,000.000	136,900,000.000
CE Income before Extra.	INCAVAILCOMM	73,700,000.000	178,900,000.000	213,700,000.000	161,600,000.000	144,200,000.000	136,900,000.000
Preferred Stock Dividends	PFDDIV	14,800,000.000	3,400,000.000	0.000	0.000	0.000	0.000
Common Dividends	COMDIVS1	128,000,000.000	119,000,000.000	112,100,000.000	96,200,000.000	85,200,000.000	79,000,000.000
Income Bef Extra Items-S&U	INCBEFEXT	88,600,000.000	184,600,000.000	214,200,000.000	161,600,000.000	144,200,000.000	136,900,000.000
Net Operating Cash Flow	NETOPGFC	469,900,000.000	450,900,000.000	456,600,000.000	288,300,000.000	328,300,000.000	322,400,000.000
Change in opig Assets + Liabilities	CHGOPASLIAB	14,400,000.000	21,500,000.000	58,500,000.000	-104,400,000.000	-27,100,000.000	10,800,000.000
Depreciation & Amortization	DEFAmort	197,300,000.000	161,700,000.000	168,400,000.000	154,100,000.000	137,500,000.000	130,800,000.000
Income Tax Expense	INCTAX	12,400,000.000	34,500,000.000	-26,500,000.000	77,600,000.000	69,500,000.000	62,200,000.000
Calculations							
Com Eq / Shares Out.	calc	44.182	45.141	44.510	41.259	38.733	36.312
Total Permanent Capital	calc	5,006,400,000.000	4,665,600,000.000	4,173,000,000.000	4,086,300,000.000	3,851,900,000.000	3,425,100,000.000
Average Price	calc	69.560	79.195	71.775	68.685	62.710	51.085
Total Debt	calc	3,132,100,000.000	2,865,800,000.000	2,471,200,000.000	2,572,300,000.000	2,482,400,000.000	2,189,500,000.000
Total Capital	calc	5,654,400,000.000	5,408,800,000.000	4,726,600,000.000	4,563,600,000.000	4,250,600,000.000	3,763,100,000.000
Preferred Stk + Sink Fund Req.	calc	242,000,000.000	242,000,000.000	0.000	0.000	0.000	0.000
NETOPGFC + CHGOPASLIAB - AFUDC	calc	484,300,000.000	472,700,000.000	515,100,000.000	183,900,000.000	301,200,000.000	333,200,000.000
EBITDA	calc	403,800,000.000	505,200,000.000	454,500,000.000	482,400,000.000	428,400,000.000	404,500,000.000

		Spire Inc. CAPITALIZATION AND FINANCIAL STATISTICS (1) 2015 - 2020, Inclusive				
		2020	2019	2018	2017	2016
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL		\$5,006,400	\$4,665,600	\$4,173,000	\$4,086,300	\$3,851,900
SHORT-TERM DEBT		\$648,000	\$743,200	\$553,600	\$477,300	\$398,700
TOTAL CAPITAL EMPLOYED		<u>\$5,654,400</u>	<u>\$5,408,800</u>	<u>\$4,726,600</u>	<u>\$4,563,600</u>	<u>\$4,250,600</u>
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT		3.52 %	3.91 %	3.90 %	3.53 %	3.30 %
PREFERRED STOCK		6.12	2.81			
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT		49.62 %	45.49 %	45.95 %	51.27 %	54.10 %
PREFERRED STOCK		4.83	5.19	0.00	0.00	2.00
COMMON EQUITY		45.55	49.32	54.05	48.73	45.90
TOTAL		<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM		55.39 %	52.98 %	52.28 %	56.37 %	58.40 %
PREFERRED STOCK		4.28	4.48	0.00	0.00	1.75
COMMON EQUITY		40.33	42.54	47.72	43.63	41.60
TOTAL		<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>	<u>100.00 %</u>
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO		2.07 %	4.44 %	6.03 %	4.99 %	5.17 %
MARKET / AVERAGE BOOK RATIO		155.75	176.67	167.37	171.73	167.73
DIVIDEND YIELD		3.58	2.99	3.13	3.06	3.13
DIVIDEND PAYOUT RATIO		173.68	66.52	52.46	59.53	59.08
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY		3.22 %	7.85 %	10.06 %	8.60 %	8.63 %
TOTAL DEBT / EBITDA (3)		7.76 x	5.67 x	5.44 x	5.33 x	5.79 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)		15.46 %	16.49 %	20.84 %	7.15 %	12.13 %
TOTAL DEBT / TOTAL CAPITAL		55.39 %	52.98 %	52.28 %	56.37 %	58.40 %

5 YEAR
AVERAGE

Duke Energy Kentucky
Case No. 2021-00190
STAFF Second Set Data Requests
Date Received: June 29, 2021

STAFF-DR-02-017

REQUEST:

Refer to D'Ascendis Testimony generally.

- a. Provide the most recent ROE award for each Duke Kentucky affiliate, the state Commission, case number, the date of the order and whether the case proceeding was fully litigated or settled.
- b. Provide the most recent ROE award for each of the companies' state affiliates in the gas proxy group, the date of the award, and whether the case was fully litigated or settled.

RESPONSE:

- a. See STAFF-DR-02-017(a) Attachment.
- b. See STAFF-DR-02-017(b) Attachment.

PERSON RESPONSIBLE: Sarah E. Lawler – a.
Dylan W. D'Ascendis – b.

Company	Current Authorized ROE	Order/Docket No.	Date	Settled/Litigated
Duke Energy Ohio, Inc. (electric)	9.84 percent	17-32-EL-AIR	12/19/2018	Settled
Duke Energy Ohio, Inc. (gas)	9.84 percent	12-1685-GA-AIR	11/13/2013	Settled
Duke Energy Indiana, LLC	9.7 percent	IURC Cause No 45253	6/29/2020	Litigated
Duke Energy Carolinas (NC)	9.6 percent	E-7 Sub 1214	3/31/2021	Partial Settlement including ROE
Duke Energy Progress (NC)	9.6 percent	E-2 Sub 1219	4/16/2021	Partial Settlement including ROE
Duke Energy Florida	9.85 percent	PSC-2021-0202-AS-EI	1/1/2021	Settled
Duke Energy Carolinas (SC)	9.5 percent	2019-323	5/21/2019	Litigated
Duke Energy Progress (SC)	9.5 percent	2019-341	5/21/2019	Litigated
Piedmont (NC)	9.7 percent	G-9, Sub 743	10/31/2019	Settled
Piedmont (SC)	9.8 percent	2020-7-G	10/14/2020	Settled
Piedmont (TN)	9.8 percent	20-00086	5/6/2021	Settled

S&P Global Market Intelligence										
Rate Case History (Past Rate Cases)										
List None										
Company List All										
States All										
Years All										
Service Type Natural Gas										
State	Company	Parent Company Ticker	Docket	Rate Case Service Type	Case Type	Order Date	Decision Type	Return on Equity (%)	Common Equity to Total Capital (%)	
Colorado	Atmos Energy Corp.	ATO	D-13AL-0496G	Natural Gas	Distribution	3/16/2014	Settled	9.72	52.57	
Georgia	Atmos Energy Corp.	ATO	D-30442	Natural Gas	Distribution	3/31/2010	Fully Litigated	10.70	47.70	
Kansas	Atmos Energy Corp.	ATO	D-19-ATMG-525-RTS	Natural Gas	Distribution	2/24/2020	Fully Litigated	9.10	56.32	
Kentucky	Atmos Energy Corp.	ATO	C-2018-00281	Natural Gas	Distribution	5/7/2019	Fully Litigated	9.65	58.06	
Louisiana	Atmos Energy Corp.	ATO	D-U-21484 (LGS)	Natural Gas	Distribution	4/17/1996	Settled	10.77	53.25	
Mississippi	Atmos Energy Corp.	ATO	C-U-4728	Natural Gas	Distribution	11/8/1985	Fully Litigated	12.94	77.76	
Tennessee	Atmos Energy Corp.	ATO	D-14-00146	Natural Gas	Distribution	5/11/2015	Settled	9.80	53.13	
Texas	Atmos Energy Corp.	ATO	D-GUD-10900	Natural Gas	Distribution	4/21/2020	Settled	9.80	60.12	
New Jersey	New Jersey Natural Gas Co.	NJR	D-GR19030420	Natural Gas	Distribution	11/13/2019	Settled	9.60	54.00	
Oregon	Northwest Natural Gas Co.	NWN	D-UG-388	Natural Gas	Distribution	10/16/2020	Settled	9.40	50.00	
Washington	Northwest Natural Gas Co.	NWN	D-UG-181053	Natural Gas	Distribution	10/21/2019	Settled	9.40	49.00	
Kansas	Kansas Gas Service Co.	OGS	D-193,305-U	Natural Gas	Distribution	4/15/1996	Fully Litigated	10.50	49.29	
Oklahoma	Oklahoma Natural Gas Co	OGS	Ca-PUD201500213	Natural Gas	Distribution	1/6/2016	Settled	9.50	60.50	
Texas	Texas Gas Service Co.	OGS	D-GUD-10928	Natural Gas	Distribution	8/4/2020	Settled	9.50	59.00	
New Jersey	Elizabethtown Gas Co.	SJI	D-GR19040486	Natural Gas	Distribution	11/13/2019	Settled	9.60	51.50	
New Jersey	South Jersey Gas Co.	SJI	D-GR20030243	Natural Gas	Distribution	9/23/2020	Settled	9.60	54.00	
Alabama	Spire Alabama Inc.	SR	D-18328	Natural Gas	Distribution	7/2/1982	Fully Litigated	NA	NA	
Alabama	Spire Alabama Inc.	SR	D-18046	Natural Gas	Distribution	7/2/1981	Fully Litigated	14.00	37.19	
Alabama	Spire Gulf Inc.	SR	D-24794	Natural Gas	Distribution	11/27/1995	Fully Litigated	13.60	46.99	
Missouri	Missouri Gas Energy	SR	C-GR-2017-0216	Natural Gas	Distribution	2/21/2018	Fully Litigated	9.80	54.16	
Missouri	Spire Missouri Inc.	SR	C-GR-2017-0215	Natural Gas	Distribution	2/21/2018	Fully Litigated	9.80	54.16	
Arizona	Southwest Gas Corp.	SWX	D-G-01551A-19-0055	Natural Gas	Distribution	12/9/2020	Fully Litigated	9.10	51.10	
California	Southwest Gas Corp.	SWX	A-19-08-015 (SoCal)	Natural Gas	Distribution	3/25/2021	Settled	10.00	52.00	
Nevada	Southwest Gas Corp.	SWX	D-20-02023 (Southern)	Natural Gas	Distribution	9/25/2020	Fully Litigated	9.25	49.26	

Duke Energy Kentucky
Case No. 2021-00190
STAFF Second Set Data Requests
Date Received: June 29, 2021

STAFF-DR-02-018

REQUEST:

Refer to D'Ascendis Testimony, page 4, lines 9-11.

- a. Explain why it is reasonable to include size and credit risk adjustments to Duke Kentucky's ROE recommendation, rather than to looser criteria for the proxy group and form a wider-ranging sample.
- b. Explain whether including these adjustments shows flaws in the selection of the proxy group as a representation sample of similar-risk utilities on which to form an ROE calculation.
- c. Explain whether size and credit risk adjustments are already inherent to ROE's derived from similar risk proxy groups and whether including these adjustments is akin to "double dipping."

RESPONSE:

- a. As noted in Mr. D'Ascendis' Direct Testimony on pages 44 through 48, Duke Energy Kentucky's smaller size and lower credit rating have a material bearing on risk. These adjustments are necessary because no two companies are identical and market expectations regarding future risks and prospects vary within the proxy group, as noted on page 14 of Mr. D'Ascendis' Direct Testimony. Further, loosening the criteria for the proxy group, as suggested by Commission Staff, would result in a larger proxy group that is less comparable to Duke Energy

Kentucky's regulated gas operations at issue in this proceeding, thus likely necessitating larger risk adjustments.

- b. Please refer to Mr. D'Ascendis' response to part (a), above.
- c. Credit and size risk adjustments are not inherent to ROE's derived from similar risk proxy groups. On page 3, lines 7 through 14 of Mr. D'Ascendis' Direct Testimony, he notes that he assessed the market-based common equity cost rates of companies relatively similar, but not necessarily identical to Duke Energy Kentucky. As no proxy group can be identical in risk to any single company, one must make relative risk adjustments to the Utility Proxy Group's indicated common equity cost rates to reflect the company-specific risks of the target company, in this case, Duke Energy Kentucky. Further, as noted on page 12 of Mr. D'Ascendis' Direct Testimony, neither S&P nor Moody's account for company size in their bond ratings, thus applying a size adjustment in addition to a credit risk adjustment would not be considered a "double dip".

PERSON RESPONSIBLE: Dylan W. D'Ascendis

**Duke Energy Kentucky
Case No. 2021-00190
STAFF Second Set Data Requests
Date Received: June 29, 2021**

**CONFIDENTIAL STAFF-DR-02-019
(As to Attachments only)**

REQUEST:

Refer to D'Ascendis Testimony, page 12, lines 1-15. Provide the Standard & Poor's (S&P) and Moody's rating reports for Duke Kentucky for the last two years.

RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET (As to Attachments only)

Please see STAFF-DR-02-019 Confidential Attachments 1 through 4.

PERSON RESPONSIBLE: Chris R. Bauer

**CONFIDENTIAL PROPRIETARY TRADE
SECRET**

**STAFF-DR-02-019 CONFIDENTIAL
ATTACHMENT 1**

FILED UNDER SEAL

**CONFIDENTIAL PROPRIETARY TRADE
SECRET**

**STAFF-DR-02-019 CONFIDENTIAL
ATTACHMENT 2**

FILED UNDER SEAL

**CONFIDENTIAL PROPRIETARY TRADE
SECRET**

**STAFF-DR-02-019 CONFIDENTIAL
ATTACHMENT 3**

FILED UNDER SEAL

**CONFIDENTIAL PROPRIETARY TRADE
SECRET**

**STAFF-DR-02-019 CONFIDENTIAL
ATTACHMENT 4**

FILED UNDER SEAL

Duke Energy Kentucky
Case No. 2021-00190
STAFF Second Set Data Requests
Date Received: June 29, 2021

STAFF-DR-02-020

REQUEST:

Refer to D'Ascendis Testimony, page 13, lines 10-24, and page 14, lines 1-8. With Duke Kentucky being a combination natural gas and electric utility and such a small sample size of natural gas utilities, explain why it would not be appropriate to include combination gas and electric utilities in the proxy group in order to achieve a more significant sample size.

RESPONSE:

As mentioned in Mr. D'Ascendis' Direct Testimony on page 7, rates are set based on the required return for a regulated public utility and are established on a stand-alone basis. Further, Mr. D'Ascendis notes on pages 47 and 48 of his Direct Testimony that the return derived in this proceeding will not apply to Duke Energy Corporation as a whole, but only to Duke Energy Kentucky's gas distribution operations. Therefore, given that this proceeding is concerning the gas operations of Duke Energy Kentucky, Mr. D'Ascendis correctly limited his regulated proxy group to publicly traded gas utilities that passed his seven-part selection criteria outlined on pages 13 and 14 of his Direct Testimony. Lastly, to add further robustness to his analysis, Mr. D'Ascendis considered a comparable Non-Price Regulated Proxy Group of 48 companies similar in total risk to the Utility Proxy Group, as discussed in Section IV, part D of Mr. D'Ascendis' Direct Testimony.

PERSON RESPONSIBLE: Dylan W. D'Ascendis

Duke Energy Kentucky
Case No. 2021-00190
STAFF Second Set Data Requests
Date Received: June 29, 2021

STAFF-DR-02-021

REQUEST:

Refer to D'Ascendis Testimony, page 13 lines 12-24, and page 14, lines 1-8.

- a. Confirm whether Duke Kentucky meets all the proxy group requirements.
- b. Explain the rationale for the 60 percent cutoff in criteria (ii) and provide the percentage of fiscal year 2020 total operating income and total assets attributable to regulated gas distribution operations for Duke Kentucky.

RESPONSE:

- a. As noted in Section III of Mr. D'Ascendis' Direct Testimony, Duke Energy Kentucky is not publicly traded thus the market-based criteria relied upon to select Mr. D'Ascendis' proxy group does not exist for Duke Energy Kentucky which would encompass criteria (i), (iv), (v), (vi), and (vii). To Mr. D'Ascendis' knowledge, Duke Energy Kentucky passes criteria (ii) and (iii).
- b. (i) Mr. D'Ascendis' objective in selecting a proxy group is to develop a proxy group that is highly representative of the risks and prospects faced by Duke Energy Kentucky's regulated gas distribution operations. Therefore, Mr. D'Ascendis selected companies with at least 60% of operating income and assets attributable to regulated natural gas operations to ensure the proxy group companies had rate-regulated operations similar to the subject company. The threshold to eliminate companies with significant unregulated operations must balance the need to develop a group of companies that is fundamentally comparable to the Company

with the need to develop a proxy group of sufficient size. In Mr. D'Ascendis' view, the 60% threshold reasonably balances those objectives.

(ii) Duke Energy Kentucky's gas operations at issue in this proceeding are a pure play natural gas utility which means 100% of its operating income and total assets are attributable to regulated natural gas service.

PERSON RESPONSIBLE: Dylan W. D'Ascendis

Duke Energy Kentucky
Case No. 2021-00190
STAFF Second Set Data Requests
Date Received: June 29, 2021

STAFF-DR-02-022

REQUEST:

Refer to D'Ascendis Testimony, page 15, lines 5-7. Explain whether the analysis to determine the relative risk between Duke Kentucky and the Utility Proxy Group as to whether or not explicit adjustments need to be made to the Utility Proxy Group results is subjective in nature.

RESPONSE:

Yes, the determination of whether, or not, explicit Company-specific adjustments to the Utility Proxy Group indicated results is subjective in nature based on expert judgment and supported by financial literature. As noted in Mr. D'Ascendis' Direct Testimony on page 8-9, determining the cost of capital is a comparative exercise based on the economic principle of "opportunity costs." However, given that no two companies are identical, as noted on page 3 and 14-15 of Mr. D'Ascendis' Direct Testimony, a relative risk analysis between the Company and the Utility Proxy Group is necessary. Although analysts may have different approaches to determine the investor required return for a particular utility operating company, Mr. D'Ascendis' opinion is that the adjustments outlined in his Direct Testimony are appropriate to reflect the unique risks associated with Duke Energy Kentucky's regulated gas distribution operations.

PERSON RESPONSIBLE: Dylan W. D'Ascendis

Duke Energy Kentucky
Case No. 2021-00190
STAFF Second Set Data Requests
Date Received: June 29, 2021

STAFF-DR-02-023

REQUEST:

Refer to D'Ascendis Testimony, page 19, lines 4-14, and the other analyses in general.

- a. Explain why it is reasonable to include high and low outliers in the ROE results, rather than remove them.
- b. Explain why it is reasonable to use the average of the mean and median results for the ROE estimates, rather than the just the median a resistant measure of center in the presence of outliers.

RESPONSE:

- a. As noted on page 19 of Mr. D'Ascendis' Direct Testimony, he relied on the average of the mean and the median results of the DCF in order to consider all the proxy utilities' results, while mitigating the high and low outliers of those individual results. Mr. D'Ascendis considers both measures of central tendency because all of the Utility Proxy Group companies are considered to be of similar risk to Duke Energy Kentucky which means they would also all be considered as alternative investments to Duke Energy Kentucky.
- b. Please refer to Mr. D'Ascendis' response to part (a), above.

PERSON RESPONSIBLE: Dylan W. D'Ascendis

Duke Energy Kentucky
Case No. 2021-00190
STAFF Second Set Data Requests
Date Received: June 29, 2021

STAFF-DR-02-024

REQUEST:

Refer to D'Ascendis Testimony, page 20, lines 9-15.

- a. Provide a list of Duke Kentucky affiliate state commissions that have accepted or rejected the Predictive Risk Premium Model (PRPM) analysis for estimating ROE. Include in the response the case number, year and a copy of the Commission's Order.
- b. Provide a copy of the article referenced in footnote 10.

RESPONSE:

- a. Mr. D'Ascendis understands that Duke Energy's electric operations are regulated by the North Carolina Utilities Commission (NCUC), the Public Service Commission of South Carolina (PSCSC), the Florida Public Service Commission (FPSC), the Indiana Utility Regulatory Commission (IRUC), the Public Utility Commission of Ohio (PUCO), and the Kentucky Public Service Commission (KPSC) and Duke Energy's gas operations are regulated by the NCUC, the PSCSC, the PUCO, the KPSC, and the TPUC. The PRPM has been presented in front of all of these regulatory jurisdictions, but has only been addressed by the NCUC, PSCSC, and the FPSC. The NCUC accepted the PRPM, in part, as shown in STAFF-DR-02-024(a) Attachment 1, the PSCSC accepted the PRPM, as presented in this proceeding, as shown in STAFF-DR-02-024(a) Attachment 2, and the FPSC rejected the PRPM as shown in STAFF-DR-02-024(a) Attachment 3.

b. Please refer to STAFF-DR-02-024(b) Attachment.

PERSON RESPONSIBLE: Dylan W. D'Ascendis

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. W-354, SUB 363
DOCKET NO. W-354, SUB 364
DOCKET NO. W-354, SUB 365

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. W-354, SUB 363)
)
In the Matter of)
Application by Carolina Water Service, Inc.)
of North Carolina, 4944 Parkway Plaza)
Boulevard, Suite 375, Charlotte, North)
Carolina, 28217, for an Accounting Order to)
Defer Incremental Storm Damage Expenses)
Incurred as a Result of Hurricane Florence)
)
DOCKET NO. W-354, SUB 364)
)
In the Matter of)
Application by Carolina Water Service, Inc.)
of North Carolina, 4944 Parkway Plaza)
Boulevard, Suite 375, Charlotte, North)
Carolina, 28217, for Authority to Adjust and)
Increase Rates for Water and Sewer Utility)
Service in All of its Service Areas in North)
Carolina)
)
DOCKET NO. W-354, SUB 365)
)
In the Matter of)
Application by Carolina Water Service, Inc.)
of North Carolina, 4944 Parkway Plaza)
Boulevard, Suite 375, Charlotte, North)
Carolina, 28217, for an Accounting Order to)
Defer Post-In-Service Depreciation and)
Financing Costs Related to Major New)
Projects That Are or Will Be In-Service Prior)
to the Date of An Order in Petitioner's)
Pending Base Rate Case)

ORDER GRANTING PARTIAL
RATE INCREASE AND
REQUIRING CUSTOMER NOTICE

HEARD: Thursday, September 5, 2019, at 7:00 p.m., in Courtroom 5350, Mecklenburg County Courthouse, 832 East 4th Street, Charlotte, North Carolina

Tuesday, September 10, 2019, at 7:00 p.m., in Courtroom A, Dare County Courthouse, 962 Marshall C. Collins Drive, Manteo, North Carolina

Tuesday, October 8, 2019, at 7:00 p.m., in Courtroom #1, Watauga County Courthouse, 842 W. King Street, Boone, North Carolina

Wednesday, October 9, 2019, at 7:00 p.m., in Courtroom 1A, Buncombe County Courthouse, 60 Court Plaza, Asheville, North Carolina

Monday, October 14, 2019, at 7:00 p.m., in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina

Tuesday, October 22, 2019, at 7:00 p.m., in the Superior Courtroom, Onslow County Courthouse, 625 Court Street, Jacksonville, North Carolina

Monday, December 2, 2019, at 2:00 p.m., in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina

BEFORE: Commissioner ToNola D. Brown-Bland, Presiding; Chair Charlotte A. Mitchell; and Commissioners Lyons Gray, Daniel G. Clodfelter, Kimberly W. Duffley, and Jeffrey A. Hughes

APPEARANCES:

For Carolina Water Service, Inc. of North Carolina:

Jo Anne Sanford, Sanford Law Office, PLLC, Post Office Box 28085, Raleigh, North Carolina 27611

Robert H. Bennink, Jr., Bennink Law Office, 130 Murphy Drive, Cary, North Carolina 27513

Mark R. Alson, Ice Miller LLP, One American Square, Suite 290, Indianapolis, Indiana 46282-0200

Christina D. Cress, Nichols, Choi & Lee, PLLC, 4700 Homewood Court, Suite 220, Raleigh, North Carolina 27609

For Corolla Light Community Association, Inc.:

Brady W. Allen, The Allen Law Offices, PLLC, 1514 Glenwood Ave.,
Suite 200, Raleigh, North Carolina 27608

For the Using and Consuming Public:

Gina C. Holt, William E. Grantmyre, John Little, and William E. H. Creech,
Staff Attorneys, Public Staff – North Carolina Utilities Commission,
4326 Mail Service Center, Raleigh, North Carolina 27699

BY THE COMMISSION: On January 17, 2019, in Docket No. W-354, Sub 363 (Sub 363) Carolina Water Service, Inc., of North Carolina (CWSNC or Company) filed a Petition for an Accounting Order to Defer Unplanned Incremental Hurricane Florence Storm Damage Expenses, Capital Investments, and Revenue Loss.

On May 24, 2019, pursuant to Commission Rule R1-17(a), CWSNC submitted notice of its intent to file a general rate case application in Docket No. W-354, Sub 364 (Sub 364).

On June 6, 2019, the Commission entered an order consolidating Sub 363 and Sub 364.

On June 28, 2019, CWSNC filed its verified application for a general rate increase (Application) in Sub 364 seeking authority to: (1) increase and adjust its rates for water and sewer utility service in all of its service areas in North Carolina, including the service areas of Riverbend Estates and Pace Utilities Group, Inc., which have been recently transferred to CWSNC; (2) consolidate rates for the Corolla Light/Monteray Shores (CLMS) service area with the Uniform Sewer Rate Division rates; and (3) pass through any increases in purchased bulk water rates and any increased costs of wastewater treatment performed by third parties and billed to CWSNC, all subject to CWSNC providing sufficient proof of such increases. In addition, the Company included as part of its rate case filing certain information and data required by NCUC Form W-1.

As part of the its Application CWSNC filed direct testimony of the following witnesses: Catherine E. Heigel, President of CWSNC, Tennessee Water Service, Inc., and Blue Granite Water Company;¹ Dante M. DeStefano, Director of Financial Planning and Analysis for CWSNC; Gordon R. Barefoot, President and CEO of Corix Infrastructure, Inc.;² J. Bryce Mendenhall, Vice President of Operations for CWSNC; Anthony Gray,

¹ On November 1, 2019, CWSNC filed notice that Donald H. Denton would adopt the prefiled direct testimony of Catherine E. Heigel.

² On November 8, 2019, CWSNC filed notice that Shawn EliceGUI would adopt the prefiled direct testimony of Gordon R. Barefoot.

Senior Financial and Regulatory Analyst, CWSNC; and Dylan W. D'Ascendis, Director at ScottMadden, Inc.

The Company stated in its Application that it presently has approximately 34,915 water customers and 21,403 sewer customers in North Carolina (including water and sewer availability customers).³ The present rates for water and sewer service have been in effect since February 21, 2019, pursuant to the Commission's Order Approving Joint Partial Settlement Agreement and Stipulation, Granting Partial Rate Increase and Requiring Customer Notice issued in CWSNC's last general rate case in Docket No. W-354, Sub 360 (Sub 360 Order).

On June 28, 2019, in Docket No. W-354, Sub 365 (Sub 365), CWSNC also filed a Petition for an Accounting Order to Defer Post-In-Service Depreciation and Financing Costs Relating to Major New Projects.

On July 15, 2019, the Commission issued an Order Establishing General Rate Case and Suspending Rates. By that order, the Commission declared the matter to be a general rate case pursuant to N.C. Gen. Stat. § 62-137, suspended the proposed new rates for up to 270 days pursuant to N.C.G.S. § 62-134, and established the test year period for this case as the 12-month period ending March 31, 2019.

On August 2, 2019, the Commission issued an Order Scheduling Hearings and Requiring Customer Notice (Scheduling Order) which required the parties to prefile testimony and exhibits, scheduled the matter for hearing, and required notice to all affected customers. That order scheduled customer hearings to be held in Charlotte, Manteo, Boone, Asheville, Raleigh, and Jacksonville, North Carolina, and set the expert witness hearing to be held in Raleigh, North Carolina.

Also on August 2, 2019, CWSNC witness DeStefano filed supplemental testimony, and on August 23, 2019, CWSNC filed an amended exhibit to witness DeStefano's supplemental testimony.

On August 21, 2019, CWSNC filed a certificate of service demonstrating that the Company provided notice of this general rate case proceeding to customers as required by the Commission's Scheduling Order.

On August 22, 2019, Corolla Light Community Association, Inc. (CLCA), filed a Petition to Intervene, which the Commission granted by order dated September 5, 2019.

³ The Company did not indicate the specific date related to its present number of customers stated in the Application. The number of customers presented in Finding of Fact No. 13 herein is based on the detailed billing analysis prepared by Public Staff witness Casselberry for the 12-month period ended March 31, 2019, and is not disputed by the Company.

The Public Staff – North Carolina Utilities Commission’s (Public Staff) participation in this proceeding is recognized pursuant to N.C.G.S. § 62-15(d) and Commission Rule R1-19(e).

Public witness hearings were held as scheduled. A total of 23 Company customers testified as public witnesses at the public witness hearings held in this proceeding.

CWSNC responded to public witness testimony by its filings of September 25 (combined Charlotte and Manteo), October 24 (combined Boone and Asheville), October 30 (Raleigh), and November 8, 2019 (Jacksonville).

On October 4, 2019, CWSNC filed its rate case updates, schedules, and supporting data as required by Ordering Paragraph No. 6 of the Commission’s Scheduling Order.

The Public Staff filed its direct testimony on November 4, 2019, consisting of testimony and exhibits of Public Staff witnesses Gina Y. Casselberry, Utilities Engineer, Water, Sewer, and Telephone Division; Charles M. Junis, Utilities Engineer, Water, Sewer, and Telephone Division; Lindsey Q. Darden, Utilities Engineer, Water, Sewer, and Telephone Division; Windley E. Henry, Manager, Water, Sewer, and Telephone Section, Accounting Division; Michelle M. Boswell, Staff Accountant, Accounting Division; Lynn L. Feasel, Staff Accountant, Accounting Division; and John R. Hinton, Director, Economic Research Division.

The Public Staff filed the supplemental testimony of witness Casselberry on November 15, 2019.

On November 15, 2019, the Company filed a request to consolidate Sub 365 with this rate case. The Commission issued an order consolidating Sub 364 and Sub 365 on November 19, 2019.

The Public Staff filed revised exhibits of Public Staff witnesses Feasel and Henry on November 18, 2019.

On November 18, 2019, CWSNC withdrew its request for consideration of the Company’s proposed Consumption Adjustment Mechanism and Conservation Rate Pilot Program proposed for The Point Subdivision.

CWSNC filed the rebuttal testimony of Company witnesses DeStefano, Mendenhall, and D’Ascendis on November 20, 2019.

On November 26, 2019, Public Staff witness Hinton filed supplemental testimony and exhibits, revising his recommended rate of return on common equity and updating four exhibits filed with his testimony on November 4, 2019.

On November 27, 2019, CWSNC and the Public Staff (Stipulating Parties) filed a Joint Partial Settlement Agreement and Stipulation (Stipulation). On that date, the Public Staff also filed exhibits and supporting schedules for the Stipulation.

On December 2, 2019, CLCA filed a resolution opposing CWSNC's rate increase Application but requesting that CLMS' rates be set as part of CWSNC's uniform rate division.

The expert witness hearing was held as scheduled beginning on December 2, 2019. All prefiled testimony and exhibits filed in the consolidated dockets were admitted into evidence without objection. All parties agreed to waive cross-examination on all prefiled direct testimony with respect to the issues the parties resolved by Stipulation.

During the hearing the Commissioners requested certain additional information in the form of late-filed exhibits. The Public Staff filed the late-filed exhibits of Public Staff witnesses Casselberry and Henry on December 9 and 11, 2019, respectively. CWSNC filed the late-filed exhibits of Company witnesses DeStefano, D'Ascendis, and Mendenhall on December 13, 2019.

On January 10, 2020, CWSNC filed the affidavit of its Financial Planning and Analysis Manager, Matthew Schellinger, providing the updated amount of regulatory commission expense agreed to by CWSNC and the Public Staff.

On January 13, 2020, the Public Staff filed Revised Settlement Exhibits I and II providing the final expense information of CWSNC and the Public Staff's final revised recommendation.

Based upon the foregoing, including the verified Application and accompanying NCUC Form W-1, the testimony and exhibits of the public witnesses appearing at the hearings, the testimony and exhibits of the expert witnesses received into evidence, the Stipulation, and the entire record herein, the Commission makes the following:

FINDINGS OF FACT

General Matters

1. CWSNC is a corporation duly organized under the laws of and is authorized to do business in the State of North Carolina. It is a franchised public utility providing water and sewer utility service to customers in 38 counties in North Carolina. CWSNC is

a wholly-owned subsidiary of Corix Regulated Utilities, Inc. (Corix),⁴ previously known as Utilities, Inc.

2. CWSNC is properly before the Commission pursuant to Chapter 62 of the North Carolina General Statutes for a determination of the justness and reasonableness of its proposed rates and charges for the water and sewer utility service it provides to customers in North Carolina.

3. The appropriate test year for use in this proceeding is the 12-month period ending March 31, 2019, updated for known and measurable changes through the close of the expert witness hearing.

4. CWSNC's present rates for water and sewer service have been in effect since February 21, 2019, pursuant to the Commission's Sub 360 Order.

The Stipulation

5. On November 27, 2019, the Stipulating Parties filed the Stipulation, resolving all but two of the contested issues between CWSNC and the Public Staff in this matter.

6. The Stipulation is the product of give-and-take in negotiations between the Stipulating Parties, is material evidence in this proceeding, and is entitled to be given appropriate weight in this case along with the other evidence of record, including that submitted by the Company, the Public Staff, and the public witnesses who testified at the public witness hearings.

7. The Stipulation is a settlement of matters in controversy in this proceeding as between the Stipulating Parties and was not joined in nor objected to by CLCA, the other party to the proceeding.

8. The two remaining contested issues (Unsettled Issues) which were not resolved by the Stipulation between CWSNC and the Public Staff are:

- a. Rate of return on common equity; and
- b. CWSNC's request for deferred accounting treatment of certain costs related to the Automatic Meter Reading (AMR) meter installation projects in the Fairfield Mountain and Connestee Falls systems.

⁴ Pursuant to the Articles of Amendment filed with the Illinois Secretary of State, Department of Business Services on July 25, 2019, Utilities Inc, changed its corporate name to Corix Regulated Utilities, Inc. Corix owns regulated utilities which provide water and sewer utility service to approximately 190,000 customers in 17 states, with primary service areas in Florida, North Carolina, South Carolina, Louisiana, and Nevada.

Acceptance of Stipulation

9. The Stipulation will provide CWSNC and its ratepayers just and reasonable rates when combined with the rate effects of the Commission's decisions regarding the Unsettled Issues in this proceeding.

10. The provisions of the Stipulation are just and reasonable to all parties to this proceeding, as well as the CWSNC ratepaying customers, and serve the public interest.

11. It is appropriate to approve the Stipulation in its entirety.

Customer Concerns and Service

12. As of the 12-month period ended March 31, 2019, CWSNC served approximately 30,724 water customers and 20,105 wastewater customers, including CLMS. For the same period, CWSNC also had 3,532 water availability customers in Carolina Forest, Woodrun, Linville Ridge, Sapphire Valley, Connestee Falls, and Fairfield Harbour; and 1,274 sewer availability customers in Sapphire Valley, Connestee Falls, and Fairfield Harbour. CWSNC operates 96 water utility systems and 37 sewer utility systems.

13. A total of 23 witnesses testified at the six public witness hearings held for the purpose of receiving customer testimony.⁵ In general, public witness testimony at those hearings primarily dealt with objections to the rate increase with some customers raising concerns about quality of service, including, but not limited to, old equipment, delays in attention to meter repair, hardness of the water, digital meter boxes installed below the water table, boil water notices (including incidents and related communication), sewer spills in the lake at Connestee Falls, fluoride in the water, the ratio of base to fixed charges, response time to some inquiries, mineral content, the proposed Consumption Adjustment Mechanism, and the requirement of paying sewer charges while a home was unoccupied due to hurricane damage.

14. As of November 15, 2019, the Public Staff had received approximately 316 written customer statements of position from CWSNC customers. The service areas represented by those submitting such statements are: Belvedere (1), Brandywine Bay (2), Carolina Pines (1), Carolina Trace (11), Corolla Light/Monteray Shores (1), Connestee Falls (48), Fairfield Harbour (33), Kings Grant (1), Sapphire Valley (2), The Point (161), Treasure Cove (1), Ski Mountain (1) Waterglyn, (1) Woodhaven (1), and unspecified service areas (51).⁶ All of the customers objected to the magnitude and frequency of the

⁵ As noted above in the procedural history, there were no witnesses in Manteo, four in Charlotte, none in Boone, nine in Asheville, four in Raleigh, and six in Jacksonville.

⁶ Approximately 80% of the customer statements came from four subdivisions or systems. Public Staff witness Casselberry testified that nearly all of the customers in The Point Subdivision opposed CWSNC's proposed Pilot Program.

Company's rate increases. Their primary concern was that CWSNC's request for another rate increase was so soon after the most recent increase was granted in February 2019. Customers were also concerned about the rate of return on common equity requested, the increase in rates compared to inflation, the impact of recent federal corporate income tax reductions, and the ratio of the base facility charge to volumetric charges. The majority of the customers in The Point Subdivision opposed CWSNC's proposed Pilot Program.⁷

15. CWSNC filed four verified reports with the Commission addressing the service-related concerns and other comments by witnesses who testified at the public witness hearings. The reports described each of the witnesses' specific service-related concerns and comments, the Company's response, and how each concern and comment was resolved or addressed, if applicable.

16. The Company's customers in the Bradfield Farms Subdivision, Brandywine Bay, and the Fairfield Harbour Service Area testified to hardness of the water and unpleasant taste, conditions that are not regulated by the North Carolina Department of Environmental Quality (DEQ).

17. It is appropriate for CWSNC to provide an estimate of the cost of installing a central water filter system for Bradfield Farms Subdivision and the Fairfield Harbour Service Area, for the homeowners' association's consideration, within 60 days of the final order in this case, as recommended by the Public Staff.⁸

18. CWSNC has continued its course of increased attention to the communications component of service to customers since the Company's last rate case, with a positive emphasis on more proactive communications and the expansion of several social media platforms.

19. The Public Staff's description of the quality of service provided by CWSNC as "good" is supported by the record in this case.

20. The overall quality of service provided by CWSNC is adequate.

⁷ Public Staff witness Casselberry testified that the primary objections of customers at The Point Subdivision were that: (1) customers in The Point Subdivision were being penalized and that the block rates should apply to all CWSNC customers, (2) the average consumption did not take into account customers who live on the lake and use lake water for irrigation, (3) the covenants do not allow individual wells for irrigation, and (4) the conditions and rules for landscaping would increase the average bill by approximately 30% if the block tiered rates were approved.

⁸ Public Staff witness Casselberry testified that in CWSNC's previous rate case, Sub 360, filed in 2018, the Public Staff investigated whether installing a central water filter system for Fairfield Harbour was a prudent investment. In that proceeding the Public Staff determined it was not a prudent investment because most customers had individual water softeners and filter systems in their homes and the cost in 2011 to install the system was approaching \$1 million dollars. However, since it still remains an issue with customers at Fairfield Harbour and Bradfield Farms, the Public Staff recommended that if the majority of homeowners want a central water filter system, a monthly surcharge could be added to customer bills in those service areas to recover the costs for the systems.

Rate Base

21. The appropriate level of rate base used and useful in providing service is \$132,897,368 for CWSNC’s combined operations, itemized as follows:

Item	Amount
Plant in service	\$238,212,084
Accumulated depreciation	<u>(57,897,943)</u>
Net plant in service	180,314,141
Cash working capital	2,404,800
Contributions in aid of construction	(40,270,675)
Advances in aid of construction	(32,940)
Accumulated deferred income taxes	(5,995,444)
Customer deposits	(315,447)
Inventory	271,956
Gain on sale and flow back taxes	(417,811)
Plant acquisition adjustment	(837,878)
Excess book value	(0)
Cost-free capital	(261,499)
Average tax accruals	(143,198)
Regulatory liability for excess deferred taxes	(3,941,344)
Deferred charges	2,122,707
Pro forma plant	<u>0</u>
Original cost rate base	<u>\$132,897,368</u>

Operating Revenues

22. The appropriate level of operating revenues under present rates for use in this proceeding is \$33,968,582, consisting of service revenues of \$33,852,232 and miscellaneous revenues of \$387,492, reduced by uncollectibles of \$271,142.

Maintenance and General Expense

23. The appropriate level of maintenance expense and general expense for combined operations for use in this proceeding is \$14,897,501 and \$6,560,142, respectively.

24. It is appropriate for CWSNC to recover total rate case expenses of \$519,416 related to the current proceeding and \$649,806 of unamortized rate case costs related to the prior proceedings in Docket Nos. W-354, Sub 356 (Sub 356) and W-354, Sub 360 (Sub 360).

25. It is appropriate to amortize the total rate case costs for the current and prior proceedings over five years and to include an annual level of costs in the amount of

\$73,911 related to miscellaneous regulatory matters, resulting in an annual level of rate case expense of \$307,755, as agreed to by the Stipulating Parties.

Storm Reserve Fund and Normalized Storm Damage Expense

26. It is reasonable and appropriate for CWSNC to include in rates an annualized level of storm expenses in its maintenance and repair expense, based on a ten-year average of the Company's actual storm costs. This is the first general rate case proceeding in which CWSNC has sought Commission approval of a normalized level of storm expenses to be included in base rates. As part of the Stipulation CWSNC and the Public Staff agreed that CWSNC would rescind its request for a storm reserve fund and that the calculation of normalized storm damage expense would be based on a ten-year average of the Company's actual storm costs rather than utilizing the Company's requested three-year average.

27. The appropriate annual amount of normalized storm costs that should be included in the Company's rates in this case is \$34,567, as set out in the Stipulation.

Hurricane Florence Expense

28. It is reasonable and appropriate for CWSNC to include in rates the incremental operating and maintenance (O&M) costs amounting to \$146,773 incurred by the Company related to Hurricane Florence.

29. The Company and the Public Staff have agreed to use deferral accounting treatment for Hurricane Florence storm-related expenses, which will be amortized over three years.

30. It is appropriate to include in the Company's maintenance and repair expense Hurricane Florence storm-related costs in the amount of \$48,924, as set out in the Stipulation.

Deferral of Wastewater Treatment Plant and AMR Meter Installation Projects

31. In its Petition for an Accounting Order to Defer Post-In-Service Depreciation and Financing Costs Relating to Major New Projects in Sub 365 CWSNC requested deferral accounting treatment for post-in-service depreciation expense and financing costs (carrying costs) related to the Connestee Falls wastewater treatment plant (WWTP) project in Buncombe County; the Nags Head WWTP project in Dare County; the Fairfield Mountain AMR meter installation project in Transylvania County; and the Connestee Falls AMR meter installation project, also in Buncombe County.

32. During the test year for this rate case CWSNC earned a return on equity per books of 1.63% on a consolidated basis. The Company's current rates were set in the Sub 360 rate case effective for service rendered on and after February 21, 2019, based upon an authorized rate of return on common equity of 9.75%. CWSNC invested

approximately \$22 million of additional capital in its North Carolina water and sewer systems since the Sub 360 rate case, which served to depress its post-test year earned rate of return on common equity.

33. Each of the four capital projects covered by the Petition requesting deferral accounting treatment was completed and placed in service prior to the expert witness hearing in these proceedings. As evidenced by the Stipulation, CWSNC and the Public Staff agreed to the Company's deferral of incremental post-in-service depreciation expense and financing costs of the two WWTP projects and to the amount of the costs to be included in the rate case.

34. The Public Staff did not agree to deferral accounting treatment for the incremental post-in-service depreciation expense and return on capital expenditures relating to the two AMR meter installation projects.

35. In this case the two WWTP projects subject to the Company's deferral request were prudent and necessary to the provision of service, and the costs for each of those projects were reasonable and prudently incurred. CWSNC and the Public Staff agree that the Company should be authorized to defer post-in-service costs of \$1,098,778 for the two WWTP projects (\$520,144 for Connestee Falls and \$578,634 for Nags Head). CWSNC and the Public Staff also agree that the rate of return on common equity impact is 434 basis points for the Uniform Sewer Rate Division.

36. The project costs for each of the two WWTP projects, considered both collectively and singularly, are unusual or extraordinary in that they represent major capital investments in the Company's infrastructure; they are non-routine projects which are of considerable complexity and major significance; and they are necessary to CWSNC's provision of safe, adequate, reliable, and affordable utility service in this state. The WWTP costs are of a magnitude that would have an adverse material impact on the Company's financial condition if they are not afforded deferral accounting treatment.

37. It is reasonable and appropriate for CWSNC to receive deferral accounting treatment for the post-in-service depreciation expense and carrying costs related to the Company's capital investments in the WWTPs placed in service at Nags Head and Connestee Falls during the pendency of this proceeding.

38. The Company should be authorized to defer and amortize post-in-service depreciation expense and carrying costs in the amount of \$1,098,778 related to its capital investments in the Nags Head and Connestee Falls WWTPs for the ten- and eight-month periods, respectively, from their in-service dates until the projects are included for recovery in base rates, as stipulated between CWSNC and the Public Staff. These costs should be amortized over a period of five years.

39. CWSNC expects significant ongoing capital needs at levels comparable to the \$22 million additional capital it invested in its North Carolina water and sewer systems since the Sub 360 rate case. Deferral accounting treatment for the post-in-service costs

related to the two WWTPs is appropriate to support the Company's ability to earn its authorized return and, as a result, could impact CWSNC's ability to finance needed investments on reasonable terms. Accordingly, deferral accounting treatment for the two WWTP costs will have a favorable impact on CWSNC's earnings and financial standing in general thereby enhancing the Company's ability to access and obtain capital on favorable terms and such results will accrue to the benefit of the Company's customers as well as to its investors.

40. The two AMR meter installation projects included in CWSNC's deferral accounting request were prudent and the costs for the installation were reasonable and prudently incurred. CWSNC and the Public Staff agree that the rate of return on common equity impact is 24 basis points for the Uniform Water Rate Division.⁹ CWSNC and the Public Staff also agree that the requested cost deferral amount related to the AMR meter installation costs is \$64,736 for the eight-month period from their in-service dates until the projects are included for recovery in base rates in this case.

41. The two AMR meter installation projects in the Fairfield Mountain and Connestee Falls service areas are not unusual or extraordinary, and thus the incremental post-in-service depreciation expense and carrying costs related to the two projects are not appropriate for deferral accounting treatment.

Depreciation and Amortization Expense

42. The appropriate level of depreciation and amortization expense for combined operations for use in this proceeding is \$5,026,554.

Franchise, Property, Payroll, and Other Taxes

43. The appropriate level of franchise, property, payroll, and other taxes for use in this proceeding is \$795,507 for combined operations, consisting of (\$655) for franchise and other taxes, \$268,734 for property taxes, and \$527,428 for payroll taxes.

Regulatory Fee and Income Taxes

44. It is reasonable and appropriate to calculate regulatory fee expense using the regulatory fee rate of 0.13% effective July 1, 2019, pursuant to the Commission's June 18, 2019 Order issued in Docket No. M-100, Sub 142. The appropriate level of regulatory fee for use in this proceeding is \$44,159.

⁹ Calculated on a rate division basis, per Public Staff DeStefano Cross-Examination Exhibit 2. The total company ROE impact is 13 basis points as shown on Public Staff witness Henry Late-Filed Exhibit 4, Line 9.

45. It is reasonable and appropriate to use the current North Carolina corporate income tax rate of 2.50% to calculate CWSNC's revenue requirement. The appropriate level of state income taxes for use in this proceeding is \$75,474.

46. It is reasonable and appropriate to use the federal corporate income tax rate of 21.00% to calculate CWSNC's revenue requirement. The appropriate level of federal income taxes for use in this proceeding is \$618,133.

47. It is appropriate to calculate income taxes for ratemaking purposes based on the adjusted level of revenues and expenses and the tax rates for utility operations.

The Federal Tax Cuts and Jobs Act

48. CWSNC's federal protected EDIT should continue to be flowed back in accordance with the Reverse South Georgia Method (RSGM) as ordered by the Commission in the Sub 360 Order.

49. It is reasonable and appropriate, for purposes of this proceeding, for CWSNC to refund its remaining federal unprotected EDIT balances over 24 months instead of the remaining 35 months as originally ordered by the Commission in the Sub 360 Order.

50. CWSNC's North Carolina EDIT recorded pursuant to the Commission's May 13, 2014 Order Addressing the Impacts of HB 998 on North Carolina Public Utilities issued in Docket No. M-100, Sub 138 should continue to be amortized in accordance with the Commission's Sub 356 Order.

Capital Structure, Cost of Capital, and Overall Rate of Return

51. The cost of capital and revenue increase approved in this order is intended to provide CWSNC, through sound management, the opportunity to earn an overall rate of return of 7.39%. This overall rate of return is derived from applying an embedded cost of debt of 5.36%, and a rate of return on common equity of 9.50%, to a capital structure consisting of 50.90% long-term debt and 49.10% common equity.

52. A 9.50% rate of return on common equity for CWSNC is just and reasonable in this general rate case.

53. A 49.10% equity and 50.90% debt ratio is a reasonable and appropriate capital structure for CWSNC in this case.

54. A 5.36% cost of debt for CWSNC is reasonable and appropriate for the purpose of this case.

55. Any increase in the Company's rate for service will be difficult for some of CWSNC's customers to pay, in particular for those considered to be low-income customers.

56. Continuous safe, adequate, reliable, and affordable water and wastewater utility service by CWSNC is essential to CWSNC's customers.

57. The rate of return on common equity and capital structure approved by the Commission appropriately balances the benefits received by CWSNC's customers from CWSNC's provision of safe, adequate, and reliable water and wastewater utility service with the difficulties that some of CWSNC's customers will experience in paying the Company's increased rates.

58. The 9.50% rate of return on common equity and the 49.10% equity capital structure approved by the Commission balance CWSNC's need to obtain equity and debt financing with its customers' need to pay the lowest possible rates.

59. The authorized levels of overall rate of return and rate of return on common equity set forth above are supported by competent, material, and substantial record evidence; are consistent with the requirements of N.C.G.S. § 62-133; and are fair to CWSNC's customers generally and in light of the impact of changing economic conditions.

Revenue Requirement

60. CWSNC's rates should be changed by amounts which, after all pro forma adjustments, will produce the following increases in revenues:

<u>Item</u>	<u>Amount</u>
CWSNC Uniform Water	\$ 1,778,015
CWSNC Uniform Sewer	2,929,386
BF/FH/TC Water	96,561
BF/FH Sewer	141,797
Total	<u>\$4,945,759</u>

These increases will allow CWSNC the opportunity to earn a 7.39% overall rate of return, which the Commission has found to be reasonable upon consideration of the findings in this order.

Rate Design

61. Regarding the CLMS sewer service area, CWSNC has maintained the CLMS system at the same rates for the last four general rate cases (Docket No. W-354, Subs 336, 344, 356, and 360) in order to allow the remainder of the Uniform Sewer Rate Division to move toward parity with the CLMS sewer rates. In this proceeding the Company proposes to consolidate the CLMS sewer service area rates with the Uniform

Sewer Rate Division rates, as the total Uniform Sewer revenue requirement is currently sufficient to allow for such consolidation of rate structures. It is reasonable and appropriate at this time to consolidate the CLMS sewer service area rates with the Company's Uniform Sewer rates. This rate design is supported by both the Public Staff and CLCA.

62. It is reasonable and appropriate for CWSNC's rate design for water utility service for its Uniform Water and Bradfield Farms/Fairfield Harbour/Treasure Cove (BF/FH/TC) Water residential customers to be based on a 50/50 ratio of base charge to usage charge, and to use an 80/20 ratio of base charge to usage charge for CWSNC's Uniform Sewer residential customers, as set out in the Stipulation.

63. The rates and charges included in Appendices A-1 and A-2, and the Schedules of Connection Fees for Uniform Water and Uniform Sewer, attached hereto as Appendices B-1 and B-2, are just and reasonable and should be approved.

Water and Sewer System Improvement Charges

64. Consistent with Commission Rules R7-39(k) and R10-36(k), CWSNC's WSIC and SSIC surcharges will reset to zero as of the effective date of the approved rates in this proceeding.

65. Pursuant to N.C.G.S. § 62-133.12, the cumulative maximum charges that the Company can recover between rate cases cannot exceed 5% of the total service revenues approved by the Commission in this rate case.

Recommendations of the Public Staff

66. It is reasonable and appropriate for the Company, in its next general rate case filing, to ensure that its NCUC Form W-1, Item 26 has been carefully reviewed so that the filing does not include double bills, that the Company accounts for multi-unit customers, and that other bills produced, such as final bills, late notices, re-bills, or other miscellaneous bills, are not included in the filing.

67. It is reasonable to approve an increase in the Company's reconnection fee from \$27.00 to \$42.00.

68. The connection charge of \$1,080 for water and \$1,400 for sewer for Winston Pointe Subdivision, Phase IA, recommended by the Public Staff is reasonable and appropriate.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 1–4

General Matters

The evidence supporting these findings of fact is found in the verified Application and the accompanying NCUC Form W-1, the testimony and exhibits of the witnesses, and the entire record in this proceeding. These findings are informational, procedural, and jurisdictional in nature and are not contested by any party.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 5–11

The Stipulation and Acceptance of Stipulation

The evidence supporting these findings of fact is found in the Stipulation, the testimony of both CWSNC's and the Public Staff's witnesses, the affidavit of Matthew Schellinger, and Revised Settlement Exhibits I and II.

On November 27, 2019, CWSNC and the Public Staff entered into and filed a Partial Settlement Agreement and Stipulation, which memorializes their agreements on some of the issues in this proceeding. Attached to the Stipulation is Settlement Exhibit 1, which demonstrates the impact of the Stipulating Parties' agreements on the calculation of CWSNC's gross revenue for the test year ended March 31, 2019. Thus, the Stipulation is based upon the same test period as the Company's Application, adjusted for certain changes in plant, revenues, and costs that were not known at the time the case was filed, but are based upon circumstances occurring or becoming known through the close of the expert witness hearing. In addition to the Stipulating Parties' agreements on some of the issues in this proceeding, the Stipulation provides that CWSNC and the Public Staff agree that the Stipulation reflects a give-and-take partial settlement of contested issues, and that the provisions of the Stipulation do not reflect any position asserted by either CWSNC or the Public Staff, but instead reflect compromise and settlement between them. The Stipulation provides that it is binding as between CWSNC and the Public Staff, and that it is conditioned upon the Commission's acceptance of the Stipulation in its entirety. No party filed a formal statement or presented testimony indicating opposition to the Stipulation. During the expert witness hearing in response to a question from the Commission, CLCA indicated that it has no objection to the Stipulation. Tr. vol. 9, 200–01. There are no other parties to this proceeding.

The key aspects of the Stipulation are as follows:

- **Tariff Rate Design** – The Stipulating Parties agree that rate design in this case should be based on a 50/50 ratio of fixed/volumetric revenues for the Uniform Water and BF/FH/TC Water residential customers and an 80/20 ratio of fixed/volumetric revenues for the Uniform Sewer residential customers.

- **Capital Structure** – The Stipulating Parties agree that the capital structure appropriate for use in this proceeding is a capital structure consisting of 49.10% common equity and 50.90% long-term debt at a cost of 5.36%.
- **Property Insurance Expense** – The Stipulating Parties agree to the Company's rebuttal position of \$279,912.
- **Treatment of Water Service Corporation (WSC) Rent Expense** – The Stipulating Parties agree to the Public Staff's calculation of WSC's rent expense for its Chicago, Illinois office lease as reflected in Revised Feasel Exhibit I, Schedule 3-11.
- **Water Loss Adjustment for Purchased Water Expense** – The Stipulating Parties agree upon a 20% water loss threshold for Whispering Pines, Zemosa Acres, Woodrun, High Vista, and Carolina Forest subdivisions.
- **Purchase Acquisition Adjustment (PAA) Amortization Expense Rates** – The Company agrees to the Public Staff's PAA amortization rates per Revised Feasel Exhibit I, Schedule 3-15.
- **Storm Reserve Fund and Storm Expense** – The Company agrees to rescind its request to implement its proposed Storm Reserve Fund, and to utilize the Public Staff's position per Revised Feasel Exhibit I, Schedule 3-4.
- **Application of Hurricane Florence Insurance Proceeds** – The Public Staff agrees to the Company's rebuttal position removing insurance overpayments to date from the insurer.
- **Accumulated Deferred Income Taxes (ADIT)** - The Company agrees to the Public Staff's proposed calculations of ADIT regarding unamortized rate case expense. The Stipulating Parties agree to revise ADIT for any updates made to rate case expense deferrals.
- **Deferral Accounting for Capital Investments in WWTPs** - The Stipulating Parties agree that deferral accounting treatment for post-in-service depreciation expense and carrying costs related to the Company's capital investments in WWTPs placed in service at Nags Head and Connestee Falls during the pendency of this proceeding is reasonable and appropriate.
- **Regulatory Commission Expense** - The Stipulating Parties agree to a methodology for calculating regulatory commission expense, also known as rate case expense, and agreed to update the number in Settlement Exhibit 1, Line 41, for actual and estimated costs once supporting documentation is provided by the Company. The Stipulating Parties agreed to amortize rate case expenses for a five-year period.

- **Revenue Requirement** – The Stipulating Parties agree to certain other revenue requirement issues designated as “Settled Items” on Settlement Exhibit 1, which was attached to the Stipulation and is incorporated by reference therein.

As the Stipulation has not been adopted by all of the parties to this docket, its acceptance by the Commission is governed by the standards set out by the North Carolina Supreme Court in *State ex rel. Utils. Comm’n v. Carolina Util. Customers Ass’n, Inc.*, 348 N.C. 452, 500 S.E.2d 693 (1998) (*CUCA I*), and *State ex rel. Utils. Comm’n v. Carolina Util. Customers Ass’n, Inc.*, 351 N.C. 223, 524 S.E.2d 10 (2000) (*CUCA II*). In *CUCA I*, the Supreme Court held that:

a stipulation entered into by less than all of the parties as to any facts or issues in a contested case proceeding under Chapter 62 should be accorded full consideration and weighed by the Commission with all other evidence presented by any of the parties in the proceeding. The Commission must consider the nonunanimous stipulation along with all the evidence presented and any other facts the Commission finds relevant to the fair and just determination of the proceeding. The Commission may even adopt the recommendations or provisions of the nonunanimous stipulation as long as the Commission sets forth its reasoning and makes “its own independent conclusion” supported by substantial evidence on the record that the proposal is just and reasonable to all parties in light of all the evidence presented.

348 N.C. at 466, 500 S.E.2d at 703. However, as the Court made clear in *CUCA II*, the fact that fewer than all of the parties have adopted a settlement does not permit the Court to subject the Commission’s order adopting the provisions of a nonunanimous stipulation to a “heightened standard” of review. *CUCA II*, 351 N.C. at 231, 524 S.E.2d at 16. Rather, the Court said that Commission approval of the provisions of a nonunanimous stipulation “requires only that the Commission ma[k]e an independent determination supported by substantial evidence on the record [and] . . . satisf[y] the requirements of [C]hapter 62 by independently considering and analyzing all the evidence and any other facts relevant to a determination that the proposal is just and reasonable to all parties.” *Id.* at 231-32, 524 S.E.2d at 17.

Based upon the foregoing and the entire record herein, the Commission finds that the Stipulation was entered into by the Stipulating Parties after full discovery and extensive negotiations, that the Stipulation is the product of give-and-take in settlement negotiations between CWSNC and the Public Staff, and that the Stipulation represents a reasonable and appropriate resolution of certain specific matters in dispute in this proceeding. In making this finding the Commission gives substantial weight to the testimony of CWSNC witness DeStefano and the testimony and supporting exhibits of Public Staff witnesses Henry and Feasel which support the Stipulation, and notes that no party expressed opposition to the provisions of the Stipulation. In addition when the provisions of the Stipulation are compared to CWSNC’s Application and the recommendations included in the testimony of the Public Staff’s witnesses, the Stipulation

results in a number of downward adjustments to the expenses sought to be recovered by CWSNC, and resolves issues, some of which were more important to CWSNC and, others of which were more important to the Public Staff. Therefore, the Commission further finds that the Stipulation is material evidence to be given appropriate weight in this proceeding, along with all other evidence of record, including that submitted by CWSNC, the Public Staff, CLCA, and the public witnesses who testified at the hearings.

In addition, the Commission finds that the Stipulation is a nonunanimous settlement of matters in controversy in this proceeding and that the Stipulation resolves only some of the disputed issues between CWSNC and the Public Staff. The Stipulation leaves the following Unsettled Issues to be resolved by the Commission: (1) rate of return on common equity; and (2) the deferral of expenses related to the installation of AMR meters in the Company's Fairfield Mountain and Connestee Falls service areas.

After careful consideration the Commission finds that when combined with the rate effects of the Commission's decisions regarding the foregoing Unsettled Issues, the Stipulation strikes a fair balance between the interests of CWSNC to maintain its financial strength at a level that enables it to attract sufficient capital on reasonable terms, on the one hand, and its customers to receive safe, adequate, reliable, and affordable water and sewer service at the lowest reasonably possible rates, on the other. The Commission finds that the resulting rates are just and reasonable to both CWSNC and its ratepayers. In addition, the Commission finds that the provisions of the Stipulation are just and reasonable to all parties to this proceeding and serve the public interest, and that it is appropriate to approve the Stipulation in its entirety.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 12-20

Customer Concerns and Service

The evidence supporting these findings of fact is found in the testimony of the public witnesses appearing at the hearings, in the testimony of Public Staff witness Casselberry, in the testimony and exhibits of CWSNC witnesses DeStefano and Mendenhall, and in the verified reports filed by CWSNC in response to the concerns testified to by the public witnesses at hearings.

On June 28, 2019, CWSNC filed an application for a general rate increase, which was verified by CWSNC's Financial Planning and Analysis Manager. The Application stated that CWSNC presently serves approximately 34,915 water customers and 21,403 sewer customers in North Carolina. The Company's service territory spans 38 counties in North Carolina, from Corolla in Currituck County to Bear Paw in Cherokee County.

The Commission held hearings throughout CWSNC’s service territory for the purpose of receiving testimony from members of the public, and particularly from CWSNC’s water and wastewater customers, as follows:

Hearing Date	Location	Public Witnesses
September 5, 2019	Charlotte	William Colyer, Rachel Fields, William Michael Wade, and James Sylvester
September 10, 2019	Manteo	None
October 8, 2019	Boone	None
October 9, 2019	Asheville	Chuck Van Rens, Jack Zinselmeier, Jeff Geisler, Phil Reitano, Jeannie Moore, Linda Huber, Brian McCarthy, Ron Shuping, and Steve Walker
October 14, 2019	Raleigh	Alfred Rushatz, Vince Roy, Mark Gibson, and David Smoak
October 22, 2019	Jacksonville	Danny Conner, Ralph Tridico, James C. Kraft, John Gumbel, David Stevenson, and Irving Joffe

Public Staff witness Casselberry testified that her investigation included a review of customer complaints, contact with the DEQ Division of Water Resources (DWR) and Public Water Supply Section (PWSS), review of Company records, and analysis of revenues at existing and proposed rates. Tr. vol. 8, 78. Witness Casselberry testified that she contacted the seven regional offices in North Carolina. The PWSS identified four water systems – Riverwood, Meadow Glen, Wood Trace, and Sapphire Valley – which required action by CWSNC; DWR identified three wastewater treatment plants – CLMS, Carolina Trace, and Asheley Hills – which required action by CWSNC. Witness Casselberry investigated each concern and testified that CWSNC has taken the necessary actions and that the Public Staff is satisfied that the concerns reported by PWSS and DWR have been addressed or are in the process of being resolved. Tr. vol. 8, 81.

In addition, witness Casselberry testified that she had reviewed approximately 316 consumer statements of position from CWSNC customers received by the Public Staff as a result of this proceeding. Witness Casselberry stated that the service areas represented by those submitting statements are Belvedere (1), Brandywine Bay (2), Carolina Pines (1), Carolina Trace (11), Corolla Light/Monteray Shores (1), Connestee Falls (48), Fairfield Harbour (33), Kings Grant (1), Sapphire Valley (2), The Point (161), Treasure Cove (1), Ski Mountain (1), Waterglyn (1), Woodhaven (1), and unspecified service areas (51). Tr. vol. 8, 96. She testified that all customers objected to the magnitude of the rate increase. She indicated that public witnesses’ primary concern was

that CWSNC's request for another rate increase was filed just four months after it had been granted an increase in rates in February 2019. Most of the customers in Connestee Falls said there was no justification for such a large increase, that they had to pay the base charge for service when they were not occupying their homes, and that they experienced numerous leaks and boil water advisory notices over the summer. The customers in Fairfield Harbour said that they were still recovering from Hurricane Florence and that they could not afford an increase. They also stated that the water quality was poor and that they had to install individual softeners and filter systems. Nearly all of the customers in The Point Subdivision opposed CWSNC's proposed Pilot Program. Their primary objections were that (1) customers in The Point were being penalized, and that the block rates should apply to all CWSNC customers, (2) the average consumption did not take into account customers who live on the lake and use lake water for irrigation, (3) the covenants do not allow individual wells for irrigation, and (4) the conditions and rules for landscaping would increase the average bill by approximately 30 percent if the block tiered rates were approved. Tr. vol. 8, 96–101. Customer concerns were addressed in Public Staff witness Casselberry's supplemental testimony filed on November 15, 2019.

Witness Casselberry also testified regarding service and water quality complaints registered by customers at each of the five public hearings. Tr. vol. 8, 111. She stated that she had read each of the four reports filed by CWSNC in response to the customer concerns and complaints which were included in testimony at the public hearings. Witness Casselberry testified that there were a few isolated service issues which the Company had addressed or was in the process of resolving.

After reviewing the testimony and complaints of the customers regarding water quality and hardness in the Fairfield Harbour and Bradfield Farms service areas, witness Casselberry stated CWSNC should provide an estimate of the cost of installing a central water filter system for Bradfield Farms Subdivision, Tr. vol. 8, 102–03, and the Fairfield Harbour Service Area, Tr. vol. 8, 109–110, for the homeowners' associations' consideration.

With the exception of her recommendation for Bradfield Farms Subdivision and the Fairfield Harbour Service Area, witness Casselberry had no additional comments or recommendations. Tr. vol. 8, 111. She testified that CWSNC's quality of service is good. Tr. vol. 8, 111. Witness Casselberry also testified that the quality of water meets the standards set forth by the Safe Drinking Water Act and is satisfactory. Tr. vol. 8, 111.

With regard to the concerns expressed by customers about the Company's proposed Pilot Program to test conservation rates in The Point Subdivision, the Commission acknowledges that this matter is no longer an issue in this proceeding because CWSNC withdrew its request for authority to implement its proposed Pilot Program on November 18, 2019. CWSNC stated its withdrawal of the Pilot Program was based on the Public Staff's opposition to CWSNC's proposed Pilot Program in the present case and the existence of the Commission's generic rate design proceeding in Docket No. W-100, Sub 59 (Sub 59). CWSNC noted that the Company will continue to actively

participate in the Commission's Sub 59 generic rate design proceeding to explore and consider rate design proposals that may better achieve the Company's desire for revenue sufficiency and stability, while also sending appropriate signals to consumers that support and encourage water efficiency and conservation.

Additionally, in CWSNC's November 18, 2019 filing, the Company withdrew its request for the consumption adjustment mechanism (CAM) proposed in this proceeding. CWSNC stated its withdrawal for the CAM was prompted by the Commission's initiation of a rulemaking proceeding in Docket No. W-100, Sub 61 on November 14, 2019; the Public Staff's testimony in this matter recommending that the Commission deny CWSNC's request to implement a CAM; and the Company's expectation that other water and wastewater providers will seek to have input on the implementation of any CAM guidelines. CWSNC maintained that the contested issues concerning the requested CAM are more suitable for resolution in the generic proceeding than in this rate case proceeding.

Based upon the foregoing, and after careful review of the testimony of the customers at the public hearings, the Company's reports on customer comments, the Public Staff's engineering and service quality investigation, and the late-filed exhibits submitted by CWSNC and the Public Staff, the Commission concludes that, consistent with the statutory requirements of N.C.G.S. § 62-131(b), the overall quality of service provided by CWSNC is adequate, efficient, and reasonable.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 21

Rate Base

The evidence supporting this finding of fact is found in the verified Application and the accompanying NCUC Form W-1, the testimony of Company witness DeStefano, the testimony of Public Staff witnesses Feasel and Henry, the Stipulation, and Revised Settlement Exhibits I and II.

The following table summarizes the differences between the Company's level of rate base from its Application and the amounts recommended by the Public Staff:

Item	Company Per Application	Difference	Amount Per Public Staff
Plant in service	\$217,460,239	\$20,751,845	\$238,212,084
Accumulated depreciation	(\$55,739,757)	(\$2,158,186)	(\$57,897,943)
Net plant in service	161,720,483	18,593,659	180,314,141
Cash working capital	2,467,676	(62,876)	2,404,800
Contributions in aid of construct.	(40,916,105)	645,430	(40,270,675)
Advances in aid of construction	(32,940)	0	(32,940)
Accum. deferred income taxes	(6,699,939)	704,495	(5,995,444)
Customer deposits	(304,114)	(11,333)	(315,447)
Inventory	271,956	0	271,956
Gain on sale and flow back taxes	(131,695)	(286,116)	(417,811)
Plant acquisition adjustment	(873,734)	35,856	(837,878)
Excess book value	(331)	331	0
Cost-free capital	(261,499)	0	(261,499)
Average tax accruals	125,013	(268,211)	(143,198)
Regulatory liability for EDIT	(3,941,344)	0	(3,941,344)
Deferred charges	2,252,645	(129,938)	2,122,707
Pro forma plant	17,195,228	(17,195,228)	0
Original cost rate base	<u>\$130,871,300</u>	<u>\$2,026,068</u>	<u>\$132,897,368</u>

On the basis of the Stipulation and revisions made by the Public Staff in its Revised Settlement Exhibits I and II, the Company and the Public Staff are in agreement concerning all components of rate base except for the amount of cash working capital. Therefore, the Commission finds that the uncontested adjustments to rate base recommended by the Public Staff are appropriate adjustments to be made in this proceeding.

CWSNC and the Public Staff disagree on the amount of cash working capital to include in rate base for use in this proceeding due to the unsettled issue concerning the deferral accounting treatment of the AMR meter installation projects in Fairfield Mountain and Connestee Falls. Based on the testimony of Company witness DeStefano, CWSNC disagrees with the Public Staff's recommendation to deny deferral accounting treatment for the two AMR meter installation projects. As a result of their differing positions concerning this issue and its effect on their respective recommended level of maintenance and repair expense, CWSNC and the Public Staff recommend different amounts for cash working capital to include in rate base, \$2,406,418 and \$2,404,800, respectively.

Based on the conclusions reached elsewhere in this order concerning the deferral accounting treatment for AMR meter installation projects in Fairfield Mountain and Connestee Falls, the Commission concludes that the appropriate amount for cash

working capital is \$2,404,800. Consequently, the appropriate level of rate base for combined operations for use in this proceeding is as follows:

Item	Amount
Plant in service	\$238,212,084
Accumulated depreciation	(\$57,897,943)
Net plant in service	180,314,141
Cash working capital	2,404,800
Contributions in aid of construction	(40,270,675)
Advances in aid of construction	(32,940)
Accumulated deferred income taxes	(5,995,444)
Customer deposits	(315,447)
Inventory	271,956
Gain on sale and flow back taxes	(417,811)
Plant acquisition adjustment	(837,878)
Excess book value	0
Cost-free capital	(261,499)
Average tax accruals	(143,198)
Regulatory liability for excess deferred taxes	(3,941,344)
Deferred charges	2,122,707
Pro forma plant	0
Original cost rate base	\$132,897,368

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 22

Operating Revenues

The evidence supporting this finding of fact is found in the testimony of Public Staff witnesses Feasel and Casselberry, and Company witness DeStefano. The following table summarizes the differences between the Company's level of operating revenues under present rates from its Application and the amounts recommended by the Public Staff:

Item	Company per Application	Difference	Amount per Public Staff
<u>Operating Revenues:</u>			
Service revenues	\$33,269,517	\$582,715	\$33,852,232
Miscellaneous revenues	353,280	34,212	387,492
Uncollectible accounts	(246,348)	(24,794)	(271,142)
Total operating revenues	\$33,376,449	\$592,133	\$33,968,582

Based on the Stipulation and the revisions made by the Public Staff in its Feasel Revised Exhibits I and II, the Company does not dispute the following Public Staff adjustments to operating revenues under present rates:

Item	Amount
Reflect pro forma level of service revenues	\$582,715
Adjustment to forfeited discounts	10,128
Adjustment to sale of utility property	24,084
Adjustment to uncollectible accounts	<u>(24,794)</u>
Total	<u>\$592,133</u>

For reasons discussed elsewhere in this order, the Commission has found that the adjustments listed above are appropriate adjustments to be made to operating revenues under present rates in this proceeding.

Based on the foregoing, the Commission concludes that the appropriate level of operating revenues under present rates for combined operations for use in this proceeding is as follows:

Item	Amount
Service revenues	\$33,852,232
Miscellaneous revenues	387,492
Uncollectible accounts	<u>(271,142)</u>
Total operating revenues	<u>\$33,968,582</u>

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 23-25

Maintenance and General Expenses

The evidence for these findings of fact is found in the verified Application and the accompanying NCUC Form W-1; the testimony of Public Staff witnesses Feasel, Henry, and Darden; the testimony of Company witnesses DeStefano and Mendenhall; the affidavit of Matthew Schellinger; and the Revised Settlement Exhibits I and II.

The following table summarizes the differences between the Company's requested level of maintenance and general expenses and the amounts recommended by the Public Staff:

<u>Item</u>	<u>Company Per Application</u>	<u>Difference</u>	<u>Amount Per Public Staff</u>
<u>Maintenance Expenses:</u>			
Salaries and wages	\$5,143,430	(\$193,719)	\$4,949,710
Purchased power	2,110,722	(7,679)	2,103,043
Purchased water & sewer	2,171,965	47,278	2,219,243
Maintenance and repair	2,955,315	165,620	3,120,935
Maintenance testing	546,264	(1,832)	544,432
Meter reading	206,176	0	206,176
Chemicals	713,452	(19,856)	693,596
Transportation	539,115	(4,915)	534,200
Operating expenses charged to plant	(615,663)	(49,470)	(665,133)
Outside services - other	1,219,715	(28,417)	1,191,299
Total maintenance expenses	<u>\$14,990,492</u>	<u>(\$92,991)</u>	<u>\$14,897,501</u>
<u>General Expenses:</u>			
Salaries and wages	\$2,386,901	(\$382,491)	\$2,004,409
Office supplies and other office expense	569,400	(536)	568,864
Regulatory commission expense	303,485	4,269	307,754
Pension and other benefits	1,531,096	69,062	1,600,158
Rent	392,552	(62,244)	330,308
Insurance	664,043	118,519	782,562
Office utilities	751,728	(4,058)	747,670
Miscellaneous	355,931	(137,513)	218,417
Total general expenses	<u>\$6,955,135</u>	<u>(\$394,993)</u>	<u>\$6,560,142</u>

Regulatory Commission Expense

In his January 10, 2020 affidavit, Matthew Schellinger provided an amount of \$519,416 for the actual costs incurred to date and the estimated expense to be incurred related to this rate case. Affiant Schellinger requested that the Commission approve total rate case costs of \$1,169,222 to be amortized over five years. He stated that the \$1,169,222 includes \$649,806 for unamortized rate case expense from prior proceedings plus \$519,416 related to this case. Affiant Schellinger commented that the annual amortization expense for rate case costs for this proceeding total \$233,844 (\$1,169,222 amortized over five years). Affiant Schellinger also requested that the Commission include in regulatory commission expense an annual amount of \$73,911 in miscellaneous regulatory costs for filings and compliance type activities not directly related to rate case costs. He maintained that these expenses are a direct cost of service, are not disputed, and were agreed upon between CWSNC and the Public Staff in the Stipulation. In sum, Affiant Schellinger requested that the Commission include a total annual amount of

\$307,755 in regulatory commission expense in this proceeding, consisting of rate case costs of \$233,844 and miscellaneous regulatory costs of \$73,911.

The Public Staff stated that it has reviewed the invoices and other supporting documents along with the rate case expense spreadsheet provided by CWSNC and found that the types of rate case expense in this rate case matched the nature of the expense in prior rate cases and the amount of these expenses in the current proceeding are appropriate and reasonable to be included in this rate case. The Public Staff and the Company are in agreement that the miscellaneous regulatory matters costs in the Company's books as provided in the affidavit of Matthew Schellinger should also be included as regulatory commission expense to be recovered in this rate case as a reasonable cost of service incurred by CWSNC. Therefore, in light of the foregoing the Commission finds that it is appropriate and reasonable to amortize the sum of the total rate case costs of \$519,416 for the current proceeding and the unamortized rate case cost balance of \$649,806 from the prior rate cases over five years and to include an annual level of costs in the amount of \$73,911 related to miscellaneous regulatory matters, resulting in an annual level of regulatory commission expense of \$307,755 to be recovered in this proceeding.

On the basis of the Stipulation and revisions made by the Public Staff in Henry Revised Exhibit I, Feasel Revised Exhibits I and II, and Revised Settlement Exhibits I and II, the Company and the Public Staff are in agreement concerning all adjustments recommended by the Public Staff to maintenance and general expenses except for maintenance and repair expense. Therefore, the Commission finds that the uncontested adjustments to maintenance and general expenses recommended by the Public Staff are appropriate adjustments to be made in this proceeding.

CWSNC and the Public Staff disagree on the amount of maintenance and repair expense to include in maintenance and general expenses in this proceeding due to the unsettled issue concerning the deferral accounting treatment of the AMR meter installation projects in Fairfield Mountain and Connestee Falls. Based on the testimony of Company witness DeStefano, CWSNC disagrees with the Public Staff's recommendation to deny deferral accounting treatment for the two AMR meter installation projects. As a result of their differing positions concerning this issue, CWSNC and the Public Staff recommend differing amounts for maintenance and repair expense, \$3,133,882¹⁰ and \$3,120,935, respectively. The Company included an amount of \$12,947 (\$64,736 amortized over five years) in maintenance and repair expense related to its requested deferral accounting treatment for the two AMR meter installation projects whereas the Public Staff did not.

Based on the conclusions reached elsewhere in this Order concerning the deferral accounting treatment for the AMR meter installation projects in Fairfield Mountain and

¹⁰ See page 160 of the Company's proposed order filed on January 10, 2020, in these dockets which includes the agreed-upon pro forma adjustments per the Stipulation and CWSNC's recommendations concerning the two unsettled issues in this rate case.

Connestee Falls, the Commission concludes that the appropriate level of maintenance and repair expense for combined operations for use in this proceeding is \$3,120,935.

Based upon the foregoing, the Commission concludes that the appropriate level of maintenance and general expenses for combined operations for use in this proceeding are as follows:

<u>Item</u>	<u>Amount</u>
<u>Maintenance Expenses:</u>	
Salaries and wages	\$4,949,710
Purchased power	2,103,043
Purchased sewer	2,219,243
Maintenance and repair	3,120,935
Maintenance testing	544,432
Meter reading	206,176
Chemicals	693,596
Transportation	534,200
Operation exp. charged to plant	(665,133)
Outside services - other	1,191,299
Total maintenance expenses	<u>\$14,897,501</u>
<u>General Expenses:</u>	
Salaries and wages	<u>\$2,004,409</u>
Office supplies and other office expense	568,864
Regulatory commission expense	307,754
Pension and other benefits	1,600,158
Rent	330,308
Insurance	782,562
Office utilities	747,670
Miscellaneous	218,417
Total general expenses	<u>\$6,560,142</u>

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 26-27

Storm Reserve Fund and Normalized Storm Damage Expense

The evidence for these findings of fact is found in the verified Application and the accompanying NCUC Form W-1, the testimony of Public Staff witnesses Feasel and Henry, and the Stipulation and Revised Settlement Exhibits I and II.

In the Company's Application, it requested to establish a storm reserve fund to support extraordinary O&M costs resulting from damages sustained in severe storms such as Hurricane Florence. CWSNC witness DeStefano testified that CWSNC proposes to create a monthly, flat surcharge for each active customer's water and sewer service bill until the reserve threshold of \$250,000 is reached. Witness DeStefano commented that CWSNC proposed to collect a monthly surcharge of \$0.42 per customer per month

based on the threshold of \$250,000. In addition, this is the first general rate case proceeding in which CWSNC seeks Commission approval of a normalized level of storm expenses to be included in base rates. In NCUC Form W-1, Item 10, Schedule 24, the Company used three years (2016–2018) to calculate the average storm cost requested to be recovered in this rate case. Witness DeStefano maintained that the storm reserve fund would only be utilized if the Company’s storm costs for the last 12 months exceed the level of normalized storm expenses included in the base rate revenue requirement.

Public Staff witness Henry testified that in addition to the storm reserve fund, CWSNC applied to include in rates a normalized level of storm expense calculated using a three-year average of actual storm expenses incurred, excluding Hurricane Florence expenses. Witness Henry stated that ten years has historically been used to calculate the average storm cost because a ten-year time period would include some years in which storm costs were high and others in which they were low, resulting in a more reasonable average than that which would result from using only the three most recent years. Additionally, witness Henry stated that using a ten-year time period has been approved by the Commission in prior decisions. For the reasons set forth in his prefiled testimony, witness Henry recommends that the Commission deny CWSNC’s request for a storm reserve fund. In the Stipulation the Company agreed to rescind its request to implement its proposed storm reserve fund and also agreed to the Public Staff’s use of a ten-year average for storm costs. The Stipulating Parties have agreed to a normalized level of storm expenses in the amount of \$34,567, to be included in maintenance and repair expense.

Therefore, in light of the foregoing the Commission concludes that it is appropriate and reasonable to continue its historical practice of using a ten-year time period as the standard for calculating average annualized storm costs to be recovered in the Company’s rates as an ongoing level of expense. Consequently, the appropriate annual level of normalized storm costs that should be included in CWSNC’s rates in this proceeding is \$34,567, as set out in the Stipulation.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 28-30

Hurricane Florence Expense

The evidence supporting these findings of fact is found in the Company’s Petition for Accounting Order in Sub 363, the testimony of Company witness DeStefano, the testimony of Public Staff witnesses Henry and Feasel, the Stipulation, Settlement Exhibit I, and Revised Settlement Exhibits I and II in Sub 364.

On January 17, 2019, CWSNC filed a Petition for an Accounting Order to Defer Unplanned Incremental Hurricane Florence Storm Damage Expenses, Capital Investments, and Revenue Loss in Sub 363 requesting an accounting order authorizing it to establish a regulatory asset and defer until the Company’s next general rate case costs incurred in connection with damage to the Company’s water and wastewater systems resulting from the impacts of Hurricane Florence. Additionally, the Company

sought Commission approval to defer O&M costs, lost revenues, and depreciation expense on its capital investments. According to the Sub 363 Petition, CWSNC's facilities suffered extensive damage due to the storm, particularly in the coastal region of the Company's service territory.

CWSNC stated that it incurred extraordinary, unplanned operating and capital costs, as well as lost revenues from customers who were forced to disconnect their service due to damage to their homes. Additionally, the Company provided invoices to the Public Staff showing that it has incurred, to date, \$146,773 in storm-related incremental O&M expenses, \$582,570 in capital investments, and \$46,320 in estimated revenue loss. In its comments filed on April 4, 2019, the Public Staff did not object to CWSNC's recovery of a substantial portion of its 2018 verified storm O&M costs and deferral accounting treatment for the incremental O&M costs related to Hurricane Florence; however, it opposed CWSNC's request to defer depreciation expense associated with the Company's capital investments and lost revenues. Additionally, the Public Staff recommended that the amortization period begin as of October 2018, the date of the storm, and not begin with the effective date of the Company's next general rate case, which is the instant case, Sub 364, filed on June 28, 2019.

After considering prior cases and the tests applied by the Commission, the Public Staff determined that "the damage to CWSNC's system from Hurricane Florence was greater than that caused by any other storm in the Company's history, which will affect the Company's rate of return on common equity. The Public Staff concluded that this is an exceptional circumstance justifying some deferral of costs." Public Staff's Sub 363 Comments. However, in opposing CWSNC's request to defer depreciation expense associated with the Company's capital costs and lost revenues, the Public Staff cited the Commission's order in the last Duke Energy Progress, LLC. (DEP), general rate case, Docket No. E-2, Sub 1142, where DEP's request for deferral of depreciation expense, return on the undepreciated balance of capital costs, and the carrying costs on the entirety of the deferred costs was denied.

The Public Staff, therefore, recommends the following:

- (a) that the Commission approve a deferral of \$146,773 in 2018 Hurricane Florence storm O&M expenses, but no deferral of CWSNC's depreciation expense or lost revenues;
- (b) that CWSNC be required to amortize the costs deferred over a three-year period beginning in October 2018;
- (c) that upon final determination of the actual amount of costs of Hurricane Florence the Company be required to file a final accounting of said costs with the Commission for review and approval;
- (d) that approval of this accounting procedure is without prejudice to the right of any party to take issue with the amount of or the ratemaking treatment accorded these costs in any future regulatory proceeding; and
- (e) that any applicable insurance proceeds received by CWSNC will be used to offset the deferred O&M expenses.

As shown in Settlement Exhibit I, witness Feasel calculated a total deferral amount of \$146,773 for the incremental O&M costs related to the 2018 storm costs with an amortization period of three years beginning in October 2018, using the procedure recommended by witness Henry. The Company and the Public Staff agree to the amount of Hurricane Florence storm-related costs included in Settlement Exhibit I as noted in the Stipulation.

The Commission finds and concludes that it is just and reasonable for the Company to receive deferral accounting treatment for the incremental O&M costs amounting to \$146,773 in Hurricane Florence storm costs and that these costs should be amortized over three years. Consequently, it is appropriate to include in CWSNC's maintenance and repair expense Hurricane Florence storm-related costs in the amount of \$48,924, as set out in the Stipulation.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 31-41

Deferral of WWTP Projects and AMR Meter Installation Projects

The evidence for these findings of fact is found in the record of Sub 365, including the initial comments of the Public Staff and the reply comments of the Company; the testimony of Company witnesses DeStefano and Mendenhall; the testimony and exhibits of Public Staff witnesses Henry, Feasel, and Junis; the Stipulation, and Revised Settlement Exhibits I and II.

Summary of the Evidence

On June 28, 2019, contemporaneously with the Sub 364 rate case application, the Company filed a Petition for an Accounting Order to Defer Post-In-Service Depreciation and Financing Costs Relating to Major New Projects in Sub 365.

On September 20, 2019, the Public Staff filed comments, and on October 21, 2019, CWSNC filed reply comments. On November 15, 2019, the Company filed a motion to consolidate the Sub 365 docket with the Sub 364 rate case proceeding, which was granted by Commission order dated November 19, 2019.

In its Sub 365 petition, CWSNC describes four major new projects that were in progress and would be placed in service after the close of the test year but during the pendency of this general rate case proceeding. The Company requests authority to defer the incremental post-in-service depreciation expense and financing costs of those projects and then to recover those costs in the rates approved in Sub 364, amortized over a five-year period. The four projects are:

- (a) Connestee Falls WWTP in Buncombe County;
- (b) Nags Head WWTP in Dare County;
- (c) Fairfield Mountain AMR meters installed in Transylvania County; and
- (d) Connestee Falls AMR meters installed in Buncombe County.

CWSNC witness DeStefano's testimony explained that the accounting and cost recovery treatment of these projects would have a material impact on the Company's ability to earn its authorized return from its last rate case. The Company requests deferral of incremental post-in-service depreciation expense and financing costs on these four projects from their respective in-service dates until the projects are included for recovery in base rates in this case.

Company witness Mendenhall described the four projects. He stated that the Connestee Falls WWTP project involved the installation of a "sequencing batch reactors" treatment facility which replaced a 300,000 gallons per day (gpd) concrete plant installed in the early 1970s. He noted that the plant is located in the mountains and exposed to winter weather, including cold, ice, and snow. These conditions led to the serious erosion of exposed areas of concrete, most significantly the above-the-waterline walls and walkways, due to years of "freeze/thaw" cycles. Witness Mendenhall maintained that the concrete deterioration had reached the point of "end of life" of the asset and that the old plant presented a high risk of failure. He stated that the build-out needs of the community require 460,000 gpd of wastewater treatment capacity and that the new plant was built adjacent to the existing plant. He commented that the cost of the project was \$7,177,326 and that it was placed in-service on July 31, 2019.

Witness Mendenhall testified that the Nags Head WWTP project consisted of the installation of a new membrane treatment facility to allow for effluent disposal below permitted nitrate levels in groundwater monitoring wells. He explained that the purpose of this project was to modify the existing Aeromod 0.400 million gallon per day (mgd) plant with membrane filtration to provide reuse-quality effluent to meet groundwater nitrate and total dissolved solids (TDS) compliance testing limits. Witness Mendenhall noted that in 2018, the Division of Water Quality, DEQ, issued a Notice of Violation requiring the plant to comply with current groundwater testing limits of 500 mg/L for TDS and 5 mg/L for nitrates. He stated that the previous plant met the wastewater treatment plant effluent limits but was unable to meet the newly imposed groundwater limits for the monitoring wells. Witness Mendenhall maintained that had the new facility not been constructed, the risk of imposition of severe penalties or a consent decree was high. He noted that the cost of the project was \$6,876,116, and it was placed in-service on May 31, 2019.

Witness Mendenhall further stated that in 2019, CWSNC continued to expand its AMR meter footprint in its mountain systems. He commented that approximately 2,500 AMR meters were installed in the Connestee Falls and Fairfield Mountain Subdivisions. Witness Mendenhall testified that benefits of AMR meter technology to customers and the Company include: (1) customer satisfaction with data and billing accuracy; (2) improved customer service; (3) reduction in re-read/re-billing; (4) employee safety, especially during hazardous weather events; (5) replacement of inaccurate meters which can improve non-revenue water percentages; and (6) customer interaction with respect to personal consumption habits and trends. He noted that while AMR technology would be beneficial to CWSNC customers across the state, the mountain area systems, in particular, benefit due to the extreme weather events and related safety hazards that are common in this region. Witness Mendenhall testified that the Connestee Falls and

Fairfield Mountain AMR meter installation projects were completed by July 31, 2019, at a total cost of \$880,209.

At the time this rate case and CWSNC's deferral accounting Petition were filed Company witness DeStefano estimated that implementing these four projects would create a material drag on the consolidated Company's earned rate of return on common equity of 193 basis points. Witness DeStefano testified that the Company included in its rate case filing both a calculation of the deferral balances and proposed amortizations of the deferrals, as well as a pro forma adjustment relating to O&M savings that will result from the implementation of the AMR meter projects¹¹. Public Staff witness Darden confirmed in her testimony that the Company included in this rate case proceeding a pro forma adjustment of \$21,000 to remove the meter reading expense for the Fairfield Mountain and Connestee Falls water systems because AMR meters do not require an operator to read each meter individually.

According to Public Staff witness Henry, all of the foregoing projects were completed and in service as of the date of the expert witness hearing as verified by Public Staff witness Casselberry, and final invoices were reviewed by the Public Staff. Tr. vol. 8, 172.

In its Sub 365 comments, the Public Staff recommended that the requested deferral accounting treatment with respect to the cost of the WWTPs at Nags Head and Connestee Falls be granted and that the requested deferral accounting treatment with respect to the AMR meters installed in Fairfield Mountain and Connestee Falls be denied in its entirety.

The Public Staff commented that in its Order Approving Deferral Accounting with Conditions in Docket No. E-7, Sub 874, the Commission stated:

[T]he Commission has historically treated deferral accounting as a tool to be allowed only as an exception to the general rule, and its use has been allowed sparingly. That is due, in part, to the fact that deferral accounting, typically, provides for the future recovery of costs for utility services provided to ratepayers in the past; and . . . the longer the deferral period, the greater the likelihood that the ratepayers who are ultimately required to pay rates including the deferred charges, which are related to resources consumed by the utility in providing services in earlier periods, may not be the same ratepayers who received the services. The Commission has also been reluctant to allow deferral accounting because it, typically, equates to single-issue ratemaking for the period of deferral, contrary to the well-established, general ratemaking principle that all items of revenue and costs germane to the ratemaking and cost-recovery

¹¹ See NCUC Form W-1, Item 10, Schedules 26 and 34, filed June 28, 2019.

process should be examined in their totality in determining the appropriateness of the utility's existing rates and charges.

Order Approving Deferral Accounting with Conditions, *Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer Certain Environmental Compliance Costs and the Incremental Costs Incurred From the Purchase of a Portion of Saluda River's Ownership in the Catawba Nuclear Station*, No. E-7, Sub 874, at 24 (N.C.U.C. Mar. 31, 2009) (DEC Sub 874 Order).

In addition the Public Staff noted that in its Order Approving in Part and Denying in Part Request for Deferral Accounting in Docket No. E-7, Sub 1029, the Commission stated, "In determining whether to allow deferral requests, the Commission has consistently and appropriately based its decision on whether, absent deferral, the costs in question would have a material impact on the company's financial condition, and in particular, the company's achieved level of earnings." Order Approving in Part and Denying in Part Request for Deferral Accounting, *Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer Certain Capital and Operating Costs Incurred for the Advanced Clean Coal Cliffside Unit 6 Steam Generating Plant, the Dan River Natural Gas Combined Cycle Generating Plant, and the Capacity-Related Modifications at the McGuire Nuclear Generating Plant*, No. E-7, Sub 1029, at 12-13 (N.C.U.C. Apr. 3, 2013).

Thus, the Public Staff maintained that the Commission's receptivity to deferral requests is not unlimited or without regard for traditional ratemaking principles. Rather, the Public Staff stated that the Commission requires a clear and convincing showing that the costs in question were of an unusual or extraordinary nature and that, absent deferral, the costs for which deferral was requested would have a material impact on the Company's financial condition.

In determining whether to grant a deferral request the Public Staff noted that the Commission analyzes the impact the costs would have on currently achieved earnings of the utility. The Public Staff stated that the appropriate test and criteria are as follows:

The impact on earnings, typically, has been measured and assessed in terms of ROE, considered in conjunction with (1) the return on equity (ROE) realized and (2) the company's currently authorized ROE. Also . . . current economic conditions; the Company's need for new investment capital; and the impact that the Commission decision will have on future availability and cost of such capital are also relevant to the appropriate resolution of matters of this nature. Additionally, whether the company has requested or is contemplating requesting a general rate increase and the timing, or proposed timing, of the filing of such a request is also pertinent.

DEC Sub 874 Order at 26.

The Public Staff stated in its Sub 365 comments that it had evaluated the deferrals requested in CWSNC's petition against the above criteria. Based on these criteria and

other Commission decisions, the Public Staff supported deferral accounting treatment for the costs related to the WWTP projects at Nags Head and Connestee Falls. The Public Staff based its recommendation on the fact that (1) costs for the WWTPs were related to major construction projects that, at the time the Sub 365 comments were filed, were not yet in service but expected to be completed and in operation prior to the date of the expert witness hearing in this general rate case; (2) the deferral accounting request was made contemporaneously with the filing of the rate case application; and (3) the deferral period would not be so long as to cause undue concern that the ratepayers who pay rates including the deferred WWTP costs during the deferral period may not be the same ratepayers who receive service from the WWTPs. Sub 365 Comments at 6–7. Additionally, the Public Staff stated that “the impact of the costs, if not deferred, on the Company’s rate of return on common equity of 9.75% approved in the Sub 360 Rate Case, will be significant. Without deferral, the Company’s earnings can be expected to decline due to the WWTPs becoming plant in service.” *Id.* at 7. Thus, the Public Staff contended that the WWTPs at Nags Head and Connestee Falls presented the kind of circumstances in terms of nature, impact, and timing for which deferral accounting treatment is appropriate.

Moreover, as evidenced by the Stipulation filed on November 27, 2019, the Company and the Public Staff are in agreement that the Company’s request to defer incremental post-in-service depreciation expense and financing costs of the WWTPs at Nags Head and Connestee Falls is appropriate and have agreed that the Company should be authorized to defer its costs of \$1,098,778 related to its WWTPs, and these costs should be amortized over five years, for an annual amount to be included in rates of \$219,756.

With respect to the Public Staff’s recommendation that the Commission deny deferral accounting treatment for the AMR meters installed in Fairfield Mountain and Connestee Falls, the Public Staff stated it used the same criteria for evaluating the Company’s request for deferral of the WWTPs and the AMR meter costs and concluded that CWSNC’s request for deferral of the AMR meter costs should be denied. Witness Henry contended that CWSNC failed to make a clear, complete, and convincing showing, in view of the entire record, that the costs of the AMR meters are of an unusual or extraordinary nature and, absent deferral, will have a material impact on the Company’s financial condition. In his direct testimony, witness Henry referred the Commission to the Public Staff’s initial comments filed on September 20, 2019 in Sub 365.

In its Sub 365 initial comments, the Public Staff contended that meter replacement of any kind (AMR, AMI, traditional, etc.) is not an extraordinary or unusual project but should be considered routine and as part of a properly planned and managed meter replacement program. The Public Staff stated that water meters have an industry recognized 10- to 20-year useful life before degradation of functionality and accuracy necessitate replacement. Additionally, the Public Staff stated that CWSNC has water meters in service that range in age and condition, and that it is not unusual for a water and sewer utility to undertake, during one time period, to replace a large number of aged meters in an entire subdivision or service area because doing so promotes efficiency of

time and cost. Due to the nature of meter replacement being an expected and usual occurrence, the Public Staff stated that the only different or unusual aspect of the Company's replacement project is the increased cost of the new AMR meters over the cost of analog meters. The Public Staff further noted that although the Company stated that the upgraded technology will benefit the Company and the customers, the Company's decision to upgrade does not change the nature of the typical and expected meter replacement project. The Public Staff maintained that the increased cost of AMR meters and the number of meters replaced is the result of management decisions within CWSNC's control and a failure of the Company to implement a systematic and measured meter replacement program.

On cross-examination witness Henry confirmed that the Public Staff's accounting investigation did not raise any prudence issues with respect to the costs incurred by the Company to complete the AMR meter installation projects, that the Public Staff did not recommend any significant disallowance of any part of these costs for ratemaking purposes, that this is the third rate case in which the Company has included costs for AMR meters for its mountain systems, and that the Public Staff did not raise any objections or questions about the prudence of the installations or of the costs of prior AMR meter installations in the previous two cases. He also agreed that deferred accounting is one way to address the issue of regulatory lag faced by a utility.

Further, witness Henry agreed that the \$22 million in additional investment made by the Company since its last rate case is a significant amount of investment of capital for a company the size of CWSNC and that those investments result in regulatory lag, depending on the timing of the investments and when those investments are incorporated for recovery in rates. He also updated his estimate of earnings erosion that would occur if CWSNC's request for deferral of costs related to AMR meter installation projects is denied based upon the Company's updated project costs. He testified that the Company's rate of return on common equity for the Uniform Water Rate Division would be negatively impacted by 24 basis points if the Commission denies deferral accounting treatment for the AMR meter installation projects. Witness Henry testified that he added the AMR meter installation projects to the rate case model that was used to calculate the gross revenue and overall rate of return allowed by the Commission in the Sub 360 Rate Order. Witness Henry stated that by including the AMR meter installation projects in that model for the Uniform Water Rate Division the rate of return on common equity granted in the Sub 360 case was decreased from 9.75% to 9.51%, a decrease of 24 basis points. Tr. vol. 8, 180. Witness Henry maintained that it was appropriate to evaluate the rate of return on common equity impact at the Rate Division level because CWSNC has four separate rate divisions: Uniform Water, Uniform Sewer, BF/FH/TC Water, and BF/FH Sewer. He stated that each of these rate divisions has a separate rate base, revenues, expenses, and rate of return. Tr. vol. 8, 217-18. Witness Henry further stated that rates have not been established on a total company basis in this rate case nor in prior rate cases filed by CWSNC.

Witness Henry agreed that, in addition to the basis point impact on rate of return on common equity, the Commission has considered the actual earned rate of return on

common equity of the utility requesting deferral accounting when addressing whether non-deferral of project costs would have a material negative impact on a company's financial condition. Further, he agreed that the Commission considers deferral requests on a case-by-case basis.

On cross-examination Public Staff witness Junis expanded upon witness Henry's conclusion that the Company's AMR meter installation projects did not meet the Commission's criteria for deferral accounting. He maintained that the projects were not unusual or extraordinary because they were the result of a business choice by the Company to install AMR meter technology. Tr. vol. 8, 191. He stated that the Company could have installed traditional meters rather than AMR meters. Witness Junis testified that meter replacement should be a part of normal business. Further, he stated that AMR meters are not providing service to customers or improving service to customers and thus they are not integral to providing service. Tr. vol. 8, 198. Witness Junis distinguished AMR meters from new electricity generation investments or wastewater treatment plant investments, stating that the latter are integral to providing quality service. *Id.*

Witness Junis discounted CWSNC's claim that the Company is underearning because the underearning took place primarily under previously set rates, before the current rates were established by the last rate order in Sub 360. Tr. vol. 8, 205. Witness Junis contended that for this reason, the test period would not be the "proper window to look at when considering are they under-earning or over-earning" for purposes of the Commission's test to determine whether deferral accounting is appropriate. Tr. vol. 8, 205–06. He testified that the utility decides when it files rate cases; the Company's management decides how much consequence of regulatory lag it can accept and financially tolerate between rate cases. Tr. vol. 8, 195.

On cross-examination, witness Junis acknowledged that the Public Staff's position is that AMR meter installation projects are not eligible for cost recovery in WSIC proceedings because the WSIC statute calls for "in-kind" replacements. Witness Junis testified that the Public Staff does not consider AMR meters as in-kind with regard to differing kinds of meters. Tr. vol. 8, 195–96. He further testified that both deferral accounting and the WSIC and SSIC statute minimize regulatory lag for cost-recovery purposes. He agreed that the fact that the AMR meter installation projects do not qualify for WSIC treatment is worth considering in the context of a deferral accounting request. However, he testified that it should not be a major factor in the determination and ultimately this fact did not change the Public Staff's position that deferral should be denied.

Witness DeStefano presented rebuttal testimony explaining the appropriateness of deferral accounting treatment for the Company's two AMR meter installation projects. First, he testified that major technological upgrades such as the Company's AMR meter projects are the type of projects for which deferral accounting is appropriate. He noted that the Company's AMR meter program involves the mass replacement and technological upgrade of aged analog meters in certain targeted geographical areas, as opposed to the typical individual meter replacements that occur due to aging or damaged

individual meters. He emphasized that this AMR meter program differs dramatically from individual and routine meter replacements in scope, scale, purpose, and financial impact. Witness DeStefano generally testified that the large-scale meter replacement at issue was undertaken to improve service through efficiencies, safety, and advanced technology, and that the project benefitted customers by saving some costs associated with manual meter reading and reducing system water loss. He further testified that the Company would face significant adverse impact if either the four projects subject to the petition to defer or the AMR meter projects alone were not afforded deferral accounting treatment. He explained that the Company's current overall rate of return of 7.75% authorized by the Commission in Sub 360 was not being achieved and that the Company's consolidated actual earned overall return during the test year for the instant rate case was only 3.69%.

Witness DeStefano maintained that the Public Staff's proposed rejection of deferral accounting for the two AMR meter installation projects, as well as the inability of the Company to recover the costs of depreciation and a return on the full investment of AMR meters in a WSIC filing, has the effect of significantly penalizing the Company through denial of timely cost recovery for investments in modernizing its water system operations. Witness DeStefano contended that if the Company's cost recovery for AMR meters is limited solely to a final decision in a general rate case, with no interim deferral accounting, the Company's earnings will be materially affected to its detriment. He reported that other state regulatory commissions have authorized deferral accounting in connection with meter replacement projects although he did not state whether such deferrals related specifically to the deferral of post-in-service depreciation expense and carrying costs from the AMR meter replacement projects in-service dates until the projects are included for recovery in base rates as requested by CWSNC in its petition.

Witness DeStefano urged the Commission to consider the collective financial impact of the four projects, noting that the Commission has previously considered projects on a collective basis when making deferral accounting determinations. Witness DeStefano commented that in the DEC Sub 874 Order, the Commission authorized a utility to use deferred accounting combining costs for two projects, wherein it allowed deferral accounting for both an environmental compliance cost project and the purchase of a portion of a nuclear facility on the grounds that the authorized rate of return on common equity would be eroded due to the rate of return on common equity impact of costs of 114 basis points — 67 for the environmental costs and 47 points for the facility purchase. In its reply comments CWSNC maintained that when considering the four major new projects together, the financial impact to the total Company earnings would be materially adverse, having a rate of return on common equity impact of 187 total basis points.¹²

¹² See updated Schedule 1 attached to CWSNC's reply comments filed on October 21, 2019 in Sub 365. In its Petition filed on June 28, 2019 CWSNC calculated a rate of return on common equity impact of 193 basis points for the four major new projects on a total Company basis.

Finally, witness DeStefano argued that even if the Commission were to evaluate the WWTP and the AMR meter projects separately, the rate of return on common equity impact of the AMR meter costs would still have an adverse material effect on the Company's earnings, and, thus, deferral accounting for the meter projects is merited – particularly given the Company's current underearning position. Witness DeStefano stated that given the Company's size and current underearning status, a 20-basis point AMR meter impact for the Uniform Water Rate Division¹³ is unquestionably material to the Company.

During cross-examination Company witness DeStefano was questioned about Public Staff DeStefano Cross-examination Exhibit 1, which contained witness DeStefano's responses to Public Staff Data Request No. 81. Witness DeStefano confirmed that the Company had sought and received rate recovery in its Docket No. W-354, Sub 344 (Sub 344) rate case for AMR meter installation projects that occurred in 2015 in seven systems. The evidence presented confirmed that the Company's Sub 344 rate increase included the costs of 1,157 AMR meters for a total cost of over \$1.2 million, and in the Company's Sub 356 rate case, CWSNC received rate recovery for AMR meter installation projects in three systems, including 2,440 meters, for a total cost of over \$1.8 million. Tr. vol. 9, 158–59. Witness DeStefano also confirmed that the Company planned to complete eight similar projects over the next four years, including nearly 4,000 AMR meter replacements. Witness DeStefano further confirmed that the Company has already completed ten AMR meter projects, including 3,597 meters at a total capital cost of over \$3 million, prior to the two projects presented in this case at a cost of less than \$900,000.

Upon further questioning by the Public Staff witness DeStefano explained why CWSNC requested deferral accounting for two AMR meter projects at issue, but not for its previous AMR meter projects. He explained that the AMR meter projects currently being made are part of a much larger overall capital investment by the Company. He noted that in prior years overall capital investments made by the Company were in the \$10 million per year range, versus \$20 million invested in the current year. As a result, according to witness DeStefano, the deferral accounting request is due in part to the additional regulatory lag impact being experienced by the Company beyond the impact of the AMR meter projects alone. Additionally, he testified that the two AMR meter installation projects for which deferral accounting treatment is currently requested are larger than every meter system previously installed.¹⁴ He explained that installing AMR meters in these two systems in this one year and trying to gain the efficiencies of completing the projects this year increases the financial implications to the Company and the significance of the projects to the Company. In summary witness DeStefano testified that with the magnitude of the capital spending CWSNC anticipates over the next few

¹³ During the expert witness hearing, witness DeStefano agreed with Public Staff witness Henry's calculation of a 24-basis point negative impact on CWSNC's earned rate of return on common equity for the Uniform Water Rate Division if deferral accounting treatment for the AMR meter projects is not approved by the Commission.

¹⁴ Company witness Mendenhall added that the 2,500 AMR meters at issue represent about 40% of the total AMR meters installed and about 8% of CWSNC's total meters in service in the State.

years to address aging system needs, the Company is looking for ways to mitigate the effect of regulatory lag on earned returns.

Discussion and Conclusions

In its Sub 365 Petition CWSNC has requested that the Commission enter an accounting order allowing the Company to defer certain post-in-service costs that were incurred in connection with two WWTP projects and two AMR meter installation projects. The related costs for which the Company seeks deferral include the incremental post-in-service depreciation expense and cost of capital (financing costs) from their respective in-service dates until the projects are included for recovery in base rates in this case. According to the evidence of record, the amounts of such costs with respect to the WWTP projects and the AMR meter installation projects are \$1,098,778 and \$64,736, respectively. The Company contends that the financial impact of these costs is material and would, absent deferral, equate to a significant basis point reduction in the Company's rate of return on common equity. Evidence submitted by the Public Staff confirmed that such projects when included in plant in service would individually equate to a 434-basis point rate of return on common equity reduction for the WWTPs and a 24-basis point rate of return on common equity reduction for the AMR meter installation projects for the Uniform Sewer Rate Division and the Uniform Water Rate Division, respectively. No party has suggested that either the WWTP projects or the AMR meter installation projects are imprudent in any way. Moreover, the Company and the Public Staff are in agreement regarding the amount of costs included in plant in service in this proceeding for the WWTP projects and the AMR meter installation projects.

Under the Company's proposal the costs in question would not be charged against revenues realized during the accounting period in which the costs were actually incurred. Rather, such costs would be deferred and accumulated in a regulatory asset account. As a result, the deferred costs, in effect, would be specifically reserved for recovery prospectively. The period over which the costs would be accumulated in a regulatory asset account would begin when the assets were placed in service and end on the date the Company is authorized to begin charging rates reflecting the inclusion of the WWTPs and the AMR meter installation projects in CWSNC's water and wastewater cost of service. Consequently, approval of CWSNC's deferral and cost recovery proposal would ultimately result in a level of rates, to be charged prospectively, that would specifically include an allowance providing for the recovery of the present deferred costs. On the other hand, if the request for deferral is denied, the Company would then be required to recognize the costs for which it seeks deferral as items of expense in the period in which they were incurred. In this instance, the Company would then be required to recognize those costs during a period in which it contends it is already significantly under-recovering its Commission-authorized return.

Deferral accounting should only be used sparingly as an exception to the general rule that all items of revenue and costs germane to the ratemaking and cost-recovery process should be examined in their totality in determining the appropriateness of the utility's existing rates and charges. DEC Sub 874 Order at 24. Deferral is not favored, in

part, because deferral accounting typically provides for the future recovery of costs for utility services provided to ratepayers in the past. The Commission has also been reluctant to allow deferral accounting because it typically equates to single-issue ratemaking for the period of deferral. *Id.* The Commission acknowledges that considering an increase in one or a few expense items in isolation, without considering reductions in other costs, brings with it the increased risk of over-recovery. However, the Commission gives significant weight in this instance that the consolidation of the Sub 365 petition for deferral accounting with the Sub 364 general rate case means that the concern regarding single-issue ratemaking and the related risk of such over-recovery should be reduced and of lesser concern because all revenues and expenses will have been examined close in time to any possible deferral.

While deferral accounting must not be used routinely or frequently, the Commission has found that an exception can be made when the costs at issue “were reasonably and prudently incurred, unusual or extraordinary in nature, and of a magnitude that would result in a material impact on the Company’s financial position (level of earnings).” Order Denying Request to Implement Rate Rider and Schedule Hearing to Consider Request for Creation of Regulatory Asset Account, *Application of Duke Energy Carolinas, LLC, for Approval of Rate Rider to Allow Prompt Recovery of Costs Related to Purchases of Capacity Due to Drought Conditions*, No. E-7, Sub 849, at 19 (N.C.U.C. June 2, 2008) The Commission has, over the years, on infrequent but appropriate occasions, approved requests proposing the use of deferral accounting. Such requests, by necessity, must be examined and resolved on a case-by-case fact-specific basis and will be approved only where the Commission is persuaded by clear and convincing evidence that the costs in question are unusual or extraordinary in nature and that, absent deferral, would have a material impact on the utility’s financial condition. *Id.* See also, Order Approving Deferral Accounting with Conditions, *Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer Certain Environmental Compliance Costs and the Incremental Costs Incurred From the Purchase of a Portion of Saluda River’s Ownership in the Catawba Nuclear Station*, No. E-7, Sub 874 (N.C.U.C. Mar. 31, 2009); Order Approving Deferral Accounting, *Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer Certain Capital and Operating Costs Incurred for the Buck Natural Gas Combined Cycle Generating Plant and the Bridgewater Hydro Generating Plant*, No. E-7, Sub 999 (N.C.U.C. June 20, 2012) (DEC Sub 999 Order); Order Approving Deferral and Amortization, *Request by Duke Power, A Division of Duke Energy Corporation for Approval of Accounting Treatment*, No. E-7, Sub 776 (Dec. 28, 2004).

In determining whether the costs sought to be deferred or the events or circumstances leading to the costs are of such an unusual or extraordinary nature as to justify an exception to the rule against allowing deferral accounting treatment, the Commission historically examines the record for clear and convincing evidence that the costs in question represent major non-routine, infrequent, non-regularly occurring investments of considerable complexity and significance or were beyond the control of the utility such as storm costs or new operating requirements/standards imposed by newly-enacted legislation or other governmental action. See, Order Approving Deferral Accounting, *Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer*

Certain Environmental Compliance Costs at Unit 5 of the Cliffside Steam Station, No. E-7, Sub 966 at 10 (N.C.U.C. June 27, 2011); *Order Ruling on Petition*, Petition of Duke Energy Carolinas, LLC, for an Accounting Order to Defer 2009 and 2010 Non-Fuel Energy Costs Excluded from Cost Recovery in the Commission’s August 6, 2010 Order in Docket No. E-7, Sub 934, No. E-7, Sub 967, at 14-15 (N.C.U.C. June 14, 2011); *Order Approving in Part and Denying in Part Request for Deferral Accounting*, Petition of Duke Energy Carolinas, LLC for an Accounting Order to Defer Certain Capital and Operating Costs Incurred for the Advanced Clean Coal Cliffside Unit 6 Steam Generating Plant, the Dan River Natural Gas Combined Cycle Generating Plant, and the Capacity-Related Modifications at the McGuire Nuclear Generating Plant, No. E-7, Sub 1029, at 13, 15 (N.C.U.C. April 3, 2013); *Order Adopting and Amending Rules, Rulemaking Proceeding to Implement G.S. 62-110.8*, No. E-100, Sub 150 at 22 (November 16, 2017).

In certain circumstances the Commission may find that the magnitude or level of the costs requested for deferral make the costs major, non-routine, or extraordinary. In some cases, the Commission has looked to determine whether costs were unanticipated, unplanned, beyond the control of the utility, and of an infrequent, non-recurring nature; that is, whether the costs and the circumstances of the costs are sufficiently unusual or extraordinary to warrant deferral accounting treatment – a tool not to be used routinely but sparingly as discussed above. *Order Approving Amended Schedule NS and Denying Deferral Accounting, Application by Virginia Electric and Power Company, d/b/a Dominion North Carolina Power, for Approval of Amended Schedule NS*, No. E-22, Sub 517, at 11–12 (N.C.U.C. Mar. 29, 2016). A finding that the magnitude of the costs supports a determination that they are unusual or extraordinary may not, in some circumstances also support a finding that these costs, if not deferred, will have a material adverse impact on the company’s financial condition to warrant deferral accounting treatment. In determining whether deferral or non-deferral will have a material impact on the company’s financial condition while the Commission may consider other matters, it often examines whether and to what extent the costs incurred will have a significant impact on the level of company earnings and the company’s ability to achieve its currently authorized rate of return on common equity. DEP Sub 874 Order at 25–26. In determining materiality, while the Commission may consider other matters, it often examines whether and to what extent the costs incurred will have a significant impact on the level of company earnings and the company’s ability to achieve its currently authorized rate of return on common equity. *Id.*

With regard to the WWTP projects, the Commission is persuaded that the costs are of an unusual, extraordinary nature. Both the Company and the Public Staff also agree that the costs associated with the WWTP projects are unusual or extraordinary in nature, as the Commission has used those terms in previous deferral accounting orders and as those terms are commonly understood. The Commission observes as stated in a previous deferral accounting case, “[t]he costs in question are unusual or extraordinary in the sense that they are associated with the incorporation of the costs of two [WWTP] facilities – representing major investments – into the Company’s rate structure; which is not a simple, regularly occurring, inconsequential event, but rather, is a major non-routine matter of considerable complexity and major significance.” DEC Sub 999 Order, at 18. In the present proceeding, the evidence demonstrates that the WWTP projects were not an

everyday, regular occurrence but were in fact non-routine, complex, and of major significance and that the associated costs are similarly unusual or extraordinary. The WWTP projects involved the installation of new treatment facilities that were integral to providing wastewater utility service and that were necessitated by conditions causing the old facilities to present unacceptable risks of failure and inability to comply with environmental requirements exposing the company to the further high risk of severe penalties and imposition of a consent decree. Such circumstances and replacement of such major facilities that are at risk of both functional and environmental compliance failure do not occur on a frequent basis.

The Commission is likewise persuaded that absent deferral, the costs will have a material impact on the Company's financial condition. The evidence demonstrates that the Company is not meeting its currently authorized rate of return on common equity and that even if the Sub 360 rate increase had been in effect for a full year, the rate of return on common equity impact of the costs of the WWTP projects would have an adverse impact on the Company's financial condition. The Commission gives significant weight to the undisputed testimony of witness DeStefano that CWSNC's consolidated actual earned rate of return on common equity during the test year for this rate case (the 12-month period ended March 31, 2019) was 1.63%. The Commission further finds credible the evidence that the rate increase in the last rate case was approximately \$1.1 million, which would not make up the difference from an actual rate of return on common equity of 1.63% to 9.75%, CWSNC's authorized rate of return on common equity granted in the Sub 360 Rate Order. Further, the evidence shows that the WWTP investments of approximately \$14 million would result in a 434-basis point rate of return on common equity reduction for the Uniform Sewer Rate Division. The Commission concludes that if the requested deferral for the WWTP projects is not allowed, it would appear that the Company's already low rate of return on common equity would be further eroded and that the Company would not have a reasonable opportunity to earn its authorized rate of return on common equity.

Furthermore, given the Company's depressed level of current earnings and its expected near-term significant financing needs, the Commission determines that deferral of the WWTP costs as requested by CWSNC will have a favorable impact on CWSNC's earnings and financial standing in general. As such, the deferral will enhance the Company's ability to access and obtain capital on more favorable terms, as it will help assure investor confidence in the Company. Such results will ultimately accrue to the benefit of CWSNC's customers.

Moreover, the Company and the Public Staff have agreed by Stipulation that the Company should be allowed to defer the incremental post-in-service depreciation expense and financing costs of the WWTPs at Nags Head and Connestee Falls as requested by CWSNC because they are both unusual in nature and material to the Company's financial condition. In light of the Commission's having accepted the Stipulation in its entirety and in light of the foregoing independent determination based on the evidence of record that the costs at issue are both unusual, non-routine, and material to the Company's financial well-being, the Commission finds the Company's request to

defer post-in-service depreciation and financing costs for the WWTP projects is just and reasonable and should be approved.

Thus, as provided in the Stipulation, Revised Settlement Exhibits I and II, and the testimony of witness Henry (as revised on the stand) and in Henry Late-Filed Exhibits 2, 3, and 4, the Commission finds and concludes that the Company should be authorized to defer its WWTP costs of \$1,098,778 related to its WWTPs (consisting of incremental post-in-service depreciation expense and financing costs from their respective in-service dates until the WWTPs are included for recovery in base rates in this case), and these costs should be amortized over five years, for an annual amount to be included in rates of \$219,756.

Unlike the deferral accounting request related to the WWTP projects, the Public Staff opposed deferral accounting treatment of the costs associated with the two AMR meter installation projects. The Commission agrees with the Public Staff. The Commission finds that the Company provided insufficient evidence that the projects and their associated costs are unusual or extraordinary such as to warrant deferral accounting. While a mass replacement of meters in an entire subdivision is not an everyday occurrence for CWSNC, the Commission is not convinced that such an event is sufficiently unusual or extraordinary to justify special deferral accounting treatment. The need to replace meters on a planned schedule is an anticipated need of the business and the timing and manner of implementation of such replacement, at least as was the case in this proceeding, is entirely within the control of the Company. Further, the Company did not establish by clear and convincing evidence that the meter installation costs sought to be deferred support a finding that the projects or said costs are unusual or extraordinary. On cross-examination witness DeStefano confirmed that the Company had sought and received rate recovery in its Docket No. W-354, Sub 344 (Sub 344) rate case for AMR meter installation projects that occurred in 2015 in seven systems. The evidence presented confirmed that the Company's Sub 344 rate increase included the costs of 1,157 AMR meters, for a total cost of over \$1.2 million, and in the Company's Sub 356 rate case, CWSNC received rate recovery for AMR meter installation projects in three systems, including 2,440 meters, for a total cost of over \$1.8 million. Considering that since 2015 CWSNC has completed ten AMR meter projects, including 3,597 meters at a total capital cost of over \$3 million, the Commission determines that the two AMR meter installation projects for Fairfield Mountain and Connestee Falls in the amount of \$880,209 are not major non-routine, infrequent, non-regularly occurring investments of considerable complexity and significance for CWSNC. Rather, the Commission finds that the two AMR meter installation projects are routine and regularly occurring and are not unusual or extraordinary in nature.

Having determined that the Company failed to establish that its AMR meter installation project and the related costs were unusual or extraordinary such as to justify allowing exceptional deferral accounting treatment, the Commission does not reach the issue of whether the AMR costs sought to be deferred have a material adverse impact on the Company's financial condition or stability. The determination that this project and its related costs are not unusual or extraordinary is dispositive. Therefore, the Company's

petition to defer these costs is not just and reasonable and is denied. However, the Commission emphasizes that decisions such as this one are made on a case-by-case basis, and this decision should not be construed to suggest that costs relating to a meter project can never be allowed deferral accounting treatment. The Commission acknowledges that every request for deferral accounting is shaped by its own unique factual circumstances, and whether an event and its related costs are sufficiently unusual or extraordinary in nature to merit an exception to the general rule against deferral accounting treatment is a determination for the Commission that will be based on the specific facts of each such request. The Commission notes that the Company's request for deferral accounting treatment for costs related to the WWTPs and the two AMR installation projects is determined within the context of this general rate case where the Commission is setting just and reasonable rates on a going-forward basis. The Commission's decision either granting or denying deferral accounting treatment in the present case is made from the standpoint of fairness and equity to both consumers and the Company.

Although deferral accounting is to be employed sparingly, the Commission finds that CWSNC has another option available to use to recover costs associated with future AMR meter deployments. Recognizing the challenges confronting North Carolina's water and wastewater industries in needing to make high cost capital investments to install and replace aging infrastructure, the General Assembly has provided the Commission with a tool specific to water and sewer utilities to alleviate the effects of regulatory lag. Section 62-133.12 authorizes the Commission to approve a rate adjustment mechanism in a general rate case to allow a water or sewer utility to recover the incremental depreciation expense and capital costs associated with reasonable and prudently incurred investment in eligible system improvement projects through the collection from customers of a water or sewer system improvement charge (WSIC or SSIC). The Commission approved such a mechanism for CWSNC in Docket No. W-354, Sub 336 pursuant to an order issued on March 10, 2014. Eligible water system improvements to be recovered by use of WSIC include "distribution system mains, valves, utility service lines (including meter boxes and appurtenances), meters, and hydrants installed as in-kind replacements." N.C.G.S. § 62-133.12(c)(1).

Notwithstanding this tool created to help utilities better manage regulatory lag, both Public Staff witness Junis and CWSNC witness DeStefano testified that, other than deferral, there is currently no rate mechanism such as the WSIC or SSIC mechanism available to the Company to mitigate the regulatory lag and resultant adverse earnings impacts associated with the mass replacement of traditional meters with AMR meters because, according to them, the WSIC and SSIC statute only allows recovery for "in-kind" replacements. Tr. vol. 8, 61-62, 195-96. As is clear from the testimony and CWSNC's stated position in its proposed order, the Company has accepted the Public Staff's interpretation that replacing an analog meter with an AMR meter is not an "in-kind" replacement. Tr. vol. 8, 61-62. The Commission does not agree with this interpretation. Although this question has not previously been brought to the Commission for decision, the Commission holds that the exchange of one type of meter reading device for another type of meter reading device is an "in-kind" replacement as that term is used in

N.C.G.S. § 62-133.12(c)(1). The Public Staff appears to read the words “in kind” to mean “like kind and quality” or perhaps “like grade and quality” but this amounts to an impermissible rewriting of the statute. Such an interpretation would defeat the purpose of providing water and sewer utilities with the opportunity to seek recovery under an approved rate adjustment mechanism. Black’s Law Dictionary defines “in kind” as “of the same species or category” or “in the same kind, class or genus.” Black’s Law Dictionary (5th ed. 1979) Bouvier Law Dictionary defines “in kind” as “[p]roperty in its physical form, or property similar to property in issue. In kind refers to specific property, either the property itself in issue or similar property of the same form, quality, and value as the property in issue.” Bouvier Law Dictionary (Desk ed. 2020) The Commission concludes an “in-kind” replacement can be an identical replacement or one that is a reasonable alternative to serve the same purpose. If the General Assembly’s use of “in kind” limited replacement to the exact identical equipment, upgrade replacements could never be eligible improvements for WSIC or SSIC recovery. A utility seeking to replace a non-functioning obsolete item of equipment with the then-current industry standard equipment would be stymied, and the Commission is not able to conclude that such an outcome was intended by a statute that was meant to facilitate repair and replacement of basic items of utility plant and equipment. Accordingly, with regard to AMR meter installation projects planned for the future, CWSNC and the Public Staff should work together pursuant to Commission Rule R7-39 to mitigate regulatory lag using WSIC recovery. However, the Commission’s decision herein does not in any way relieve the Company of its burden to prove its investments are reasonable and prudently incurred as required by N.C.G.S. § 62-133.12 and Commission Rule R7-39(a). Moreover, in its Order Adopting Rules to Implement G.S. § 62-133.12, *Petition for Rulemaking to Implement G.S.62-133.12, North Carolina Session Law 2013-106(House Bill 710)*, No. W-100, Sub 54 (N.C.U.C. June 6, 2014), the Commission concluded that

any rate adjustments authorized under the WSIC and SSIC mechanisms outside of a general rate case will be allowed to become effective, but not unconditionally approved. In other words, the adjustments will be provisional, will not be deemed *prima facie* just and reasonable, and, thus, may be rescinded retroactively in the utility’s subsequent general rate case, at which time the adjustment may be further examined for a determination of its justness and reasonableness.

Id. at 5.

The Commission also notes the Company’s testimony and evidence regarding ongoing improvement projects and the need and plans for substantial capital investment in the near future. In consideration of this continuing and anticipated increase in capital spending to address aging infrastructure, the Commission recommends that CWSNC seek to make better use of the WSIC and SSIC mechanisms as a regulatory tool to mitigate the negative effects of regulatory lag for all statutorily allowed system improvement projects.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 42

Depreciation and Amortization Expense

The evidence supporting this finding of fact is found in the verified Application and the accompanying NCUC Form W-1, the testimony of Public Staff witnesses Feasel and Henry, and the testimony of Company witness DeStefano. The following table summarizes the differences between the Company's level of depreciation and amortization expenses from its Application and the amounts recommended by the Public Staff:

Item	Company per <u>Application</u>	<u>Difference</u>	Amount per <u>Public Staff</u>
Depreciation expense	\$6,399,241	\$181,470	\$6,580,711
Amortization exp. - CIAC	(1,485,664)	8,710	(1,476,955)
Amortization exp. - PAA	(85,341)	8,718	(76,623)
Amortization of ITC	<u>(579)</u>	<u>0</u>	<u>(579)</u>
Total	<u>\$4,827,656</u>	<u>\$198,898</u>	<u>\$5,026,554</u>

With respect to CWSNC's depreciation expense, in light of the agreements reached in the Stipulation and revisions recommended by the Public Staff in its testimony and reflected in Henry Revised Exhibit I and Feasel Revised Exhibits I and II, the Company does not dispute the adjustments recommended by the Public Staff to depreciation expense. As detailed elsewhere in this Order, the Commission finds that the adjustments recommended by the Public Staff to depreciation expense, which are not contested, are appropriate adjustments to be made to operating revenue deductions in this proceeding.

Based on the foregoing, the Commission concludes that the appropriate level of depreciation and amortization expense for use in this proceeding is as follows:

Item	Amount
Depreciation expense	\$6,580,711
Amortization expense – CIAC	(1,476,955)
Amortization expense – PAA	(76,623)
Amortization of ITC	<u>(579)</u>
Total	<u>\$5,026,554</u>

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 43

Franchise, Property, Payroll and Other Taxes

The evidence supporting this finding of fact is found in the verified Application and the accompanying NCUC Form W-1, and in the testimony of Public Staff witness Henry and Company witness DeStefano. The following table summarizes the differences

between the Company's level of franchise, property, payroll, and other taxes from its Application and the amounts recommended by the Public Staff:

<u>Item</u>	<u>Company Application</u>	<u>Difference</u>	<u>Amount per Public Staff</u>
Franchise and other taxes	(\$789)	\$135	(\$655)
Property taxes	268,734	0	268,734
Payroll taxes	<u>596,100</u>	<u>(68,672)</u>	<u>527,428</u>
Total	<u>\$864,045</u>	<u>\$(68,537)</u>	<u>\$795,507</u>

With the Stipulation and revisions made by the Public Staff in its Feasel Revised Exhibits I and II and Henry Revised Exhibit I, the Company does not dispute adjustments recommended by the Public Staff to franchise and other taxes and property taxes. Therefore, the Commission finds that the adjustments recommended by the Public Staff to franchise and other taxes and payroll taxes, which are not contested, are appropriate adjustments to be made to operating revenue deductions in this proceeding.

Based on the foregoing, the Commission concludes that the appropriate level of franchise, property, payroll, and other taxes for use in this proceeding is as follows:

<u>Item</u>	<u>Amount</u>
Franchise and other taxes	(\$655)
Property tax	268,734
Payroll taxes	<u>527,428</u>
Total	<u>\$795,507</u>

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 44-47

Regulatory Fee and Income Taxes

The evidence supporting these findings of fact is found in the testimony of Public Staff witnesses Boswell and Henry, and of Company witness DeStefano. The following table summarizes the differences between the Company's level of regulatory fee and income taxes from its Application and the amounts recommended by the Public Staff:

<u>Item</u>	<u>Company per Application</u>	<u>Difference</u>	<u>Amount per Public Staff</u>
Regulatory fee	\$56,361	(\$12,202)	\$44,159
State income taxes	218,982	(143,508)	75,474
Federal income taxes	1,793,462	(1,175,329)	618,133
Deferred income taxes	<u>0</u>	<u>(69,128)</u>	<u>(69,128)</u>
Total	<u>\$2,068,805</u>	<u>\$(1,400,167)</u>	<u>\$668,638</u>

Regulatory Fee

The difference in the level of regulatory fee is due to the differing levels of revenues recommended by the Company and the Public Staff. Based on conclusions reached elsewhere in this Order regarding the levels of revenues, the Commission concludes that the appropriate level of regulatory fee for use in this proceeding is \$44,159.

State Income Taxes

The difference in the level of state income taxes is due to the differing levels of revenues and expenses recommended by the Company and the Public Staff. Based on the conclusions reached elsewhere in the Order regarding the levels of revenues and expenses, the Commission concludes that the appropriate level of state income taxes for use in this proceeding is \$75,474 based on the current state corporate income tax rate of 2.50%.

Federal Income Taxes

The difference in the level of federal income taxes is due to the differing levels of revenues and expenses recommended by the Company and the Public Staff. Based on the conclusions reached elsewhere in the Order regarding the levels of revenues and expenses, the Commission concludes that the appropriate level of federal income taxes for use in this proceeding is \$618,133 based on the current federal corporate income tax rate of 21.00%.

Deferred Income Taxes

With the Stipulation and revisions made by the Public Staff in its Feasel Revised Exhibits I and II, and Henry Revised Exhibit I, and in the testimony of witness Boswell and Boswell Exhibit 1, the Company agreed with the Public Staff adjustment to deferred income tax of \$69,128 to reflect the annual amortization of protected and unprotected federal EDIT.

Based on the foregoing, the Commission concludes that the appropriate level of regulatory fee and income taxes for use in this proceeding is as follows:

Item	Amount
Regulatory fee	\$44,159
State income taxes	75,474
Federal income taxes	618,133
Deferred income taxes	<u>(69,128)</u>
Total	<u>\$668,638</u>

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 48-50

The Federal Tax Cuts and Jobs Act

The evidence supporting these findings of fact is found in the verified Application and the accompanying NCUC Form W-1, the testimony of Company witness DeStefano, the testimony of Public Staff witness Boswell, and the Stipulation and Settlement Exhibit 1.

In its Application and in the direct testimony of CWSNC witness DeStefano, the Company proposes to include adjustments to the reserve balances for both federal protected EDIT and federal unprotected EDIT based upon the Company's final 2017 federal income tax return filed in late 2018. For federal protected EDIT the Company recommends that the Commission conclude that it is appropriate for CWSNC to continue to return the federal protected EDIT balance maintaining the amortization period approved by the Commission in the Sub 360 Order. In addition, in witness DeStefano's testimony, the Company recommends reducing the term of the federal unprotected EDIT rider approved in the Sub 360 Order (originally 48 months with 35 months now remaining) to a two-year (or 24-month) term as of the effective date of the current proceeding.

Public Staff witness Boswell stated in her direct testimony that certain adjustments to book balances and reserves related to EDIT were recorded to CWSNC's books, adjustments that were not reflected in the Company's most recent rate case. She noted that these adjustments affect the balance of both federal protected EDIT and federal unprotected EDIT. Witness Boswell further stated that the adjustments to the federal protected EDIT and federal unprotected EDIT balances are primarily because: (1) the Company took advantage of a late IRS notice stating that regulated utilities were allowed 100% bonus depreciation for those assets placed in service during the period of September 28, 2017, to December 31, 2017, without a binding contract in place before September 28, 2017, and (2) the Company adjusted amounts utilized in the prior rate case to the actual amounts on its final tax return for 2017. Witness Boswell recommended one adjustment to correct mismatched calculations. She proposed calculating both federal protected EDIT and federal unprotected EDIT amortizations with the adjustments effective as of April 1, 2020. Finally, the Public Staff does not oppose the Company's request to refund the remaining federal unprotected EDIT balance over 24 months instead of the remaining 35 months as originally ordered in Sub 360.

Settlement Exhibit I filed with the Stipulation in the current proceeding reflects the correction to the calculation of federal unprotected EDIT proposed by Public Staff witness Boswell, the reduction of the rider period for the federal unprotected EDIT from 35 months to 24 months, and includes the rate base impact of the flow back of federal protected EDIT in accordance with the RSGM, as approved in Sub 360, in the revenue requirement. In addition, the revenue requirement depicted on Settlement Exhibit I also includes the flow back of state EDIT in accordance with previous Commission orders in Sub 356 and Sub 360. No other party presented evidence on these matters.

Based on the foregoing, the Commission concludes that it is reasonable and appropriate for purposes of this proceeding to accept the Stipulation between CWSNC and the Public Staff on the tax issues. Therefore, the Commission concludes that CWSNC should continue to flow back the federal protected EDIT in accordance with the RSGM as ordered in Sub 360, and the Company shall refund its remaining federal unprotected EDIT balances over 24 months instead of the remaining 35 months as originally ordered by the Commission in Sub 360. Further, CWSNC should continue to flow back the state EDIT (which was originally over a three-year period) in accordance with the Commission's Sub 356 Order as confirmed in the Commission's Sub 360 Order.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 51-59

Capital Structure, Cost of Capital, and Overall Rate of Return

The evidence supporting these findings of fact and conclusions is contained in the verified Application and the accompanying NCUC Form W-1, the testimony and exhibits of the public witnesses, the direct and rebuttal testimony and exhibits of Company witness D'Ascendis, and the direct and supplemental testimony and exhibits of Public Staff witness Hinton.

Rate of Return on Equity

The Commission's consideration of the evidence and decision on this issue is set out below and is organized into three sections. The first is a summary of the record evidence on rate of return on common equity. The second is a summary of the law applicable to the Commission's decision on rate of return on common equity. The third is an application of the law to the evidence and a discussion and explanation of the Commission's ultimate decision on rate of return on common equity.

Summary of Record Evidence on Return on Equity

In its Application, the Company requested approval for its rates to be set using a rate of return on common equity of 10.75%. This request was based upon and supported by the direct testimony of CWSNC witness D'Ascendis. In his rebuttal testimony, witness D'Ascendis reduced his recommended rate of return on common equity to 10.20% based upon his updated analyses. This rate of return on common equity compares to a 9.75% rate of return on common equity underlying CWSNC's current rates. Public Staff witness Hinton, in his direct testimony, recommended a rate of return on common equity for CWSNC of 9.00%. In his supplemental testimony, witness Hinton revised and increased his recommended return on common equity to 9.10%.

Direct and Rebuttal Testimony of Dylan W. D'Ascendis (CWSNC)

Company witness D'Ascendis recommended in his direct testimony a rate of return on common equity of 10.75%. This 10.75% was based upon his indicated cost of common equity of 10.35%, plus a recommended size adjustment of 0.40%. In his rebuttal

testimony, witness D'Ascendis provided an updated analysis reflecting current investor expectations and reduced his recommended rate of return on common equity to 10.20%, including his recommended 0.40% size adjustment.

CWSNC witness D'Ascendis' recommendation was based upon his Discounted Cash Flow (DCF) model, his Risk Premium Model (RPM), and his Capital Asset Pricing Model (CAPM), applied to market data of a proxy group of six water companies (Utility Proxy Group). He also applied the DCF, RPM, and CAPM to a proxy group of domestic, non-price regulated companies (Non-Price Regulated Proxy Group) which he described as comparable in total risk to his Utility Proxy Group.

The results derived from witness D'Ascendis' analyses in his direct and rebuttal testimony are as follows:

Summary of D'Ascendis Pre-Filed Testimony on Common Equity Cost Rate		
	Direct Testimony	Rebuttal Testimony
Discounted Cash Flow Model	8.70%	8.81%
Risk Premium Model	10.62%	10.12%
Capital Asset Pricing Model	10.21%	9.35%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Proxy Group	<u>11.78%</u>	<u>11.29%</u>
Indicated Common Equity Cost Rate Before Adjustment	10.35%	9.80%
Size Adjustment	<u>0.40%</u>	<u>0.40%</u>
Recommended Common Equity Cost Rate After Adjustment	<u>10.75%</u>	<u>10.20%</u>

He concluded that a common equity cost rate of 9.80% for CWSNC is indicated before any Company-specific adjustments. He then adjusted this indicated rate upward by 0.40% to reflect CWSNC's smaller relative size as compared with the members of his Utility Proxy Group, resulting in a size-adjusted indicated common equity cost rate of 10.20%.

CWSNC witness D'Ascendis testified the six companies in his Utility Proxy Group were: American States Water Co.; American Water Works Co., Inc.; Artesian Resources, Inc.; California Water Service Group; Middlesex Water Co.; and York Water Co.

CWSNC witness D'Ascendis testified he used the single-stage constant growth DCF model. He testified his unadjusted dividend yields are based on the proxy companies' dividends as of October 18, 2019, divided by the average of closing market

prices for the 60 trading days ending October 18, 2019.¹⁵ He made an adjustment to the dividend yield because dividends are paid periodically, usually quarterly.

For CWSNC witness D'Ascendis' DCF growth rate he testified he only used analysts' five-year forecasts of earning per share (EPS) growth. He testified the mean result of his application of the single-stage DCF model is 8.73%, the median result is 8.88%, and the average of the two is 8.81% for his Utility Proxy Group as shown on D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 3. He testified in arriving at a conclusion for the DCF-indicated common equity cost rate for his Utility Proxy Group, he relied on an average of the mean and the median results of the DCF.

Witness D'Ascendis used two risk premium methods. He testified his first method is the Predictive Risk Premium Model (PRPM), while the second method is a Risk Premium Model Using an Adjusted Total Market Approach. He testified the PRPM estimates the risk/return relationship directly, as the predicted equity risk premium is generated by the prediction of volatility or risk. He testified the inputs to his PRPM are the historical returns on the common shares of each company in the Utility Proxy Group minus the historical monthly yield on long-term U.S. Treasury securities through April 2019. He testified he added the forecasted 30-year U.S. Treasury Bond yield, 2.64% to each company's PRPM-derived equity risk premium to arrive at an indicated cost of common equity. His rebuttal mean PRPM indicated common equity cost rate for the Utility Proxy Group is 11.30%, and the median is 10.38%. He relied on the average of the mean and median results of the Utility Proxy Group PRPM to calculate a cost of common equity rate of 10.84% as shown on D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 11, column (5).

CWSNC witness D'Ascendis testified his total market approach RPM adds a prospective public utility bond yield to an average of (1) an equity risk premium that is derived from a beta-adjusted total market equity risk premium, and (2) an equity risk premium based on the S&P Utilities Index. He calculated in his rebuttal testimony the adjusted prospective bond yield for the Utility Proxy Group to be 4.01% as shown on D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 12, line 5, and the average equity risk premium to be 5.38% resulting in risk premium derived common equity to be 9.39% for his RPM using his Total Market Approach.

For his CAPM, witness D'Ascendis testified he applied both the traditional CAPM and the empirical CAPM (ECAPM) to the companies in his Utility Proxy Group and averaged the results. He testified the model is applied by adding a risk-free rate of return to a market risk premium, which is adjusted proportionately to reflect the systematic risk of the individual security relative to the total market as measured by the beta coefficient. For his CAPM beta coefficient, he considered two methods of calculation: the average of the beta coefficients of the Utility Proxy Group companies reported by Bloomberg

¹⁵ See Schedule DWD-1R, page 3, footnote 1.

Professional Services, and the average of the beta coefficients of the Utility Proxy Group companies as reported by Value Line Investment Survey (Value Line).

CWSNC witness D'Ascendis in his rebuttal testified the risk-free rate adopted for both applications of the CAPM at 2.64%. This risk-free rate of 2.64% is based on the average of the *Blue Chip* consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six quarters beginning with the fourth calendar quarter of 2019 and ending with the first quarter in 2021, and long-term projections for the years 2021 to 2025, and 2026 to 2030. D'Ascendis Rebuttal Exhibit 1, DWD-1R, page 22, column (5), and page 23, column (2).

Witness D'Ascendis testified on rebuttal that the mean result of his CAPM/ECAPM analyses is 9.39%, the median is 9.31%, and the average of the two is 9.35%. Witness D'Ascendis testified that, consistent with his reliance on the average of his mean and median DCF results, the indicated common equity costs rate using the CAPM/ECAPM is 9.35%.

Witness D'Ascendis also selected 11 domestic, non-price regulated companies for his Non-Price Regulated Proxy Group that he believes are comparable in total risk to his Utility Proxy Group. He calculated common equity cost rates using the DCF, RPM, and CAPM for the Non-Price Regulated Proxy Group. In his rebuttal testimony, witness D'Ascendis' DCF result was 11.63%, his RPM cost rate was 11.41%, and his CAPM/ECAPM cost rate was 10.44%. Witness D'Ascendis testified that the average of the mean and median of these models was 11.29%, which he used as the indicated common equity cost rate for the Non-Price Regulated Proxy Group.

Based on the results of the application of multiple cost of common equity models to the Utility Proxy Group and the Non-Price Regulated Proxy Group, witness D'Ascendis testified that the reasonable, appropriate and indicated cost of equity for CWSNC before any adjustment for relative risk was 9.80%.

Witness D'Ascendis also made a 0.40% equity cost rate adjustment due to CWSNC's small size relative to the Utility Proxy Group. He testified that the Company has greater relative risk than the average company in the Utility Proxy Group because of its smaller size compared with the group, as measured by an estimated market capitalization of common equity for CWSNC (whose common stock is not publicly traded). This resulted in a size-adjusted cost of common equity for CWSNC of 10.20%.

Additionally, witness D'Ascendis stated that he had reviewed the Commission's Sub 360 Order regarding the issues of the use of the PRPM, the ECAPM, the use of a non-price regulated proxy group, and the applicability of a size adjusted cost of common equity for CWSNC. In response to these concerns, witness D'Ascendis provided testimony further supporting the inclusion of such factors in determining his recommended return on equity.

Specifically, in terms of the PRPM, he addressed the Commission's concerns about using a specific statistical package to calculate the PRPM results, which made the Commission skeptical that investors would place significant weight on the model. He explained that the general autoregressive conditional heteroskedasticity (GARCH) model used for the PRPM has been in the public domain since the 1980s and is available in several statistical packages which are not financially prohibitive for investors.

In response to the Commission's concerns regarding the ECAPM, which were that there was not enough evidence in the record as to why the ECAPM was superior to the CAPM, witness D'Ascendis provided substantially more information on the subject than what was presented in Sub 360.

In response to the Commission's concerns regarding the use of non-price regulated companies, which were that the non-price regulated companies were not of similar risk to the utility proxy group, witness D'Ascendis provided an additional measure of risk to show that, indeed, his non-price regulated proxy group was similar in total risk to the utility proxy group. The study showed that the non-price regulated proxy group's mean and median coefficient of variation (CoV), of net profit were within the range of CoVs of net profit set by the utility proxy group. The coefficient of variation is often used by investors and economists to determine volatility (i.e. risk) and the use of net profit directly ties to earnings and stock prices.

Finally, witness D'Ascendis responded to the Commission's concerns regarding the size adjustment which were whether the size studies presented in the record were applicable to utilities, and that the selection of a 40-basis point adjustment from an indicated 461 basis point risk premium was rather arbitrary. In order to provide more information to the Commission in this case, witness D'Ascendis conducted a study on whether the size effect is in fact applicable to utilities. His study included the universe of water, gas, and electric companies included in Value Line Standard Edition. From each of the utilities' Value Line Ratings & Reports, witness D'Ascendis calculated the 10-year CoV of net profit (a measure of risk) and current market capitalization (a measure of size) for each company. After ranking the companies by size (largest to smallest) and risk (least risky to most risky), he made a scatter plot of the data, as shown on Chart 1 in his direct testimony.

Witness D'Ascendis testified that, as shown in his Chart 1 of his direct testimony, as company size decreases (increasing size rank), the CoV increases, linking size and risk for utilities. The R-Squared value of 0.0962 means that approximately 10% of the change in risk rank is explained by the size rank. While a 0.0962 R-Squared value does not appear to have strong explanatory power, the average R-Squared value of the Utility Proxy Group's beta coefficient is 0.0794. The selection of a 40-basis point upward adjustment based on its difference in size given an indicated risk premium of approximately 400 basis points is consistent with the approximate 0.10 R-Squared value of the size study applicable to utilities. With this additional information, witness D'Ascendis stated that he hoped the Commission would revisit this concern in its Order in this case.

Witness D'Ascendis' rebuttal testimony criticized the testimony of witness Hinton's approach to estimating CWSNC's required return on equity for a number of perceived shortcomings, including Hinton's:

- (a) Inclusion of a gas proxy group to determine a rate of return on common equity for a water utility;
- (b) Misapplication of the discounted cash flow model;
- (c) Misapplication of the risk premium model;
- (d) Misapplication of the capital asset pricing model;
- (e) Misapplication of the Comparable Earnings Model;
- (f) Failure to account for size-specific risks; and
- (g) Opinion that the approval of the Company's requested consumption adjustment mechanism (CAM) in this proceeding requires a downward adjustment to the rate of return on common equity.

Tr. vol. 8, 267–68.

CWSNC Witness D'Ascendis Cross-Examination

CWSNC witness D'Ascendis testified on cross-examination that in the Middlesex Water Company, New Jersey general rate case decided in July 2015, he recommended a specific rate of return on common equity of 10.40%, but that a rate of return on common equity of 9.75% was approved which was 65 basis points less than his recommendation. Witness D'Ascendis testified that in the Carolina Water Service, Inc. South Carolina 2015 general rate case where his recommended rate of return on common equity range was 10.00% to 10.50%, the approved rate of return on common equity was 9.34% which was 91 basis points below the midpoint of his recommended range.

CWSNC witness D'Ascendis further testified on cross-examination that in the Middlesex Water Company, New Jersey general rate case decided in March 2018, his recommended specific rate of return on common equity was 10.70%, and a 9.60% rate of return on common equity was approved whereby his recommended rate of return on common equity was 110 basis points above the approved rate of return on common equity. He testified that the 2018 South Carolina decision for Carolina Water Service, Inc. of South Carolina was the only one of the fifteen listed return on equity decisions, that a commission approved an allowed rate of return on common equity within his recommended range. He also testified that in the recent CWSNC general rate case, order dated February 21, 2019, his recommended rate of return on common equity range was 10.80% to 11.20%, with a midpoint of 11.00%, which was 125 basis points above the Commission approved rate of return on common equity of 9.75%.

Witness D'Ascendis testified on cross-examination that the authorized rates of return on equity for all 15 decisions averaged 127 basis points below his recommended rates of return on equity, and after removing a 2016 outlier case in Missouri where he was 360 basis points above the approved rate of return on common equity, the average difference between falls to 110 basis points. He further testified on cross-examination that

his rebuttal specific return on equity recommendation of 10.20% less the 110 basis points, would be the same number as Public Staff witness Hinton's recommended 9.10% rate of return on common equity.

Witness D'Ascendis also testified that Public Staff D'Ascendis Cross-Examination Exhibit 1, page 2 listed the RRA approved rates of return on equity for the last three years for his Utility Proxy Group companies with approved average rates of return on equity of 9.42%.

Witness D'Ascendis testified that as shown on Public Staff D'Ascendis Cross-Examination Exhibit 2, which was a RRA summary of commission approved rates of return on equity from January 2014 through June 30, 2019, the average approved return on equity was 9.50% for 30 return on equity decisions in the most recent three-year period July 1, 2016 through June 30, 2019.

With respect to his recommended 40 basis point size adjustment, witness D'Ascendis testified on cross-examination that he knew CWSNC served approximately 50,000 customers in North Carolina, was the second largest Commission regulated water and wastewater utility in North Carolina, and the two next largest companies serve approximately 7,000 customers each.

Witness D'Ascendis testified he was aware CWSNC did not have any industrial customers, and that more than 99.5% of its customers were residential plus some small stores and some schools. He testified that CWSNC was geographically diversified in North Carolina with systems along the North Carolina coast, the Piedmont and throughout the mountains.

Witness D'Ascendis further testified on cross-examination that CWSNC obtains all its debt through its parent, Utilities, Inc., and that CWSNC does not go into the debt market. He testified that Utilities Inc. is owned by Corix. Witness D'Ascendis read into the record sections of the pre-filed testimony of Corix CEO and President Gordan Barefoot, which stated Corix provides to CWSNC a full suite of support services, and Corix provides access to favorable terms for debt financing in capital markets. Both the Public Staff and CWSNC used the Utilities, Inc. capital structure and debt costs for CWSNC in this general rate case.

Witness D'Ascendis testified that based on Public Staff D'Ascendis Cross-Examination, Exhibit 4, that the Utilities, Inc. has common equity of \$280.2 million. When multiplied by the D'Ascendis Utility Proxy Group market to book ratio of 347.3%, the result is a market capitalization for Utilities, Inc. of \$973.3 million. Witness D'Ascendis testified that this market capitalization of three of the companies in the D'Ascendis Utility Proxy Group; those companies being Artesian Resources Corporation at \$316.0 million, York Water Company at \$440.0 million, and Middlesex Water Company at \$951.0 million.

CWSNC witness D'Ascendis on cross-examination further testified Public Staff D'Ascendis Cross-Examination Exhibit 5 was a comparison of the growth in dividends

and stock market prices of the D'Ascendis Proxy Group of companies from April 15, 2011 to November 29, 2019. During that period dividend and stock price movements were as follows:

Company	Dividend Growth	Share Price Appreciation
American States Water	126%	378%
American Water Works	127%	419%
Artesian Resource Group	32%	91%
California Water Service	27%	173%
Middlesex Water Company	29%	243%
York Water Co.	36%	163%
Six Company Average	59%	245%

Witness D'Ascendis testified that he agreed that stock market prices have increased materially since April 2011, and dividend amounts have lagged way behind. He further testified that dividend yields are one of the two major components of the DCF.

During cross-examination CWSNC witness D'Ascendis also testified as to the stock price increases subsequent to the California Public Utilities Commission Order dated March 22, 2018 which approved a 9.20% rate of return on common equity for California American Water Co., a wholly-owned subsidiary of American Water Works; a 9.20% rate of return on common equity for California Water Service Co.; an 8.90% rate of return on common equity for Golden State Water Co., a wholly-owned subsidiary of American States Water; and an 8.90% rate of return on common equity for San Jose Water Co. The stock market percentage increases for the period March 22, 2018 to November 29, 2019, were: American Water Works 51.0%, American States Water 56.6%, California Water Service 36.3% and San Jose Water 33.1%, as shown on Public Staff D'Ascendis Cross-Examination Exhibit 6.

Witness D'Ascendis also testified on cross-examination about the significant decrease in the yields of 30-year Treasury Bond and A-Rated Public Utility Bonds as shown on Public Staff D'Ascendis Cross-Examination Exhibit 7. During the one-year period September 2018 to September 2019, the yields on A Rated Public Utility Bonds decreased from 4.32% to 3.37%, a decrease of 95 basis points from the previous CWSNC general rate case expert witness hearing heard before the Commission on October 16, 2018. Witness D'Ascendis' risk free 30-year Treasury Bond projected yield in this current case, shown in rebuttal exhibits filed on November 20, 2019, Schedule DWD-1R, page 22 was 2.64% compared to the 3.74% in September 2018, as stated in his prior Sub 360 CWSNC case testimony in D'Ascendis Rebuttal Exhibit 1, Schedule DWD-1R, page 11, column 6, and page 22, footnote 2, resulting in a bond yield decrease between his two rebuttal testimonies of 110 basis points. He further testified that as of November 29, 2019, the actual 30-year Treasury Bond yield was 2.19% compared to the October 16, 2018 actual 30-year Treasury Bond yield of 3.32%, a decrease of 113 basis points.

With respect to the non-price regulated companies in witness D'Ascendis' testimony for which he performed DCF, Risk Premium and CAPM analyses, he testified on cross-examination that these companies had competition unlike CWSNC, which has franchises protecting it from competition by other investor owned water utilities. Witness D'Ascendis testified that each time he has presented the non-priced regulated company analyses, the Commission has rejected and given no weight to these analyses.

Witness D'Ascendis testified that the Commission in CWSNC's February 19, 2019, Sub 360 Order found credible, probative, and entitled to substantial weight to his DCF, Total Market Risk Premium, and Traditional CAPM. He testified that his rebuttal exhibits in this case for these same analyses stated DCF 8.81%, Total Market Risk Premium 9.39%, Traditional CAPM 8.90%, with the average of these three of his models being 9.03%, all as shown on Public Staff D'Ascendis Cross-Examination Exhibit 10.

In response to a request by Chair Mitchell, CWSNC witness D'Ascendis filed a Late Filed Exhibit on December 13, 2019, showing the effect on each of his models using witness Hinton's 2.53% interest rate as the current yield for 30-year Treasury Bonds rather than the projected yields in witness D'Ascendis' rebuttal exhibits. This D'Ascendis On-the-Record Data Request provided the following results:

	D'Ascendis Late-Filed Exhibit #1
Discounted Cash Flow Model	8.81%
Risk Premium Model	10.00%
Capital Asset Pricing Model	9.29%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Proxy Group	<u>11.16%</u>
Indicated Common Equity Cost Rate Before Adjustment	9.75%
Size Adjustment	<u>0.40%</u>
Recommended Common Equity Cost Rate After Adjustment	<u>10.15%</u>

Public Staff Witness Hinton Testimony

Public Staff Director of Economic Research John R. Hinton testified the Public Staff recommends an overall rate of return of 7.20%, based on a capital structure consisting of 50.90% long-term debt at a cost rate of 5.36% and 49.10% common equity at a cost rate of 9.10%. He testified his recommendations result in pre-tax interest coverage equaling 3.1 times and a funds flow to debt ratio of 25.0%, which should qualify for a single "A" bond rating.

Witness Hinton described the current financial market conditions, testifying that the cost of financing is much lower today than in the more inflationary period of the 1990s. More recently, the continued low rates of inflation and expectations of future low inflation rates have contributed to even lower long-term interest rates. He testified that according

to Moody's Bond Survey, yields on long-term "A" rated public utility bonds have fallen 88 basis points from 4.25% on February 21, 2019, the date of the order in Sub 360, as compared to 3.37% for September 2019. He testified that by the close of this proceeding, CWSNC will have received five rate increases over the last six years in Docket Nos. W-354, Sub 360, Sub 356, Sub 344, and Sub 336. He further testified relative to the filing of the cost of capital settlement in the CWSNC January 2014 rate case in Docket No. W-354, Sub 336, yields on Moody's A-rated utility bonds are 126 basis points lower than the average 4.63% yield observed during the CWSNC January 2014, as illustrated by Hinton Exhibit JRH-1.

Witness Hinton testified that interest rates on various loans have fallen as the yields on treasury securities have declined since the Commission issued its order on February 21, 2019. The graph on page 15 of witness Hinton's direct testimony shows the lower yields that on average are over 100 basis points lower for all durations except for a minor increase in 90-day treasury bills. He testified that the average decrease in treasury bonds of 5-, 7-, 10-, 20-, and 30-year bonds is 111 basis points. He testified while Utilities, Inc., Corix, and its ultimate parent, the British Columbia Investment Management Corporation (BCIMC) generally cannot obtain capital at these interest rates, the falling yields are indicators of the declining cost of debt capital.

Public Staff witness Hinton testified that the current lower interest rates, especially for longer-term securities, and stable inflationary environment of today indicate that borrowers are paying less for the time value of money. He testified that this is significant since utility stocks and utility capital costs are highly interest rate-sensitive relative to most industries within the securities markets. He testified that given that investors often view purchases of the common stocks of utilities as substitutes for fixed income investments, the reductions in interest rates observed over the past ten years or more has paralleled the decreases in investor required rates of return on common equity.

Public Staff witness Hinton testified that he does not rely on interest rate forecasts. Rather, he believes that relying on current interest rates, especially in relation to yields on long-term bonds, is more appropriate for ratemaking in that it is reasonable to expect that as investors in the marketplace price bonds based upon expectations on demand and supply of capital, future interest rates, inflation rates, etc. He testified that while he has a healthy respect for forecasting, he is aware of the risk of relying on predictions of rising interest rates to determine utility rates. He presented a portion of the testimony of Aqua North Carolina, Inc. witness Pauline Ahern in the 2013 Aqua rate case, Docket No. W-218, Sub 363. In that case she identified several interest rate forecasts by Blue Chip Financial Forecasts of 30-year Treasury Bond yields that were predicted to rise to 4.3% in 2015, 4.70% in 2016, 5.20% in 2017, and 5.50% for 2020-2024. He presented the graph 30-Year US Treasury Bonds on page 18 of his direct testimony, which showed in 2015, the range was approximately 2.50% to 3.10%, in 2016 the range was approximately 2.50% to 3.10%, and in 2017 the range was approximately 2.25% to 3.10%. Witness Hinton testified that similar overestimated forecasts can be identified in witness D'Ascendis' Exhibit DWD-4 in the CWSNC's 2018 rate case where the Blue-Chip consensus forecast predicted the 30-year Treasury Bonds would rise to 3.80% by the

third quarter of 2019. According to the Federal Reserve, the highest observed yield on 30-year Treasury Bonds for the third quarter of 2019 is 2.65%, and the average for the quarter was 2.29%. He testified that these types of errors make these interest rate forecasts inappropriate for ratemaking.

Public Staff witness Hinton testified that he used the discounted cash flow (DCF) model and the Risk Premium model to determine the cost of equity for CWSNC. He testified that the DCF model is a method of evaluating the expected cash flows from an investment by giving appropriate consideration to the time value of money. Witness Hinton testified that the DCF model is based on the theory that the price of the investment will equal the discounted cash flows of returns. The return to an equity investor comes in the form of expected future dividends and price appreciation. He testified that as the new price will again be the sum of the discounted cash flows, price appreciation is ignored, and attention focused on the expected stream of dividends.

Witness Hinton testified that he applied the DCF method to a comparable group of seven water utilities followed by Value Line Investment Survey. He testified that the standard edition of Value Line covers eight water companies. He excluded Consolidated Water Co. due to its significant overseas operations. Witness Hinton included a group of nine natural gas local distribution companies (LDCs) in his DCF analysis stating these LDCs exhibit risk measures similar to his proxy group of water companies.

Public Staff witness Hinton calculated the dividend yield component of the DCF by using the Value Line estimate of dividends to be declared over the next 12 months divided by the price of the stock as reported in the Value Line Summary and Index sections for each week of the 13-week period July 26, 2019, through October 18, 2019. He testified that a 13-week averaging period tends to smooth out short-term variations in the stock prices. This process resulted in an average dividend yield of 1.7% for his proxy group of water utilities and 2.6% for the LDC group utilities.

To calculate the expected growth rate component of the DCF, Public Staff witness Hinton employed the growth rates of his proxy group in earnings per share (EPS), dividends per share (DPS), and book value per share (BPS) as reported in Value Line over the past ten and five years. He also employed the forecasts of the growth rates of his water and LDC proxy groups in EPS, DPS, and BPS as reported in Value Line. He testified that the historical and forecast growth rates are prepared by analysts of an independent advisory service that is widely available to investors and should also provide an estimate of investor expectations. He testified that he includes both historical known growth rates and forecast growth rates, because it is reasonable to expect that investors consider both sets of data in deriving their expectations.

Public Staff witness Hinton testified that he also incorporated the consensus of various analysts' forecasts of five-year EPS growth rate projections as reported in Yahoo Finance. He testified the dividend yields and growth rates for each of the companies and for the average for his comparable proxy groups are shown in Exhibit JRH-4.

Public Staff witness Hinton concluded that based upon his DCF analysis that a reasonable expected dividend yield is 1.7% with an expected growth rate of 6.0% to 7.0%. He testified that his DCF analysis produces a cost of common equity for his comparable proxy group of water utilities of 7.7% to 8.7%. Based upon the DCF analysis for the comparable group of LDCs, he determined that a reasonable expected dividend yield is 2.6%, with an expected growth rate of 5.7% to 6.7%, which yields a range of results of 8.3% to 9.3% for the cost of equity.

He testified that his ultimate DCF based cost of equity is based on the average estimates for the two groups of companies, which he summarized in his Hinton Exhibit 8 that quantifies an approximate range of DCF based cost of equity estimates of 8.48% to 8.80% for his DCF based cost of equity estimate of 8.64%.

Witness Hinton testified that the equity risk premium method can be defined as the difference between the expected return on a common stock and the expected return on a debt security. The differential between the two rates of return are indicative of the return investors require in order to compensate them for the additional risk involved with an investment in the company's common stock over an investment in the company's bonds that involves less risk.

Witness Hinton testified that his method relies on approved returns on common equity for water utility companies from various public utilities commissions that is published by the Regulatory Research Associates, Inc. (RRA), within SNL Global Market Intelligence. In order to estimate the relationship with a representative cost of debt capital, he regressed the average annual allowed equity returns with the average Moody's A-rated yields for Public Utility Bonds from 2006 through 2019. His regression analysis which incorporates years of historical data is combined with recent monthly yields to provide an estimate of the current cost of common equity.

Witness Hinton testified that the use of allowed returns as the basis for the expected equity return has two strengths over other approaches that involve various models that estimate the expected equity return on common stocks and subtracting a representative cost of debt. He testified that one strength of his approach is that authorized returns on equity are generally arrived at through lengthy investigations by various parties with opposing views on the rate of return required by investors. He testified that it is reasonable to conclude that the approved allowed returns are good estimates of the cost of equity.

Public Staff witness Hinton testified that the summary data of risk premiums shown on his Exhibit JRH-5, page 1 of 2, indicates that the average risk premium is 5.00%, with a maximum premium of 5.78%, and minimum premium of 3.73%, which when combined with the last six months of Moody's A-rated utility bond yields produces yields with an average cost of equity of 8.70%, a maximum cost of equity of 9.48%, and a minimum cost of equity of 7.44%. To better estimate the current cost of equity, he performed a statistical regression analysis as shown on Exhibit JRH 5, page 2 of 2 in order to quantify the relationship of allowed equity returns and bond costs. He testified that by applying the risk

premium to the current utility bond cost of 3.71%, resulted in a current estimate of the equity risk premium of equity of 9.57%.

Public Staff witness Hinton concluded that based on all of the results of his DCF model that indicate a cost of equity from 8.48% to 8.80% with a central point estimate of 8.64%, and the risk premium model that indicates a cost of equity of 9.57%, he determined that the investor required rate of return on common equity for CWSNC is between 9.11% which he rounded to 9.10% as shown on Hinton Exhibit 8.

Public Staff witness Hinton testified as to the reasonableness of his recommended return, that he considered the pre-tax interest coverage ratio produced by his cost estimates for the cost equity. He testified that based on his recommended capital structure, cost of debt, and equity return of 9.10%, the pre-tax interest coverage ratio is approximately 3.1 times. He testified that this tax interest coverage and a funds flow to debt ratio of 25.0%, as shown on Supplemental Hinton Exhibit 10, should allow CWSNC to qualify for a single "A" bond rating.

Witness Hinton also performed a comparable earnings analysis and a CAPM analysis solely as checks on the results of this DCF and Risk Premium Regression Analysis. He testified that his comparable earnings analysis for a group of eight water utilities and nine LDC companies produced a five-year average return on equity of 9.83%. He testified that a weakness is that actual earned rates of return can be impacted by factors outside the company's control, such as weather, inflation, and tax changes, including deferred income taxes. These unforeseen developments can cause a company's earned rate of return to exceed or fall short of its cost of capital during any certain period making this method somewhat less reliable than other cost of capital methods, and it suffers from circular reasoning. In addition, he testified that earned rates of return on equity may often include non-regulated income. He testified that his CAPM analysis utilizing his preferred geometric mean return produced return on equity estimates of 7.65% and 7.68% that are at the low end of CWSNC's cost of equity. As such, he testified his CAPM provides a limited check on his recommended cost of equity.

Witness Hinton in his direct testimony had a recommended a rate of return on common equity of 9.10% with a downward 10 basis point adjustment to reflect reduced risk due to the consumption adjustment mechanism CWSNC applied for in this proceeding. His resulting recommended allowed rate return on equity was thus 9.00%. After CWSNC withdrew its request for a consumption adjustment mechanism, witness Hinton filed supplemental testimony withdrawing this 10-basis point downward adjustment.

Witness Hinton testified that his recommended return on common equity takes into consideration the impact of the water and sewer system improvement charges (WSIC and SSIC) pursuant to N.C.G.S. § 62-113.12 on CWSNC's financial risk. He testified that the WSIC and SSIC mechanisms provide the ability for enhanced cost recovery of the eligible capital improvements which reduces regulatory lag through incremental and timely rate increases. He testified he believes this mechanism is seen by debt and equity

investors as supportive regulation that mitigates business and regulatory risk. Witness Hinton testified that he believes that this mechanism is noteworthy and is supportive of his 9.10% return on equity recommendation.

Witness Hinton testified that it is not appropriate to add a risk premium to the cost of equity due to the size of the company. He testified that CWSNC is owned by Corix Infrastructure, Inc. (Corix), which is owned by BCIMC. Corix has a significant influence over the balances of common equity and long-term debt of Utilities, Inc. and CWSNC. Corix determines the amounts of dividend payments to BCIMC and the frequency of those payments. He testified that from a regulatory policy perspective; ratepayers should not be required to pay higher rates because they are located in the franchise area of a utility of a size which is arbitrarily considered to be small. He further testified that if such adjustments were routinely allowed, an incentive would exist for large existing utilities to form subsidiaries when merging or even to split-up into subsidiaries as to obtain higher allowed returns. He further testified that CWSNC operates in a franchise environment that insulates the company from competition and it operates with procedures in place that allow for rate adjustments for eligible capital improvements, cost increases, and other unusual circumstances that impact its earnings. Witness Hinton testified that CWSNC operates in the water and sewer industry, where expensive bottled water provides the only alternative to utility service. It is factually correct that rating agencies and investors add a risk factor for small companies with relatively limited capital resources; however, the inherent protection from competition removes this risk that would otherwise be a concern to investors.

Witness Hinton noted that he also testified to these same size adjustment concerns in the last CWSNC rate case, Sub 360, where the Commission found that a size adjustment was not warranted. He testified that similar arguments were made in a 1997 CWS System, Inc., rate case, Docket No. W-778, Sub 31, by witness Hanley of AUS Consultants, who relied on similar cost of capital methods as witness D'Ascendis, as noted on pages 824-25 in its Eighty-Seventh Report of Orders and Decisions. In CWSNC's 1994 rate case, Docket No. W-354, Sub 128, the Commission was not persuaded to accept an adjustment for small size and its elevated risk, as noted on page 520 in its Eighty-Fourth Report on Orders and Decisions. Tr. vol. 7, 785–86. In a rate case brought by North Carolina Natural Gas, Inc., Docket No. G-21, Sub 293, the explicit consideration of the small size of a regulated utility was argued before this Commission. In its December 6, 1991 Order in that case, the Commission disagreed with the Company witness who testified that the Company's small size warranted the selection of other small sized companies in his proxy group. Witness Hinton testified that while there are published studies that address how the small size of a company relates to higher risks, he is aware of only one study by Dr. Annie Wong¹⁶ that focuses on the size of regulated utilities and risk. He testified that Dr. Wong has tested the data for a size premium in utilities and concluded that "unlike industrial stocks, utility stocks do not exhibit a significant size premium. As explained, there are several reasons why such a size

¹⁶ Annie Wong, "Utility Stocks and the Size Effect: An Empirical Analysis," Journal of the Midwest Finance Association, pp. 95-101, (1993).

premium would not be attributable to utilities because they are regulated closely by state and federal agencies and commissions, and hence, their financial performance is monitored on an ongoing basis by both the state and federal governments.” Tr. vol. 7, 187.

Public Staff Witness Hinton Cross-Examination

Witness Hinton testified on cross-examination that the electric and natural gas industries in North Carolina have a number of surcharge rate adjustment mechanisms available to them which serve to enhance revenue recovery and thereby stabilize earnings and that those mechanisms also employ deferral accounting as part of the true-up process. Witness Hinton also testified that all utilities are concerned with regulatory lag and that surcharge rate adjustment mechanisms reduce regulatory lag, . . . maybe significantly” Tr. vol. 7, 105, 93.

Witness Hinton also testified on cross-examination that during “the last couple years your [CWSNC’s] earned returns have been less than your allowed returns.” *Id.* at 104.

Witness Hinton further stated that he considered his initial proposal (which he withdrew when CWSNC withdrew its request to implement a CAM) to impose a 10-basis point downward adjustment with respect to his recommended rate of return on common equity in consideration of the Company’s initially-proposed CAM to be a “material” adjustment. *Id.* at 111.

Witness Hinton also testified on cross-examination that the 23-basis point reduction in CWSNC’s cost of long-term debt from 5.59% at the time the Company filed its Verified Rate Case Application to 5.36% at September 30, 2019, was “material.” *Id.* at 133.

Law Governing the Commission’s Decision on Return on Equity

In the absence of a settlement agreed to by all parties the Commission must exercise its independent judgment and arrive at its own independent conclusion as to all matters at issue, including the rate of return on common equity. See, e.g., *CUCA I*, 348 N.C. at 466, 500 S.E.2d 707. In order to reach an appropriate independent conclusion regarding the rate of return on common equity the Commission should evaluate the admitted evidence, particularly that presented by conflicting expert witnesses. *State ex rel. Utils. Comm’n v. Cooper*, 366 N.C. 484, 739 S.E.2d 541, 546-47 (2013) (*Cooper I*). In this case the evidence relating to the Company’s cost of equity capital was presented by Company witness D’Ascendis and Public Staff witness Hinton. No rate of return on common equity expert evidence was presented by any other party.

The baseline for establishment of an appropriate rate of return on common equity is the constitutional constraints established by the decisions of the United States Supreme Court in *Bluefield Water Works & Improvement Co., v. Pub. Serv. Comm’n of W. Va.*, 262

U.S. 679 (1923) (*Bluefield*), and *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) (*Hope*) which, as the Commission has previously noted, establish that:

To fix rates that do not allow a utility to recover its costs, including the cost of equity capital, would be an unconstitutional taking. In assessing the impact of changing economic conditions on customers in setting an ROE, the Commission must still provide the public utility with the opportunity, by sound management, to (1) produce a fair profit for its shareholders, in view of current economic conditions, (2) maintain its facilities and service, and (3) compete in the marketplace for capital.

DEC Sub 1146 Order at 50; see also *State ex rel. Utils. Comm'n v. Gen. Tel. Co.*, 281 N.C. 318, 370, 189 S.E.2d 705, 738 (1972) (*General Telephone*). As the North Carolina Supreme Court held in *General Telephone*, these factors constitute “the test of a fair rate of return declared” in *Bluefield* and *Hope. Id.*

The rate of return on common equity is, in fact, a cost. The return that equity investors require represents the cost to the utility of equity capital.

[T]he cost of capital to the utility is synonymous with the investor’s return, and the cost of capital is the earnings which must be generated by the investment of that capital in order to pay its price, that is, in order to meet the investor’s required rate of return.

Morin, Roger A., *Utilities’ Cost of Capital* 19-21 (Public Utilities Reports, Inc. 1984). “The term ‘cost of capital’ may [also] be defined as the annual percentage that a utility must receive to maintain its credit, to pay a return to the owners of the enterprise, and to ensure the attraction of capital in amounts adequate to meet future needs.” Phillips, Charles F., Jr., *The Regulation of Public Utilities* (Public Utilities Reports, Inc. 1993), at 388.

Long-standing decisions of the North Carolina Supreme Court have recognized that the Commission’s subjective judgment is a necessary part of determining the authorized rate of return on common equity. *Public Staff*, 323 NC at 490, 374 S.E.2d at 369. Likewise, the Commission has observed as much in exercising its duty to determine the rate of return on common equity, noting that such determination is not made by application of any one simple mathematical formula:

Throughout all of its decisions, the [United States] Supreme Court has formulated no specific rules for determining a fair rate of return, but it has enumerated a number of guidelines. The Court has made it clear that confiscation of property must be avoided, that no one rate can be considered fair at all times and that regulation does not guarantee a fair return. The Court also has consistently stated that a necessary prerequisite for profitable operations is efficient and economical

management. Beyond this is a list of several factors the commissions are supposed to consider in making their Decisions, but no weights have been assigned.

The relevant economic criteria enunciated by the Court are three: financial integrity, capital attraction and comparable earnings. Stated another way, the rate of return allowed a public utility should be high enough: (1) to maintain the financial integrity of the enterprise, (2) to enable the utility to attract the new capital it needs to serve the public, and (3) to provide a return on common equity that is commensurate with returns on investments in other enterprises of corresponding risk. These three economic criteria are interrelated and have been used widely for many years by regulatory commissions throughout the country in determining the rate of return allowed public utilities.

In reality, the concept of a fair rate of return represents a “zone of reasonableness.” As explained by the Pennsylvania commission:

There is a range of reasonableness within which earnings may properly fluctuate and still be deemed just and reasonable and not excessive or extortionate. It is bounded at one level by investor interest against confiscation and the need for averting any threat to the security for the capital embarked upon the enterprise. At the other level it is bounded by consumer interest against excessive and unreasonable charges for service.

As long as the allowed return falls within this zone, therefore, it is just and reasonable It is the task of the commissions to translate these generalizations into quantitative terms.

Charles F. Phillips, Jr., *The Regulation of Public Utilities*, 3d ed. 1993, pp. 381-82. (notes omitted)

Order Granting General Rate Increase, *Application of Carolina Power & Light Company, d/b/a Progress Energy Carolinas, Inc., for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina*, No. E-2, Sub 1023, at 35-36 (N.C.U.C. May 30, 2013), *aff'd*, *State ex rel. Utils. Comm'n v. Cooper*, 367 N.C. 444, 761 S.E.2d 640 (2014) (2013 DEP Rate Case Order) (additions and omissions after the first quoted paragraph in original).

Moreover, in setting rates the Commission must not only adhere to the dictates of both the United States and North Carolina Constitutions, but, as has been held by the North Carolina Supreme Court, it must set rates as low as possible consistent with constitutional law. *State ex rel. Utils. Comm'n v. Pub. Staff-N. Carolina Utils. Comm'n*, 323 N.C. 481, 490, 374 S.E.2d 361, 370 (1988) (*Public Staff*). Further, the North Carolina General Assembly has provided that the Commission must also set rates employing a multi-element formula set forth in N.C.G.S. § 62-133. The formula requires consideration of elements beyond just the rate of return on equity element, and it inherently necessitates that the Commission make many subjective determinations, in addition to the subjectivity required to determine the rate of return on equity. The subjective decisions the Commission must make as to each of the elements of the formula can and often do have multiple and varied impacts on all of the other elements of the formula. In other words, the formula elements are intertwined and often interdependent in their impact to the setting of just and reasonable rates.

The fixing of a rate of return on the cost of property used and useful to the provision of service (as determined through the end of the historic 12-month test period prior to the proposed effective date of a requested change in rates, and adjusted for proven changes occurring up to the close of the evidentiary hearing) is but one of several interdependent elements of the statutory formula to be used in setting just and reasonable rates. See N.C.G.S. § 62-133. North Carolina General Statute § 62-133(b)(4) provides in pertinent part that the Commission shall:

Fix such rate of return on the cost of the property . . . as will enable the public utility by sound management [1] to produce a fair return for its shareholders, *considering changing economic conditions and other factors* . . . [2] to maintain its facilities and services in accordance with the reasonable requirements of its customers in the territory covered by its franchise, and [3] to compete in the market for capital funds on terms that are reasonable and that are fair to its customers and to its existing investors. [Emphasis added.]

The North Carolina Supreme Court has interpreted the above-emphasized language as requiring the Commission to make findings regarding the impact of changing economic conditions on customers when determining the proper rate of return on common equity for a public utility. *Cooper I*, 366 N.C. at 495, 739 S.E.2d at 548. The Commission must exercise its subjective judgment so as to balance two competing rate of return on common equity-related factors—the economic conditions facing the Company’s customers and the Company’s need to attract equity financing on reasonable terms in order to continue providing safe and reliable service. 2013 DEP Rate Case Order at 35-36. The Commission’s determination in setting rates pursuant to N.C.G.S § 62-133, which includes the fixing of the rate of return on common equity, always takes into account affordability of public utility service to the using and consuming public. The impact of changing economic conditions on customers is embedded in the testimony of expert witnesses regarding their analyses of the rate of return on common equity using various economic models widely used and accepted in utility regulatory rate-setting proceedings. 2013 DEP Rate Case Order, at 38. Further,

[t]he Commission always places primary emphasis on consumers' ability to pay where economic conditions are difficult. By the same token, it places the same emphasis on consumers' ability to pay when economic conditions are favorable as when the unemployment rate is low. Always there are customers facing difficulty in paying utility bills. The Commission does not grant higher rates of return on equity when the general body of ratepayers is in a better position to pay than at other times

Id. at 37. Economic conditions existing during the modified test year, at the time of the public hearings, and at the date of the issuance of the Commission's order setting rates will affect not only the ability of the utility's customers to pay rates, but also the ability of the utility to earn the authorized rate of return during the period the new rates will be in effect. However, in setting the rate of return, just as the Commission is constrained to address the impact of difficult economic times on customers' ability to pay for service by establishing a lower rate of return on common equity in isolation from the many subjective determinations that must be made in a general rate case, it likewise is constrained to address the effect of regulatory lag¹⁷ on the Company by establishing a higher rate of return on common equity in isolation. Instead, the Commission sets the rate of return considering both of these negative impacts taken together in its ultimate decision fixing a utility's rates.

Thus, in summary and in accordance with the applicable law, the Commission's duty under N.C.G.S. § 62-133 is to set rates as low as reasonably possible to the benefit of the customers without impairing the Company's ability to attract the capital needed to provide reliable electric service and recover its cost of providing service. The Commission is guided by this premise when it makes its determination of the appropriate rate of return on common equity.

It is against this backdrop of overarching principles that the Commission analyzes the evidence presented in this case.

¹⁷ Regulatory lag exists where a utility's realized, earned return is less than its authorized return negatively affecting the shareholder's return on investment as other expenses and debts owed are paid ahead of investor return.

Discussion and Application of Law to the Facts in this Case Regarding the Issue of Rate of Return on Common Equity

The Commission has carefully evaluated the testimony of CWSNC witness D'Ascendis and Public Staff witness Hinton. The results of each of the models or methods used by these two witnesses to derive the return on equity that each witness recommends is shown below:

<u>Utility Proxy Group</u>	<u>D'Ascendis Rebuttal Exhibits</u>	<u>D'Ascendis Late-Filed Exhibits</u>	<u>Hinton</u>
DCF	8.81%	8.81%	8.64%
Risk Premium	10.12%	10.00%	9.57%
PRPM	10.84%	10.73%	
Total Market RPM	9.39%	9.27%	
CAPM	9.35%	9.29%	7.65-8.96%*
Traditional CAPM	8.90%	8.84%	
ECAPM	9.80%	9.74%	
Comparable Earnings	————	————	9.83%*
<u>Non-Price Regulated Proxy Group</u>	11.29%	11.16%	————
DCF	11.63%	11.63%	
Risk Premium	11.41%	11.23%	
CAPM	10.44%	10.39%	
Indicated on Return on Equity Before Adjustment	9.80%	9.75%	9.10%
Size Adjustment	0.40%	0.40%	————
Recommended Return on Equity	10.20%	10.15%	9.10%
* Note: Provided solely as a check and not used in formulating this witness's recommended allowed rate of return on common equity.			

The range of the rate of return on common equity recommendations from the two expert witnesses is 9.10% to 10.20%. Underlying the lower rate of return on common equity recommendation of 9.10%, is a rate of return on common equity range of 7.65% to 9.83%, according to witness Hinton's testimony concerning his cost of common equity analyses. Similarly, underlying the higher rate of return on common equity recommendation of 10.20% is a range of 8.81% to 11.29%, according to witness D'Ascendis' rebuttal testimony concerning his cost of common equity analyses. Such a wide range of estimates by expert witnesses is not atypical in proceedings before the Commission with respect to the return on the equity issue. Neither is the seemingly endless debate and habitual differences in judgment among expert witnesses on the virtues of one model or method versus another and how to best determine and measure

the required inputs of each model in representing the interests of the party on whose behalf they are testifying. Nonetheless, the Commission is uniquely situated, qualified, and required to use its impartial judgment to determine the return on equity based on the testimony and evidence in this proceeding in accordance with the legal guidelines discussed above.

In doing so the Commission finds that the DCF (8.81%), Risk Premium (10.00%) and CAPM (9.29%) model results provided by witness D'Ascendis, as updated to use current rates in D'Ascendis Late-Filed Exhibit No. 1, as well as the risk premium (9.57%) analysis of witness Hinton, are credible, probative, and are entitled to substantial weight as set forth below. The Commission further finds that the rate of return on common equity trends, particularly as embodied by data points in Public Staff D'Ascendis Cross-Examination Exhibits 1 and 2 to be credible, positive and corroborative evidence entitled to some weight.¹⁸ Accordingly, the evidence presented concerning other authorized rates of return on equity, when put into proper context, lends substantial support and corroboration to a finding that a 9.50% rate of return on common equity is appropriate in this case.

Company witness D'Ascendis, noting that CWSNC is not publicly traded, first established a group of six relatively comparable risk water companies that are publicly traded (Utility Proxy Group). He testified that use of relatively comparable risk companies as proxies is consistent with principles of fair rate of return established in the Hope and Bluefield cases, which are recognized as the primary standards for the establishment of a fair return for a regulated public utility. He then applied the DCF, the CAPM, and the risk premium models to the market data of the Utility Proxy Group. Witness D'Ascendis' DCF model indicated a cost of equity of 8.81%, his CAPM model indicated a cost of equity of 9.29%, and his Risk Premium model indicated a cost of equity of 10.00%. The Commission finds and concludes that analyses using interest rate forecasts rely unnecessarily on projections. The Commission approves the use of current interest rates, rather than projected near-term or long-term interest rates. The Commission finds witness D'Ascendis' late-filed exhibit Risk Premium Model and his late-filed exhibit CAPM analysis using the current 30-year Treasury yields to be credible, probative and entitled to substantial weight.

Witness Hinton applied a risk premium analysis by performing a regression analysis using the allowed returns on common equity for water utilities from various public utility commissions, as reported in an RRA Water Advisory, with the average Moody's

¹⁸ The Commission determines the appropriate rate of return on common equity based upon the evidence and particular circumstances of each case. However, the Commission believes that the rate of return on common equity trends and decisions by other regulatory authorities deserve some weight, as (1) they provide a check or additional perspective on the case-specific circumstances, and (2) the Company must compete with other regulated utilities in the capital markets, meaning that a rate of return on common equity significantly lower than that approved for other utilities of comparable risk would undermine the Company's ability to raise necessary capital, while a rate of return on common equity significantly higher than other utilities of comparable risk would result in customers paying more than necessary. In this proceeding, witness Hinton's risk premium analysis, as well as Public Staff D'Ascendis Cross-Examination Exhibit No. 1, page 2 and No. 2 provide credible, positive and corroborative evidence.

A-rated bond yields for public utility bonds from 2006 through 2019. The results of the regression analysis were combined with recent monthly yields to provide the current cost of equity. According to witness Hinton, the use of allowed returns as the basis for the expected equity return has strengths over other risk premium approaches that estimate the expected return on equity and subtract a representative cost of debt. He testified that one strength of his approach is that authorized returns on equity are generally arrived at through lengthy investigations by various parties with opposing views on the rate of return required by investors. Thus, it is reasonable to conclude that the approved returns are good estimates for the cost of equity. Witness Hinton testified that applying the significant statistical relationship of the allowed equity returns and bond yields from the regression analysis and adding current utility bond cost of 3.71% resulted in a current estimate of the cost of equity of 9.57%.

The average of witness D'Ascendis' Utility Proxy Group late-filed exhibit DCF result of 8.81%, CAPM result of 9.29% and RPM result of 10.00% and witness Hinton's RPM of 9.57% is 9.42%. A return on common equity of 9.50% is thus supported by the average of the results of the four above-listed cost of equity models which the Commission finds are credible, probative, and entitled to consideration based on the record in this proceeding.

The Commission gives no weight to the DCF, CAPM and comparable earnings analyses of witness Hinton who presented his CAPM and comparable earnings methods only as a check on his DCF and Risk Premium Regression analyses. For reasons generally stated by witness D'Ascendis, the Commission concludes that witness Hinton's use of a proxy group of natural gas companies in his DCF and CAPM analyses is inappropriate for determining the appropriate return on equity in this case. The indicated returns on equity using the water proxy groups in witness Hinton's DCF (8.48%) and CAPM (7.65% to 8.96% with a midpoint of 8.31%) are outliers as they fall far below the other rate of return on common equity analyses in this proceeding.

Witness Hinton's comparable earnings analyses are not reliable as the earned rates of return on equity listed in Hinton Exhibit 6 contain non-regulated earnings and increased earnings resulting from deferred income taxes. Witness D'Ascendis on cross-examination testified that American States Water has significant operations in Army bases around the country and also has an electric utility. Although the California Utilities Commission on March 22, 2018, approved an 8.90% rate of return on common equity for Golden State Water Company which is a wholly-owned subsidiary of American States Water as shown on Public Staff D'Ascendis Cross-Examination Exhibit 6, American States Water achieved earned rates of return on equity of 11.40% in 2018 and 12.0% in 2019 as shown on Hinton Exhibit 6. In addition, although the most recent rate order for Middlesex Water Co. in New Jersey was issued on March 24, 2018, which approved a 9.60% rate of return on common equity as shown on Public Staff D'Ascendis Cross-Examination Exhibit 3, the Middlesex Water Co. earned rate of return on common equity for 2018 was 13.0% and 2019 earned rate of return on common equity was 12.0% as shown on Hinton Exhibit 6.

In addition to estimating the cost of equity for his Utility Proxy Group of publicly-traded water utilities, witness D'Ascendis attempted to estimate the cost of equity for another proxy group consisting of 10 domestic, non-price regulated companies. The rebuttal results of the DCF, RPM, and CAPM applied to the non-price regulated proxy group are 11.63%, 11.23%, and 10.39%, respectively. The Commission concludes that these results are unreasonably high. Each of these results is higher than witness D'Ascendis' estimates of the cost of equity for his own Utility Proxy Group and deserves no weight. The Commission further concludes that given the difference in these results, the risk of the two groups is not equal and the Utility Proxy Group is more reliable as a proxy for the investment risk of common equity in CWSNC.

After determining that the indicated cost of equity from the DCF, CAPM, and risk premium methods applied to both of his proxy groups equals in his rebuttal 9.80% rate of return on common equity, witness D'Ascendis then adjusted the indicated cost of equity upward by 0.40% to reflect CWSNC's smaller size compared to companies in his Utility Proxy Group. He testified that the size of the company is a significant element of business risk for which investors expect to be compensated through higher returns. Witness D'Ascendis calculated his size adjustment as described in his prefiled direct testimony and stated that even though a 3.94% upward size adjustment is indicated, he applies a 0.40% size premium to CWSNC's indicated common equity cost rate.

Witness Hinton testified that he does not believe it is appropriate to add a risk premium to the cost of equity of CWSNC due to size for several reasons. First, from a regulatory policy perspective, witness Hinton stated that ratepayers should not be required to pay higher rates because they are located in the franchise area of a utility that is arbitrarily considered to be small. Further, if such adjustments were routinely allowed, an incentive would exist for large utilities to form subsidiaries or split-up subsidiaries to obtain higher returns. In addition, he noted that CWSNC operates in a franchise environment that insulates the Company from the competition with procedures in place for rate adjustments for circumstances that impact its earnings. Finally, while witness Hinton stated that while there are studies that address how the small size of a company relates to higher returns, he is aware of only one study that focuses on the size of regulated utilities and risk and that study concluded that utility stocks do not exhibit a significant differential in risk due to size. In rebuttal, witness D'Ascendis maintained that a small size adjustment was necessary based on the results of studies he cited and discussed. He contended that the study concerning size premiums for utilities discussed by witness Hinton was flawed.

The uncontroverted evidence is that both CWSNC and the Public Staff used the Utilities, Inc. capital structure and debt cost in this proceeding. CWSNC obtains all its debt and equity from CWSNC's parent company Utilities, Inc. CWSNC does not participate in the debt markets. The Corix CEO, Gordon Barefoot, testified that Corix, the parent company of Utilities, Inc., provides access to favorable terms for debt financing in capital markets.

Based upon the foregoing and the entire record in this proceeding, the Commission concludes that a size adjustment of 0.40% is not warranted and should not be approved. The Commission determines there is insufficient evidence to authorize an adjustment to the approved rate of return on common equity in this case. The record simply does not indicate the extent to which CWSNC's size alone justifies the added risk premium. While a small water/wastewater utility might face greater risk than a publicly-traded peer group, because for example the service area was confined to a hurricane-prone coastal geographic area, evidence of such factual predicates is absent from the record. CWSNC has water and wastewater systems along the North Carolina coast, in the Piedmont, and in the mountains. The Commission notes that the witnesses also disagreed with respect to whether the studies discussed in the testimony concerning size and risk are reliable or even applicable to regulated utilities. The Commission concludes that the testimony regarding these studies is not convincing and does not support a size adjustment.

Having determined that the appropriate rate of return on common equity based upon the evidence in this proceeding is 9.50%, the Commission notes that there is considerable testimony concerning the authorized returns on equity for water utilities in other jurisdictions. While the Commission has relied upon the record in this proceeding and is certainly aware that returns in other jurisdictions can be influenced by many factors, such as different capital market conditions during different periods of time, settlements versus full litigation, the Commission concludes that the rate of return on common equity trends and decisions by other regulatory authorities deserve some weight as (1) they provide a check or additional perspective on the case-specific circumstances, and (2) the Company must compete with other regulated utilities in the capital markets, meaning that a rate of return significantly lower than that approved for other utilities of comparable risk would undermine the Company's ability to raise necessary capital, while a rate of return significantly higher than other utilities of comparable risk would result in customers paying more than necessary.

Public Staff D'Ascendis Cross-Examination Exhibit 2, which has RRA approved rate of return on common equity listings showing approved return on equity decisions for water utilities across the country from January 2014 through June 30, 2019, is helpful in illustrating that the average rate of return on common equity for water utilities was 9.59% in 2014, 9.79% in 2015, 9.71% in 2016, 9.31% in 2017, 9.45% in 2018, and in the only five reported cases for the first six months of 2019 the average is 9.60%. This authorized return data is generally supportive of the Commission approved return on equity of 9.50% based upon all the evidence in this proceeding.

These factors lead the Commission to conclude that a 9.50% rate of return on common equity is supported by the substantial weight of the evidence in this proceeding. However, to meet its obligation in accord with the holding in *Cooper I*, the Commission will next address the impact of changing economic conditions on customers.

In this case all parties had the opportunity to present the Commission with evidence concerning changing economic conditions as they affect customers. The testimony of witnesses D'Ascendis and Hinton, which the Commission finds entitled to

substantial weight, addresses changing economic conditions. As to the impact of changing economic conditions on CWSNC's customers, witness Hinton testified that he reviewed information on the economic conditions in the areas served by CWSNC, specifically, the 2016 and 2017 data on total personal income from the Bureau of Economic Analysis (BEA) and the 2019 Development Tier Designations published by the North Carolina Department of Commerce for the counties in which CWSNC's systems are located. The BEA data indicates that total personal income weighted by the number of water customers by county grew at a compound annual growth rate of approximately 3.1%.

Witness Hinton testified that the North Carolina Department of Commerce annually ranks the state's 100 counties based on economic well-being and assigns each a Tier designation. The most distressed counties are rated a "1" and the most prosperous counties are rated a "3". The rankings examine several economic measures such as, household income, poverty rates, unemployment rates, population growth, and per capita property tax base. For 2017, the average Tier ranking that has been weighted by the number of water customers by county is 2.5. He testified that both of these economic measures indicate that there has been improvement in the economic conditions for CWSNC's service area relative to the three previous CWSNC rate increases in Sub 360, Sub 356, and Sub 344 that were approved in 2019, 2017, and 2015, respectively.

Witness D'Ascendis testified concerning his review of economic conditions in North Carolina that he reviewed. He testified that he reviewed: unemployment rates from the United States, North Carolina, and the counties comprising CWSNC's service territory; the growth in Gross National Product (GDP) in both the United States and North Carolina; median household income in the United States and in North Carolina; and national income and consumption trends.

Witness D'Ascendis testified that the rate of unemployment has fallen substantially in North Carolina and the U.S. since late 2009 and early 2010, when the rates peaked at 10.00% and 12.00%, respectively. He testified that by April 2019, the unemployment rate had fallen to less than one-half of those peak levels: 3.30% nationally; and 3.60% in North Carolina.

Witness D'Ascendis testified that he was also able to review (seasonally unadjusted) unemployment rates in the counties served by CWSNC. At its peak, which occurred in late 2009 into early 2010, the unemployment rate in those counties reached an average 12.86% (58 basis points higher than the State-wide average); by April 2019, it had fallen to 3.68% (8 basis points higher than the state-wide average).

Witness D'Ascendis testified that for real Gross Domestic Product growth, there also has been a relatively strong correlation between North Carolina and the national economy (approximately 69%). Since the financial crisis, the national rate of growth at times (during portions of 2010 and 2012) outpaced North Carolina's rate of growth. He testified that since the second quarter of 2015; however, North Carolina has consistently exceeded the national growth rate.

As to median household income, witness D'Ascendis testified that the correlation between North Carolina and the U.S. is relatively strong (approximately 87% from 2005 through 2018). Since 2009, the years subsequent to the financial crisis, median household income in North Carolina has grown at a similar annual rate as the national median income (2.32% vs. 2.65%).

Witness D'Ascendis summarized stating in the Commission's order on Remand in Docket No. E-22, Sub 479, the Commission observed that economic conditions in North Carolina were highly correlated with national conditions, such that they were reflected in the analyses used to determine the cost of common equity. He testified that those relationships still hold: Economic conditions in North Carolina continue to improve from the recession following the 2008/2009 financial crisis, and they continue to be strongly correlated to conditions in the United States, generally. He testified that unemployment, at both the State and county level, continues to fall and remains highly correlated with national rates of unemployment; real Gross Domestic Product recently has grown faster in North Carolina than the national rate of growth, although the two remain fairly well correlated; and median household income also has grown faster in North Carolina than the rest of the Country, and remains strongly correlated with national levels.

The Commission's review also includes consideration of the evidence presented by 23 witnesses during the public witness hearings, almost all of whom presently are customers of CWSNC. The Commission held six evening hearings throughout CWSNC's North Carolina service territory to receive public testimony. The testimony presented at the hearings illustrates the difficult economic conditions facing many North Carolina citizens. The Commission accepts as credible, probative, and entitled to substantial weight the testimony of the public witnesses.

Based upon the general state of the economy and the continuing affordability of water and wastewater utility service, and after weighing and balancing factors affected by the changing economic conditions in making the subjective decisions required, the Commission concludes that an allowed rate of return on common equity of 9.50% will not cause undue hardship to customers even though some will struggle to pay the increased rates resulting from this decision. When the Commission's decisions are viewed as a whole, including the decision to establish the rate of return on common equity at 9.50%, the Commission's overall decision fixing rates in this general rate case results in lower rates to consumers in the existing economic environment.¹⁹

All of the scores of adjustments the Commission approves reduce the revenues to be recovered from ratepayers and the return to be paid to equity investors. Some

¹⁹ The Commission notes consumers pay rates, a charge in dollars per 1,000 gallons for the water they consume and a monthly flat rate for residential wastewater customers. They do not pay a "rate of return on equity," though it is a component of the Company's cost of providing service which is built into the billed rates. Investors are compensated by earning a return on the capital they invest in the business. Per the Commission determination of the rate of return on common equity in this matter, investors will have the opportunity to be paid in dollars for the dollars they invested at the rate of 9.50%.

adjustments reduce the authorized rate of return on investment financed by equity investors. The noted adjustments are made solely to reduce rates and provide rate stability to consumers (and return to equity investors) to recognize the difficulty for consumers to pay in the current economic environment. While the equity investor's cost was calculated by resort to a rate of return on common equity of 9.50% instead of the 10.20% recommended by CWSNC witness D'Ascendis on rebuttal. This is only one approved adjustment that reduced ratepayer responsibility and equity investor reward. Many other adjustments reduced the dollars the investors actually have the opportunity to receive. Therefore, nearly all of these other adjustments reduce ratepayer responsibility and equity investor returns in compliance with the Commission's responsibility to establish rates as low as reasonably permissible without transgressing constitutional constraints, and thus, inure to the benefit of consumers' ability to pay their bills in this economic environment.

Despite the improving economic conditions and their effects on CWSNC's customers, the Commission recognizes the financial difficulty that an increase in CWSNC's rates may create for some of CWSNC's customers, especially low-income customers. As shown by the evidence, relatively small changes in the rate of return on common equity have a substantial impact on a utility's base rates. Therefore, the Commission has carefully considered changing economic conditions and their effects on CWSNC's customers in reaching its decision regarding CWSNC's approved rate of return on common equity.

The Commission recognizes that the Company is investing significant sums in system improvements to serve its customers, thus requiring the Company to maintain its creditworthiness in order to compete for large sums of capital on reasonable terms. The Commission must weigh the impact of changing economic conditions on CWSNC's customers against the benefits that those customers derive from the Company's ability to provide safe, adequate, and reliable water and wastewater service. Safe, adequate, and reliable water and wastewater service is essential to the well-being of CWSNC's customers.

The Commission finds and concludes that these investments by the Company provide significant benefits to CWSNC's customers. The Commission concludes that the return on equity approved by the Commission in this proceeding appropriately balances the benefits received by CWSNC's customers from CWSNC's provision of safe, adequate, and reliable water and wastewater service with the difficulties that some of CWSNC's customers will experience in paying CWSNC's increased rates.

The Commission notes further that its approval of a rate of return on common equity at the level of 9.50% or for that matter at any level, is not a guarantee to the Company that it will earn a rate of return on common equity at that level. Rather, as North Carolina law requires, setting the rate of return on common equity at this level merely affords CWSNC the opportunity to achieve such a return. The Commission finds and concludes, based upon all the evidence presented, that the rate of return on common equity provided for herein will indeed afford the Company the opportunity to earn a

reasonable and sufficient return for its shareholders while at the same time producing rates that are just and reasonable to its customers.

Capital Structure

CWSNC witness D'Ascendis' direct testimony recommended the use of the actual capital structure of Utilities, Inc. of 52.04% long-term debt and 47.96% common equity as of March 31, 2019.

In his testimony Public Staff witness Hinton recommended a 50.90% long-term debt and 49.10% common equity capital structure based upon updated information provided by CWSNC concerning the Utilities, Inc. actual capital structure at September 30, 2019. The Partial Stipulation also supports a 50.90% long-term debt and 49.10% common equity capital structure. No other party presented evidence as to a different capital structure.

Accordingly, the Commission finds that the recommended capital structure of 49.10% common equity and 50.90% long-term debt is just and reasonable to all parties in light of all the evidence presented.

Cost of Debt

In its Application CWSNC proposed a cost rate for long-term debt of 5.59%. In his testimony, witness Hinton recommended the cost of debt 5.36% as of September 30, 2019. In addition, the Stipulation includes a cost of debt rate of 5.36%. No other party offered any evidence supporting a debt cost rate below 5.36%.

Therefore, the Commission finds that the use of a debt cost rate of 5.36% is just and reasonable to all parties based upon the evidence presented in this proceeding.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 60

Revenue Requirement

The following schedules summarize the gross revenue and overall rate of return that the Company should have a reasonable opportunity to achieve based on the increases in revenues approved in this Order for each rate entity. These schedules, illustrating the Company's gross revenue requirements, incorporate the adjustments found appropriate by the Commission in this Order.

SCHEDULE I

Carolina Water Service, Inc. of North Carolina

Docket No. W-354, Sub 364
 Net Operating Income for a Return
 For the Twelve Months Ended March 31, 2019
 CWSNC Combined Operations

	Present Rates	Increase Approved	After Approved Increase
Operating Revenues:			
Service revenues	\$33,852,232	\$4,969,441	\$38,821,673
Miscellaneous revenues	387,492	14,956	402,448
Uncollectibles	<u>(271,142)</u>	<u>(38,638)</u>	<u>(309,780)</u>
Total operating revenues	<u>33,968,582</u>	<u>4,945,759</u>	<u>38,914,341</u>
Operating Revenue Deductions:			
Salaries and wages – Maintenance	4,949,710	0	4,949,710
Purchased power	2,103,043	0	2,103,043
Purchased water and sewer	2,219,243	0	2,219,243
Maintenance and repair	3,120,935	0	3,120,935
Maintenance testing	544,432	0	544,432
Meter reading	206,176	0	206,176
Chemicals	693,596	0	693,596
Transportation	534,200	0	534,200
Operating expense charged to plant	(665,133)	0	(665,133)
Outside services – other	1,191,299	0	1,191,299
Salaries and wages – General	2,004,409	0	2,004,409
Office supplies & other office exp.	568,864	0	568,864
Regulatory commission expense	307,754	0	307,754
Pension and other benefits	1,600,158	0	1,600,158
Rent	330,308	0	330,308
Insurance	782,562	0	782,562
Office utilities	747,670	0	747,670
Miscellaneous	218,417	0	218,417
Depreciation expense	6,580,711	0	6,580,711
Amortization of CIAC	(1,476,955)	0	(1,476,955)
Amortization of PAA	(76,623)	0	(76,623)
Amortization of ITC	(579)	0	(579)
Franchise and other taxes	(655)	0	(655)
Property taxes	268,734	0	268,734
Payroll taxes	527,428	0	527,428
Regulatory fee	44,159	6,429	50,588
Deferred income tax	(69,128)	0	(69,128)
State income tax	75,474	123,484	198,958
Federal income tax	618,133	1,011,327	1,629,460
Rounding	<u>0</u>	<u>1</u>	<u>1</u>
Total operating revenue deductions	<u>27,948,343</u>	<u>1,141,241</u>	<u>29,089,584</u>
Net operating income for a return	<u>\$6,020,239</u>	<u>\$3,804,518</u>	<u>\$9,824,757</u>

SCHEDULE II

Carolina Water Service, Inc. of North Carolina

Docket No. W-354, Sub 364
 Original Cost Rate Base
 For the Twelve Months Ended March 31, 2019
 CWSNC Combined Operations

<u>Item</u>	<u>Amount</u>
Plant in service	\$238,212,084
Accumulated depreciation	(57,897,943)
Net plant in service	<u>180,314,141</u>
Cash working capital	2,404,800
Contributions in aid of construction	(40,270,675)
Advances in aid of construction	(32,940)
Accumulated deferred income taxes	(5,995,444)
Customer deposits	(315,447)
Inventory	271,956
Gain on sale and flow back taxes	(417,811)
Plant acquisition adjustment	(837,878)
Excess book value	0
Cost-free capital	(261,499)
Average tax accruals	(143,198)
Regulatory liability for excess deferred taxes	(3,941,344)
Deferred charges	2,122,707
Pro forma plant	<u>0</u>
Original cost rate base	<u><u>\$132,897,368</u></u>
Rates of return:	
Present	4.53%
Approved	7.39%

SCHEDULE III

Carolina Water Service, Inc. of North Carolina

Docket No. W-354, Sub 364

Statement of Capitalization and Related Costs
 For the Twelve Months Ended March 31, 2019
 CWSNC Combined Operations

	<u>Ratio</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost</u>	<u>Net Operating Income</u>
PRESENT RATES				
Long-Term Debt	50.90%	\$ 67,644,760	5.36%	\$3,625,759
Common Equity	<u>49.10%</u>	<u>65,252,608</u>	3.67%	<u>2,394,480</u>
Total	<u>100.00%</u>	<u>\$132,897,368</u>		<u>\$6,020,239</u>
APPROVED RATES				
Long-Term Debt	50.90%	\$ 67,644,760	5.36%	\$3,625,759
Common Equity	<u>49.10%</u>	<u>65,252,608</u>	9.50%	<u>6,198,998</u>
Total	<u>100.00%</u>	<u>\$132,897,368</u>		<u>\$9,824,757</u>

SCHEDULE I-A
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Net Operating Income for a Return
 For the Twelve Months Ended March 31, 2019
 CWSNC Water Operations

	Present <u>Rates</u>	Increase <u>Approved</u>	After Approved <u>Increase</u>
Operating Revenues:			
Service revenues	\$17,485,912	\$1,785,873	\$19,271,785
Miscellaneous revenues	189,818	5,357	195,175
Uncollectibles	<u>(129,396)</u>	<u>(13,215)</u>	<u>(142,611)</u>
Total operating revenues	<u>17,546,334</u>	<u>1,778,015</u>	<u>19,324,349</u>
Operating Revenue Deductions:			
Salaries and wages – Maintenance	2,684,228	0	2,684,228
Purchased power	1,048,858	0	1,048,858
Purchased water and sewer	1,478,502	0	1,478,502
Maintenance and repair	909,143	0	909,143
Maintenance testing	202,228	0	202,228
Meter reading	175,422	0	175,422
Chemicals	311,580	0	311,580
Transportation	283,615	0	283,615
Operating expense charged to plant	(360,703)	0	(360,703)
Outside services – other	654,506	0	654,506
Salaries and wages – General	1,086,991	0	1,086,991
Office supplies & other office expense	308,786	0	308,786
Regulatory commission expense	169,355	0	169,355
Pension and other benefits	867,766	0	867,766
Rent	178,706	0	178,706
Insurance	423,389	0	423,389
Office utilities	411,346	0	411,346
Miscellaneous	120,273	0	120,273
Depreciation expense	3,198,990	0	3,198,990
Amortization of CIAC	(704,302)	0	(704,302)
Amortization of PAA	(115,669)	0	(115,669)
Amortization of ITC	(328)	0	(328)
Franchise and other taxes	(3,473)	0	(3,473)
Property taxes	154,066	0	154,066
Payroll taxes	286,024	0	286,024
Regulatory fee	22,810	2,312	25,122
Deferred income tax	(26,513)	0	(26,513)
State income tax	50,650	44,393	95,043
Federal income tax	<u>414,823</u>	<u>363,575</u>	<u>778,398</u>
Total operating revenue deductions	<u>14,231,071</u>	<u>410,280</u>	<u>14,641,351</u>
Net operating income for a return	<u>\$3,315,263</u>	<u>\$1,367,735</u>	<u>\$4,682,998</u>

SCHEDULE II-A
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Original Cost Rate Base
 For the Twelve Months Ended March 31, 2019
 CWSNC Water Operations

<u>Item</u>	<u>Amount</u>
Plant in service	\$114,766,817
Accumulated depreciation	<u>(29,553,703)</u>
Net plant in service	85,213,114
Cash working capital	1,184,436
Contributions in aid of construction	(17,662,813)
Advances in aid of construction	(23,760)
Accumulated deferred income taxes	(2,312,807)
Customer deposits	(175,942)
Inventory	167,608
Gain on sale and flow back taxes	(281,868)
Plant acquisition adjustment	(2,085,004)
Excess book value	0
Cost-free capital	(121,791)
Average tax accruals	(81,595)
Regulatory liability for excess deferred taxes	(2,084,991)
Deferred charges	1,611,323
Pro forma plant	<u>0</u>
Original cost rate base	<u>\$63,345,909</u>
Rates of return:	
Present	5.23%
Approved	7.39%

SCHEDULE III-A
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Statement of Capitalization and Related Costs
 For the Twelve Months Ended March 31, 2019
 CWSNC Water Operations

	<u>Ratio</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost</u>	<u>Net Operating Income</u>
PRESENT RATES				
Long-term Debt	50.90%	\$32,243,068	5.36%	\$1,728,228
Common Equity	49.10%	31,102,841	5.10%	1,587,035
Total	<u>100.00%</u>	<u>\$ 63,345,909</u>		<u>\$3,315,263</u>
APPROVED RATES				
Long-term Debt	50.90%	\$ 32,243,068	5.36%	\$1,728,228
Common Equity	49.10%	31,102,841	9.50%	2,954,770
Total	<u>100.00%</u>	<u>\$ 63,345,909</u>		<u>\$4,682,998</u>

SCHEDULE I-B
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Net Operating Income for a Return
 For the Twelve Months Ended March 31, 2019
 CWSNC Sewer Operations

	Present	Increase	After
	<u>Rates</u>	<u>Approved</u>	<u>Approved</u> <u>Increased</u>
Operating Revenues:			
Service revenues	\$12,961,929	\$2,942,923	\$15,904,852
Miscellaneous revenues	124,500	8,829	133,329
Uncollectibles	<u>(98,511)</u>	<u>(22,366)</u>	<u>(120,877)</u>
Total operating revenues	<u>12,987,918</u>	<u>2,929,386</u>	<u>15,917,304</u>
Operating Revenue Deductions:			
Salaries and wages – Maintenance	1,622,020	0	1,622,020
Purchased power	838,308	0	838,308
Purchased water and sewer	740,741	0	740,741
Maintenance and repair	1,940,932	0	1,940,932
Maintenance testing	308,671	0	308,671
Meter reading	0	0	0
Chemicals	318,617	0	318,617
Transportation	171,371	0	171,371
Operating expense charged to plant	(217,966)	0	(217,966)
Outside services – other	395,475	0	395,475
Salaries and wages – General	656,845	0	656,845
Office supplies & other office exp.	186,580	0	186,580
Regulatory commission expense	102,331	0	102,331
Pension and other benefits	524,372	0	524,372
Rent	107,979	0	107,979
Insurance	255,830	0	255,830
Office utilities	248,550	0	248,550
Miscellaneous	74,254	0	74,254
Depreciation expense	2,821,151	0	2,821,151
Amortization of CIAC	(570,054)	0	(570,054)
Amortization of PAA	(16,931)	0	(16,931)
Amortization of ITC	(251)	0	(251)
Franchise and other taxes	(2,595)	0	(2,595)
Property taxes	93,092	0	93,092
Payroll taxes	172,838	0	172,838
Regulatory fee	16,884	3,808	20,692
Deferred income tax	(33,406)	0	(33,406)
State income tax	14,845	73,140	87,985
Federal income tax	<u>121,581</u>	<u>599,012</u>	<u>720,593</u>
Total operating revenue deductions	<u>10,892,064</u>	<u>675,960</u>	<u>11,568,024</u>
Net operating income for a return	<u>\$2,095,854</u>	<u>\$2,253,426</u>	<u>\$4,349,280</u>

SCHEDULE II-B
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Original Cost Rate Base
 For the Twelve Months Ended March 31, 2019
 CWSNC Sewer Operations

<u>Item</u>	<u>Amount</u>
Plant in service	\$102,974,564
Accumulated depreciation	(23,646,093)
Net plant in service	79,328,471
Cash working capital	941,771
Contributions in aid of construction	(17,559,280)
Advances in aid of construction	(9,180)
Accumulated deferred income taxes	(2,884,203)
Customer deposits	(106,311)
Inventory	101,275
Gain on sale and flow back taxes	(135,943)
Plant acquisition adjustment	296,963
Excess book value	0
Cost-free capital	(139,708)
Average tax accruals	(49,923)
Regulatory liability for excess deferred taxes	(1,259,826)
Deferred charges	307,657
Pro forma plant	0
Original cost rate base	\$58,831,763
Rates of return:	
Present	3.56%
Approved	7.39%

SCHEDULE III-B
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Statement of Capitalization and Related Costs
 For the Twelve Months Ended March 31, 2019
 CWSNC Sewer Operations

	<u>Ratio</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost</u>	<u>Net Operating Income</u>
PRESENT RATES				
Long-term Debt	50.90%	\$ 29,945,367	5.36%	\$1,605,072
Common Equity	49.10%	28,886,396	1.70%	490,782
Total	<u>100.00%</u>	<u>\$ 58,831,763</u>		<u>\$2,095,854</u>
APPROVED RATES				
Long-term Debt	50.90%	\$ 29,945,367	5.36%	\$1,605,072
Common Equity	49.10%	28,886,396	9.50%	2,744,208
Total	<u>100.00%</u>	<u>\$ 58,831,763</u>		<u>\$4,349,280</u>

SCHEDULE I-C
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Net Operating Income for a Return
 For the Twelve Months Ended March 31, 2019
 BF/FH/TC Water Operations

	Present <u>Rates</u>	Increase <u>Approved</u>	After Approved <u>Increase</u>
Operating Revenues:			
Service revenues	\$1,304,521	\$97,488	\$1,402,009
Miscellaneous revenues	51,060	312	51,372
Uncollectibles	<u>(16,567)</u>	<u>(1,239)</u>	<u>(17,806)</u>
Total operating revenues	<u>1,339,014</u>	<u>96,561</u>	<u>1,435,575</u>
Operating Revenue Deductions:			
Salaries and wages – Maintenance	308,862	0	308,862
Purchased power	69,724	0	69,724
Purchased water and sewer	0	0	0
Maintenance and repair	63,151	0	63,151
Maintenance testing	8,314	0	8,314
Meter reading	30,753	0	30,753
Chemicals	44,189	0	44,189
Transportation	38,746	0	38,746
Operating expense charged to plant	(41,503)	0	(41,503)
Outside services – other	69,135	0	69,135
Salaries and wages – General	125,075	0	125,075
Office supplies & other office exp.	35,984	0	35,984
Regulatory commission expense	17,639	0	17,639
Pension and other benefits	99,850	0	99,850
Rent	21,337	0	21,337
Insurance	50,550	0	50,550
Office utilities	43,252	0	43,252
Miscellaneous	11,671	0	11,671
Depreciation expense	169,164	0	169,164
Amortization of CIAC	(56,417)	0	(56,417)
Amortization of PAA	13,303	0	13,303
Amortization of ITC	0	0	0
Franchise and other taxes	2,583	0	2,583
Property taxes	10,553	0	10,553
Payroll taxes	32,912	0	32,912
Regulatory fee	1,741	125	1,866
Deferred income tax	(923)	0	(923)
State income tax	2,145	2,411	4,556
Federal income tax	<u>17,569</u>	<u>19,745</u>	<u>37,314</u>
Total operating revenue deductions	<u>1,189,358</u>	<u>22,281</u>	<u>1,211,639</u>
Net operating income for a return	<u>\$149,656</u>	<u>\$74,280</u>	<u>\$223,936</u>

SCHEDULE II-C
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Original Cost Rate Base
 For the Twelve Months Ended March 31, 2019
 BF/FH/TC Water Operations

<u>Item</u>	<u>Amount</u>
Plant in service	\$6,285,688
Accumulated depreciation	(2,083,262)
Net plant in service	4,202,426
Cash working capital	124,591
Contributions in aid of construction	(1,055,139)
Advances in aid of construction	0
Accumulated deferred income taxes	(84,226)
Customer deposits	(16,236)
Inventory	1,503
Gain on sale and flow back taxes	0
Plant acquisition adjustment	13,196
Excess book value	0
Cost-free capital	0
Average tax accruals	(5,624)
Regulatory liability for excess deferred taxes	(291,777)
Deferred charges	140,413
Pro forma plant	0
Original cost rate base	<u>\$3,029,127</u>
Rates of return:	
Present	4.94%
Approved	7.39%

SCHEDULE III-C
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Statement of Capitalization and Related Costs
 For the Twelve Months Ended March 31, 2019
 BF/FH/TC Water Operations

	<u>Ratio</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost</u>	<u>Net Operating Income</u>
<u>PRESENT RATES</u>				
Long-term Debt	50.90%	\$ 1,541,826	5.36%	\$82,642
Common Equity	<u>49.10%</u>	<u>1,487,301</u>	4.51%	<u>67,014</u>
Total	<u>100.00%</u>	<u>\$ 3,029,127</u>		<u>\$149,656</u>
<u>APPROVED RATES</u>				
Long-term Debt	50.90%	\$ 1,541,826	5.36%	\$82,642
Common Equity	<u>49.10%</u>	<u>1,487,301</u>	9.50%	<u>141,294</u>
Total	<u>100.00%</u>	<u>\$ 3,029,127</u>		<u>\$223,936</u>

SCHEDULE I-D
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Net Operating Income for a Return
 For the Twelve Months Ended March 31, 2019
 BF/FH Sewer Operations

	Present <u>Rates</u>	Increase <u>Approved</u>	After Approved <u>Increase</u>
Operating Revenues:			
Service revenues	\$2,099,870	\$143,157	\$2,243,027
Miscellaneous revenues	22,114	458	22,572
Uncollectibles	<u>(26,668)</u>	<u>(1,818)</u>	<u>(28,486)</u>
Total operating revenues	<u>2,095,316</u>	<u>141,797</u>	<u>2,237,113</u>
Operating Revenue Deductions:			
Salaries and wages – Maintenance	334,600	0	334,600
Purchased power	146,154	0	146,154
Purchased water and sewer	0	0	0
Maintenance and repair	207,709	0	207,709
Maintenance testing	25,219	0	25,219
Meter reading	0	0	0
Chemicals	19,210	0	19,210
Transportation	40,468	0	40,468
Operating expense charged to plant	(44,961)	0	(44,961)
Outside services – other	72,182	0	72,182
Salaries and wages – General	135,498	0	135,498
Office supplies & other office expense	37,514	0	37,514
Regulatory commission expense	18,429	0	18,429
Pension and other benefits	108,171	0	108,171
Rent	22,286	0	22,286
Insurance	52,793	0	52,793
Office utilities	44,523	0	44,523
Miscellaneous	12,219	0	12,219
Depreciation expense	391,406	0	391,406
Amortization of CIAC	(146,182)	0	(146,182)
Amortization of PAA	42,674	0	42,674
Amortization of ITC	0	0	0
Franchise and other taxes	2,830	0	2,830
Property taxes	11,022	0	11,022
Payroll taxes	35,654	0	35,654
Regulatory fee	2,724	184	2,908
Deferred income tax	(8,286)	0	(8,286)
State income tax	7,834	3,540	11,374
Federal income tax	<u>64,160</u>	<u>28,995</u>	<u>93,155</u>
Total operating revenue deductions	<u>1,635,850</u>	<u>32,719</u>	<u>1,668,569</u>
Net operating income for a return	<u>\$459,466</u>	<u>\$109,078</u>	<u>\$568,544</u>

SCHEDULE II-D
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Original Cost Rate Base
 For the Twelve Months Ended March 31, 2019
 BF/FH Sewer Operations

<u>Item</u>	<u>Amount</u>
Plant in service	\$14,185,016
Accumulated depreciation	(2,614,885)
Net plant in service	<u>11,570,131</u>
Cash working capital	154,002
Contributions in aid of construction	(3,993,443)
Advances in aid of construction	0
Accumulated deferred income taxes	(714,208)
Customer deposits	(16,958)
Inventory	1,570
Gain on sale and flow back taxes	0
Plant acquisition adjustment	936,967
Excess book value	0
Cost-free capital	0
Average tax accruals	(6,056)
Regulatory liability for excess deferred taxes	(304,750)
Deferred charges	63,314
Pro forma plant	<u>0</u>
Original cost rate base	<u><u>\$7,690,568</u></u>
Rates of return:	
Present	5.97%
Approved	7.39%

SCHEDULE III-D
Carolina Water Service, Inc. of North Carolina
 Docket No. W-354, Sub 364
 Statement of Capitalization and Related Costs
 For the Twelve Months Ended March 31, 2019
 BF/FH Sewer Operations

	<u>Ratio</u>	<u>Original Cost Rate Base</u>	<u>Embedded Cost</u>	<u>Net Operating Income</u>
<u>PRESENT RATES</u>				
Long-term Debt	50.90%	\$ 3,914,499	5.36%	\$209,817
Common Equity	<u>49.10%</u>	<u>3,776,069</u>	6.61%	<u>249,649</u>
Total	<u>100.00%</u>	<u>\$ 7,690,568</u>		<u>\$ 459,466</u>
<u>APPROVED RATES</u>				
Long-term Debt	50.90%	\$ 3,914,499	5.36%	\$ 209,817
Common Equity	<u>49.10%</u>	<u>3,776,069</u>	9.50%	<u>358,727</u>
Total	<u>100.00%</u>	<u>\$ 7,690,568</u>		<u>\$ 568,544</u>

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 61–63

Rate Design

The evidence supporting these findings of fact is found in the verified Application and the accompanying NCUC Form W-1, the Stipulation, and the testimony and exhibits of Public Staff witnesses Junis and Casselberry and CWSNC witness DeStefano.

The water rates proposed by CWSNC in its Application were based on a fixed-to-variable ratio of 52% fixed for the base facility charge and 48% variable for the usage charge. Sewer rates were based on a fixed-to-variable ratio of 80% fixed for the base facility charge and 20% variable for the usage charge.

As part of its Application and as a matter of rate design in this case CWSNC proposes to include in its Uniform Sewer Rate Division, customers in the CLMS service area. CWSNC has maintained the CLMS system rates steady for the last four general rate cases (Docket No. W-354, Subs 336, 344, 356, and 360) in order to allow the remainder of the Uniform Sewer Rate Division to move toward parity with the CLMS sewer rates.

Public Staff witness Junis testified that the Public Staff recommended a service revenue ratio of 45/55 (base facilities charge to usage charge) for Uniform Water and BF/FH/TC Water residential customers, which he stated was consistent with the Public Staff's previous recommendations in CWSNC rate cases and similar to the stated target of 40/60 in the most recent Aqua North Carolina, Inc. (Aqua) rate case, Docket No. W-218, Sub 497. Moreover, he stated the rate design ratio of 45/55 was incorporated in Public Staff witness Casselberry's testimony and exhibits detailing the billing analysis and proposed rates. Tr. vol. 8, 107, 155.

Public Staff witness Junis recommended a 65/35 ratio for Uniform Sewer residential customers, an incremental approach to the target of 45/55, which was also incorporated in witness Casselberry's billing analysis and proposed rates. Tr. vol. 8, 159. Further, the Public Staff recommended that CLMS should be fully incorporated into the Uniform Sewer Rate Division as requested by the Company and that the Public Staff's recommended rates for the Uniform Sewer Rate Division should apply to CLMS customers.

On December 2, 2019, the CLCA filed a Resolution with the Commission whereby it stated that the Association

- strongly opposes being singled out for higher rates than any other territory served by CWSNC, and requests that the Commission adopt a uniform rate schedule for all CWSNC wastewater treatment customers; and
- requests that the Commission move Corolla Light and Monterey Shores area to the uniform rate schedule after thoroughly investigating and

analyzing the basis of the CWSNC request, allowing only an increase that is clearly justified.

During the expert witness hearing in response to a question from the Commission, CLCA indicated that it has no objection to the Stipulation. Tr. vol. 9, 200–01.

In the Stipulation, the Stipulating Parties agreed to a rate design for water utility service for its Uniform Water and BF/FH/TC Water residential customers to be based on a 50/50 ratio of base charge to usage charge, and to use an 80/20 ratio of base charge to usage charge for CWSNC's Uniform Sewer residential customers.²⁰

Based upon the foregoing and the entire record herein, the Commission finds that it is appropriate to utilize a 50/50 ratio of base charge to usage charge in this proceeding for CWSNC's Uniform Water and BF/FH/TC Water residential customers and an 80/20 ratio of base charge to usage charge for CWSNC's Uniform Sewer residential customers as agreed to by the Company and the Public Staff, embodied in the Stipulation, and not opposed by any party. Further, the Commission concludes that it is reasonable and appropriate to consolidate the CLMS sewer service rates with the Company's Uniform Sewer Division rates as requested by CWSNC and supported by both the Public Staff and the CLCA. The Commission concludes that such rate design is fair and reasonable to both CWSNC and its customers. Therefore, taking into account the foregoing findings and conclusions, the Commission concludes that the rates and charges included in Appendices A-1 and A-2, and the Schedules of Connection Fees for Uniform Water and Uniform Sewer, attached hereto as Appendices B-1 and B-2, are just and reasonable and should be approved.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 64-65

Water and Sewer System Improvement Charges

The evidence supporting these findings of fact is found in the generic rulemaking proceeding, Docket No. W-100, Sub 54, wherein the Commission issued orders establishing procedures for implementing and applying the WSIC and SSIC mechanism; in CWSNC's 2013 rate case, Docket No. W-354, Sub 336, wherein the Commission initially approved the Company's WSIC and SSIC mechanism; and in the Commission's prior orders approving WSIC and SSIC mechanisms for CWSNC and the other Corix companies that have been merged into CWSNC.

The Commission's previously-approved WSIC and SSIC rate adjustment mechanism continues in effect, although as required by Commission Rules R7-39(k) and R10-26(k), it has been reset to zero in this rate case. The WSIC and SSIC mechanism is designed to recover between rate case proceedings the costs associated with investment in certain completed, eligible projects for water and sewer system or water quality improvements pursuant to N.C.G.S. § 62-133.12. The WSIC and SSIC surcharge is

²⁰ BF/FH Sewer Rate Division has a monthly flat rate for residential customers.

subject to Commission approval and to audit and refund provisions. Any cumulative system improvement charge recovered pursuant to the WSIC and SSIC mechanism may not exceed 5% of the total annual service revenues approved by the Commission in this rate case proceeding.

Based on the service revenues set forth and approved in this Order, the maximum WSIC and SSIC charges as of the effective date of this Order are:

<u>Item</u>	<u>Service Revenues</u>	<u>Cap %</u>	<u>WSIC & SSIC Cap</u>
CWSNC Uniform Water Operations	\$19,271,785	X 5% =	\$963,589
CWSNC Uniform Sewer Operations	\$15,904,852	X 5% =	\$795,243
BF/FH/TC Water Operations	\$1,402,009	X 5% =	\$70,100
BF/FH Sewer Operations	\$2,243,027	X 5% =	\$112,151

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 66-68

Recommendations of the Public Staff

The evidence for these findings of fact is found in the Company’s NCUC Form W-1, the testimony of Public Staff witness Casselberry, and the testimony of Company witness DeStefano.

In her prefiled testimony, witness Casselberry stated,

The Public Staff recommends that in the next general rate case, W-1, Item 26, be reconciled with the Company’s bill data to ensure that the filing does not include double bills, that the Company accounts for multi-unit customers, and that other bills produced, such as final bills, late notices, re-bills, or other miscellaneous bills are not included in the W-1, Item 26 filing.

Tr. vol. 8, 91. The Company does not oppose this recommendation of the Public Staff.

In response to the Commission’s question during the expert witness hearing regarding whether the Company will be able to provide the information requested by the Public Staff, witness DeStefano responded that, “[t]he Company expects to be able to provide the information requested.” Tr. vol. 9, 197.

In its Application the Company requested to increase its reconnection fee from \$27.00 to \$42.00. Witness Casselberry stated in her testimony that the Public Staff did not oppose increasing the reconnection fee from \$27.00 to \$42.00.

In its Application the Company also proposed to increase the water connection charge from \$500 to \$1,080 and the sewer connection charge from \$2,000 to \$2,635 for Winston Pointe Subdivision, Phase IA. Witness Casselberry stated in her testimony that

the Public Staff recommended a connection charge of \$1,080 for water and \$1,400 for sewer in Winston Pointe Subdivision, Phase IA, as the connection charge should reflect Johnston County's – where the Company purchases bulk water and sewer treatment for Winston Pointe Subdivision – current bulk capacity fee for water and sewer. Witness Casselberry stated that CWSNC indicated that it agreed with the Public Staff's recommendation. Tr. vol. 8, 94.

In light of the foregoing the Commission concludes that it is reasonable and appropriate for the Company to provide accurate bill data and ensure that accurate data is filed in its NCUC Form W-1, Item 26 in its next rate case filing. The Commission further concludes that the reconnection fee should be increased from \$27.00 to \$42.00, and that a connection charge of \$1,080 for water and \$1,400 for sewer in Winston Pointe Subdivision, Phase 1A, is reasonable and appropriate.

IT IS, THEREFORE, ORDERED as follows:

1. That the affidavit of CWSNC's Financial Planning and Analysis Manager, Matthew Schellinger, filed on January 10, 2020, and the Public Staff's Revised Settlement Exhibits I and II filed on January 13, 2020, in these dockets are hereby entered into evidence;
2. That all late-filed exhibits filed by CWSNC and the Public Staff in these dockets are hereby admitted into evidence. That the Resolution of Corolla Light Community Association, Inc., filed on December 2, 2019 is also admitted into evidence;
3. That the Partial Joint Settlement Agreement and Stipulation is incorporated herein by reference and is hereby approved in its entirety;
4. That the Partial Joint Settlement Agreement and Stipulation and the parts of this Order pertaining to the contents of that agreement shall not be cited or treated as precedent in future proceedings;
5. That CWSNC's request to defer incremental O&M costs related to Hurricane Florence storm impacts is approved as set forth in the Stipulation and stated herein, and that CWSNC's request to defer depreciation expense on its capital investments and lost revenues related to Hurricane Florence storm impacts is hereby denied;
6. That CWSNC's Petition to defer post-in-service costs associated with the two WWTPs is approved; provided, however, that the Company shall be, and hereby is, required to cease deferring said costs concurrent with the date the Company is authorized to begin reflecting the costs associated with the WWTPs in rates;
7. That CWSNC's Petition to defer post-in-service costs associated with the two AMR installation projects is denied;

8. That the Schedules of Rates, attached hereto as Appendices A-1 and A-2, and the Schedules of Connection Fees for Uniform Water and Uniform Sewer, attached hereto as Appendices B-1 and B-2, are hereby approved and deemed to be filed with the Commission pursuant to N.C.G.S. § 62-138, and are hereby authorized to become effective for service rendered on and after the issuance date of this Order;²¹

9. That the Notices to Customers, attached hereto as Appendices C-1 and C-2 shall be mailed with sufficient postage or hand delivered to all affected customers in each relevant service area, respectively, in conjunction with the next regularly scheduled billing process;

10. That CWSNC shall file the attached Certificate of Service, properly signed and notarized, not later than ten days after the Notices to Customers are mailed or hand delivered to customers;

11. That CWSNC's federal protected EDIT should continue to be flowed back in accordance with the RSGM pursuant to the Commission's Sub 360 Order;

12. That it is reasonable and appropriate for purposes of this proceeding for CWSNC to refund its remaining federal unprotected EDIT balances over 24 months instead of the remaining 35 months as originally ordered by the Commission in Sub 360;

13. That CWSNC's state EDIT recorded pursuant to the Commission's Sub 138 Order should continue to be amortized in accordance with the Commission's Sub 356 Order and as confirmed by the Commission in its Sub 360 Order;

14. That CWSNC shall receive estimates for the cost of a filtration system in Bradfield Farms Subdivision within 60 days of the date of this Order and shall share those estimates with the Bradfield Farms Homeowners Association;

15. That with respect to AMR meter installation projects planned for the future, CWSNC shall work with the Public Staff pursuant to N.C.G.S. § 62-133.12 and Commission Rule R7-39 to mitigate regulatory lag using WSIC recovery. The burden to prove CWSNC's investments recovered under the WSIC mechanism are reasonably and prudently incurred as required by N.C.G.S. § 62-133.12 and Commission Rule R7-39 shall remain with CWSNC;

16. That in the Company's next general rate case filing CWSNC shall ensure that its NCUC Form W-1, Item 26 is reconciled with the Company's bill data to ensure that the filing does not include double bills, that the Company accounts for multi-unit

²¹ CWSNC's tariffs will be revised to reflect the change in taxability of CIAC based on the process outlined in Ordering Paragraph 4 of the Commission's February 11, 2020 Order, in Docket Nos. W-100, Sub 57 and W-100, Sub 62.

customers, and that other bills produced, such as final bills, late notices, re-bills, or other miscellaneous bills are not included in the NCUC Form W-1, Item 26 filing; and

17. That the Chief Clerk shall establish Docket No. W-354, Sub 364A as the single docket to be used for all future WSIC and SSIC filings, orders, and reporting requirements and shall close Docket No. W-354, Sub 360A.

ISSUED BY ORDER OF THE COMMISSION.

This the 31st day of March, 2020.

NORTH CAROLINA UTILITIES COMMISSION

A handwritten signature in black ink that reads "Kimberley A. Campbell". The signature is written in a cursive style with a large initial 'K'.

Kimberley A. Campbell, Chief Clerk

SCHEDULE OF RATES

for

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

for providing water and sewer utility service

in

ALL OF ITS SERVICE AREAS IN NORTH CAROLINA

(excluding Fairfield Harbour Service Area, Treasure Cove, Register Place Estates, North Hills, Glen Arbor/North Bend, Bradfield Farms, Silverton, Woodland Farms, and Larkhaven Subdivisions, and Hawthorne at the Green Apartments

WATER RATES AND CHARGES

Monthly Metered Water Service (Residential and Commercial):

Base Facility Charge (based on meter size with zero usage)

< 1" meter	\$ 28.92
1" meter	\$ 72.30
1 1/2" meter	\$ 144.60
2" meter	\$ 231.36
3" meter	\$ 433.80
4" meter	\$ 723.00
6" meter	\$1,446.00

Usage Charge:

A. Treated Water/1,000 gallons	\$ 8.27
B. Untreated Water/1,000 gallons (Brandywine Bay Irrigation Water)	\$ 4.23

C. Purchased Water for Resale, per 1,000 gallons:

<u>Service Area</u>	<u>Bulk Provider</u>		
Carolina Forest	Montgomery County	\$	3.19
High Vista Estates	City of Hendersonville	\$	3.40
Riverbend	Town of Franklin	\$	7.50
Riverpointe	Charlotte Water	\$	6.48
Whispering Pines	Town of Southern Pines	\$	3.28
White Oak Plantation/ Lee Forest	Johnston County	\$	2.65
Winston Plantation	Johnston County	\$	2.65
Winston Point	Johnston County	\$	2.65
Woodrun	Montgomery County	\$	3.19
Yorktown	City of Winston Salem	\$	5.79
Zemosa Acres	City of Concord	\$	5.41
Carolina Trace	City of Sanford	\$	2.21

Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

When because of the method of water line installation utilized by the developer or owner, it is impractical to meter each unit or other structure separately, the following will apply:

Sugar Mountain Service Area:

Where service to multiple units or other structures is provided through a single meter, the average usage for each unit or structure served by that meter will be calculated. Each unit or structure will be billed based upon that average usage plus the base monthly charge for a <1" meter.

Mount Mitchell Service Area:

Service will be billed based upon the Commission-approved monthly flat rate.

Monthly Flat Rate Service: (Billed in Arrears) \$ 58.54

Availability Rate: (Semiannual)

Applicable only to property owners in Carolina Forest
and Woodrun Subdivisions in Montgomery County \$ 27.15

Availability Rate: (Monthly)

Applicable only to property owners in Linville Ridge
Subdivision \$ 13.60

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Sapphire Valley Service Area	\$ 10.05
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Availability Rate: (Monthly rate, billed quarterly))

Applicable only to property owners in Connestee Falls	\$ 5.30
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<u>Meter Testing Fee:</u> ^{1/}	\$ 20.00
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<u>New Water Customer Charge:</u>	\$ 27.00
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Reconnection Charge: ^{2/}

If water service is cut off by utility for good cause	\$ 42.00
If water service is discontinued at customer's request	\$ 42.00

Reconnection Charge: ^{3/}(Flat-rate water customers)

If water service is cut off by utility for good cause	Actual Cost
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Management Fee: (in the following subdivisions only)

(Per connection)

Wolf Laurel	\$150.00
Covington Cross Subdivision (Phases 1 & 2)	\$100.00

Oversizing Fee: (in the following subdivision only)

(One-time charge per single-family equivalent)

Winghurst	\$400.00
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Meter Fee:

For <1" meters	\$ 50.00
For meters 1" or larger	Actual Cost

<u>Irrigation Meter Installation:</u>	Actual Cost
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SEWER RATES AND CHARGES

Monthly Metered Sewer Service:

A. Base Facility Charge:

Residential (zero usage) \$ 58.91

Commercial (based on meter size with zero usage)

< 1" meter \$ 58.91

1" meter \$ 147.28

1 1/2" meter \$ 294.55

2" meter \$ 471.28

3" meter \$ 883.65

4" meter \$1,472.75

6" meter \$2,945.50

B. Usage charge, per 1,000 gallons \$ 4.59

Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

Monthly Metered Purchased Sewer Service:

Collection Charge (Residential and Commercial) \$ 41.24

Usage charge, per 1,000 gallons
(based on purchased water consumption)

<u>Service Area</u>	<u>Bulk Provider</u>	
White Oak Plantation/ Lee Forest/Winston Pt.	Johnston County	\$ 5.57
Kings Grant	Two Rivers Utilities	\$ 3.98
College Park	Town of Dallas	\$ 7.33

Monthly Flat Rate Service: \$ 73.73

Multi-residential customers who are served by a master meter shall be charged the flat rate per unit. \$ 73.73

Mt. Carmel Subdivision Service Area:

Monthly Base Facility Charge	\$	7.29
Monthly Collection Charge (Residential and Commercial)	\$	41.24
Usage Charge, per 1,000 gallons (based on metered water from the water supplier)	\$	6.32

Regalwood and White Oak Estates Subdivision Service Area:

Monthly Flat Rate Sewer Service		
Residential Service	\$	73.73
White Oak High School	\$	2,187.33
Child Castle Daycare	\$	280.41
Pantry	\$	153.76

Fairfield Mountain/Apple Valley (a.k.a. Rumbling Bald) Service Area, and Highland Shores Subdivision:

Monthly Sewer Rates:

Residential		
Collection charge/dwelling unit	\$	41.24
Treatment charge/dwelling unit	\$	69.50
Total monthly flat rate/dwelling unit	\$	<u>110.74</u>

Commercial and Other:

Minimum monthly collection and treatment charge	\$	110.74
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Monthly collection and treatment charge for customers who do not take water service	\$	110.74
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Treatment charge per dwelling unit

Small (less than 2,500 gallons per month)	\$	78.50
Medium (2,500 to 10,000 gallons per month)	\$	139.50
Large (over 10,000 gallons per month)	\$	219.50

Collection Charge (per 1,000 gallons)	\$	13.93
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The Ridges at Mountain Harbour:

Monthly Sewer Rates:

Collection charge (Residential and Commercial)	\$ 41.24
Treatment charge (Residential and Commercial)	
< 1" meter	\$ 18.42
2" meter	\$ 147.36

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Sapphire Valley Service Area	\$ 10.20
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Availability Rate: (Monthly rate, billed quarterly)

Applicable only to property owners in Connestee Falls	\$ 5.75
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New Sewer Customer Charge: ^{4/} \$ 27.00

Reconnection Charge: ^{5/}

If sewer service is cut off by utility for good cause: Actual Cost

MISCELLANEOUS UTILITY MATTERS

Charge for processing NSF Checks: \$ 25.00

Bills Due: On billing date

Bills Past Due: 21 days after billing date

Billing Frequency: Bills shall be rendered monthly in all service areas, except for Mt. Carmel, which will be billed bimonthly.

Availability rates will be billed quarterly in advance for Connestee Falls, semiannually in advance for Carolina Forest, Woodrun, and Fairfield Sapphire Valley, and monthly for Linville Ridge.

Finance Charge for Late Payment:

1% per month will be applied to the unpaid balance of all bills still past due 25 days after billing date.

Notes:

^{1/} If a customer requests a test of a water meter more frequently than once in a 24-month period, the Company will collect a \$20.00 service charge to defray the cost of the test. If the meter is found to register in excess of the prescribed accuracy limits, the meter testing charge will be waived. If the meter is found to register accurately or below prescribed accuracy limits, the charge shall be retained by the Company. Regardless of the test results, customers may request a meter test once in a 24-month period without charge.

^{2/} Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

^{3/} The utility shall itemize the estimated cost of disconnecting and reconnecting service and shall furnish this estimate to customer with cut-off notice.

^{4/} This charge shall be waived if customer is also a water customer within the same service area.

^{5/} The utility shall itemize the estimated cost of disconnecting and reconnecting service and shall furnish this estimate to customer with cut-off notice. This charge will be waived if customer also receives water service from Carolina Water Service within the same service area. Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

Issued in Accordance with Authority Granted by the North Carolina Utilities Commission in Docket No. W-354, Sub 364, on this the 31st day of March, 2020.

SCHEDULE OF RATES

for

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

for providing water and sewer utility service

in

TREASURE COVE, REGISTER PLACE ESTATES, NORTH HILLS, GLEN
ARBOR/NORTH BEND SUBDIVISIONS, FAIRFIELD HARBOUR SERVICE AREA,
BRADFIELD FARMS SUBDIVISION, LARKHAVEN SUBDIVISION, SILVERTON, AND
WOODLAND FARMS SUBDIVISIONS, AND HAWTHORNE AT THE GREEN
APARTMENTS

WATER RATES AND CHARGES

Monthly Metered Water Service (Residential and Commercial):

Base Facility Charge (based on meter size with zero usage)

< 1" meter	\$ 17.30
1" meter	\$ 43.25
1 1/2" meter	\$ 86.50
2" meter	\$138.40

Usage Charge, per 1,000 gallons \$ 4.20

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield
Harbour Service Area \$ 3.55

Connection Charge:

Treasure Cove Subdivision	\$ 0.00
North Hills Subdivision	\$ 100.00
Glen Arbor/North Bend Subdivision	\$ 0.00
Register Place Estates	\$ 500.00

Fairfield Harbor: ^{1/}

All Areas Except Harbor Pointe II Subdivision

Recoupment of capital fees per tap	\$ 335.00
Connection charge per tap	\$ 140.00

Harbor Pointe Subdivision and any area where mains have been installed after July 24, 1989

Recoupment of capital fee per tap	\$ 650.00
Connection charge per tap	\$ 320.00

Bradfield Farms:

Connection charge per tap	None
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<u>Meter Testing Fee:</u> ^{2/}	\$ 20.00
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<u>New Water Customer Charge:</u>	\$ 27.00
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Reconnection Charge: ^{3/}

If water service is cut off by utility for good cause	\$ 42.00
If water service is discontinued at customer's request	\$ 42.00

<u>New Meter Charge:</u>	Actual Cost
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<u>Irrigation Meter Installation:</u>	Actual Cost
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SEWER RATES AND CHARGES

Monthly Sewer Service:

Residential:

Flat Rate, per dwelling unit	\$ 53.91
Bulk Flat Rate, per REU	\$ 53.91

Commercial and Other:

Monthly Flat Rate (Customers who do not take water service)	\$ 53.91
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Monthly Metered Rates
 (based on meter size with zero usage)

<1" meter	\$ 44.62
1" meter	\$ 111.55
1 1/2" meter	\$ 223.10
2" meter	\$ 356.96

Usage Charge, per 1,000 gallons	\$ 2.25
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Bulk Sewer Service for Hawthorne at the Green Apartments: ^{4/}

Bulk Flat Rate, per REU	\$ 53.91
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(To be collected from Hawthorne and delivered to Carolina Water Service, Inc. of North Carolina for treatment of the Hawthorne wastewater pursuant to Docket No. W-218, Sub 291)

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Harbour Service Area	\$ 2.85
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Connection Charge

Fairfield Harbour: ^{1/}

All Areas Except Harbor Pointe II Subdivision

Recoupment of capital fees per tap	\$ 735.00
Connection charge per tap	\$ 140.00

Harbor Pointe Subdivision and any area where mains have been installed after July 24, 1989

Recoupment of capital fee per tap	\$ 2,215.00
Connection charge per tap	\$ 310.00

Bradfield Farms:

Connection charge per tap	None
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<u>New Sewer Customer Charge:</u> ^{5/}	\$ 27.00
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<u>Reconnection Charge:</u> ^{6/}	
If sewer service is cut off by utility for good cause:	Actual Cost

MISCELLANEOUS UTILITY MATTERS

<u>Charge for processing NSF Checks:</u>	\$ 25.00
<u>Bills Due:</u>	On billing date
<u>Bills Past Due:</u>	21 days after billing date
<u>Billing Frequency:</u>	Bills shall be monthly for service in arrears. Availability billings semiannually in advance.
<u>Finance Charge for Late Payment:</u>	1% per month will be applied to the unpaid balance of all bills still past due 25 days after billing date.

Notes:

^{1/} The recoupment of capital portion of the connection charges shall be due and payable at such time as the main water and sewer lines are installed in front of each lot, and the tap-on fee for water and sewer shall be payable upon request by the owner of each lot to be connected to the water and sewer lines. With written consent of the company, payment of the recoupment capital portion of the connection charge may be made payable over five-year period following the installation of the water and sewer mains in front of each lot, payment to be made in such a manner and in such installments as agreed upon between lot owner and the company, together with interest on the balance of the unpaid recoupment of capital fee from said time until payment in full at the rate of 6% per annum.

^{2/} If a customer requests a test of a water meter more frequently than once in a 24-month period, the Company will collect a \$20.00 service charge to defray the cost of the test. If the meter is found to register in excess of the prescribed accuracy limits, the meter testing charge will be waived. If the meter is found to register accurately or below prescribed accuracy limits, the charge shall be retained by the Company. Regardless of the test results, customers may request a meter test once in a 24-month period without charge.

^{3/} Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

^{4/} Each Apartment building will be considered 92.42% occupied on an ongoing basis for billing purposes as soon as the certificate of occupancy is issued for that apartment building.

^{5/} This charge shall be waived if customer is also a water customer within the same service area.

^{6/} The utility shall itemize the estimated cost of disconnecting and reconnecting service and shall furnish this estimate to customer with cut-off notice. This charge will be waived if customer also receives water service from Carolina Water Service within the same service area. Customers who request to be reconnected within nine months of disconnection at the same address shall be charged the base facility charge for the service period they were disconnected.

Issued in Accordance with Authority Granted by the North Carolina Utilities Commission in Docket No. W-354, Sub 364, on this the 31st day of March, 2020.

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

SCHEDULE OF CONNECTION FEES

FOR WATER UTILITY SERVICE UNDER UNIFORM RATES

Uniform Connection Fees: ^{1/}

The following uniform connection fees apply unless specified differently by contract approved by and on file with the North Carolina Utilities Commission.

Connection Charge (CC), per SFE (Single-Family Equivalent)	\$ 100.00
Plant Modification Fee (PMF), per SFE	\$ 400.00

The systems where connection fees other than the uniform fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows. These fees are per SFE:

<u>Subdivision</u>	<u>CC</u>	<u>PMF</u>
Abington	\$ 0.00	\$ 0.00
Abington, Phase 14	\$ 0.00	\$ 0.00
Amherst	\$ 250.00	\$ 0.00
Bent Creek	\$ 0.00	\$ 0.00
Blue Mountain at Wolf Laurel	\$ 925.00	\$ 0.00
Buffalo Creek, Phase I, II, III, IV	\$ 825.00	\$ 0.00
Carolina Forest	\$ 0.00	\$ 0.00
Chapel Hills	\$ 150.00	\$ 400.00
Eagle Crossing	\$ 0.00	\$ 0.00
Elk River Development	\$1,000.00	\$ 0.00
Forest Brook/Old Lamp Place	\$ 0.00	\$ 0.00
Harbour	\$ 75.00	\$ 0.00
Hestron Park	\$ 0.00	\$ 0.00
Hound Ears	\$ 300.00	\$ 0.00
Kings Grant/Willow Run	\$ 0.00	\$ 0.00
Lemmond Acres	\$ 0.00	\$ 0.00
Linville Ridge	\$ 400.00	\$ 0.00
Monterrey (Monterrey LLC)	\$ 0.00	\$ 0.00
Quail Ridge	\$ 750.00	\$ 0.00
Queens Harbour/Yachtsman	\$ 0.00	\$ 0.00
Riverpointe	\$ 300.00	\$ 0.00
Riverpointe (Simonini Bldrs.)	\$ 0.00	\$ 0.00
Riverwood, Phase 6E (Johnston County)	\$ 825.00	\$ 0.00
Saddlewood/Oak Hollow (Summey Bldrs.)	\$ 0.00	\$ 0.00

<u>Subdivision</u>	<u>CC</u>	<u>PMF</u>
Sherwood Forest	\$ 950.00	\$ 0.00
Ski Country	\$ 100.00	\$ 0.00
The Ridges at Mountain Harbour	\$2,500.00	\$ 0.00
White Oak Plantation	\$ 0.00	\$ 0.00
Wildlife Bay	\$ 870.00	\$ 0.00
Willowbrook	\$ 0.00	\$ 0.00
Winston Plantation	\$1,100.00	\$ 0.00
Winston Pointe, Phase 1A	\$1,080.00	\$ 0.00
Wolf Laurel	\$ 925.00	\$ 0.00
Woodrun	\$ 0.00	\$ 0.00
Woodside Falls	\$ 500.00	\$ 0.00

Other Connection Fees:

The following connection fees apply unless specified differently by contract approved and/or filed with the North Carolina Utilities Commission.

Amber Acres, Amber Acres North, Amber Ridge, Ashley Hills North, Bishop Pointe, Carriage Manor, Country Crossing, Covington Cross, Heather Glen, Hidden Hollow, Jordan Woods, Lindsey Point, Neuse Woods, Oakes Plantation, Randsdell Forest, Rutledge Landing, Sandy Trails, Stewart's Ridge, Tuckahoe, Wilder's Village and Forest Hill Subdivisions

Connection Charge:

- | | |
|--------------------------|---------------------------------------|
| A. 5/8" meter | \$ 500.00 |
| B. All other meter sizes | Actual cost of meter and installation |

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows:

<u>Subdivision</u>	<u>CC</u>
Lindsey Point Subdivision	\$ 0.00
Amber Acres North, Sections II & IV	\$ 570.00
Fairfield Mountain/Apple Valley (a.k.a Rumbing Bald) Service Area	\$ 500.00
Highland Shores Subdivision	\$ 500.00
Laurel Mountain Estates	\$ 0.00
Carolina Trace	\$ 605.00
Connestee Falls	\$ 600.00

The following connection fees apply unless specified differently by contract approved and/or filed with the North Carolina Utilities Commission.

All Areas Except Holly Forest XI, Holly Forest XIV, Holly Forest XV, Whisper Lake I, Whisper Lake II, Whisper Lake III, Deer Run, Lonesome Valley Phases I and II, and Chattooga Ridge

Recoupment of Capital Fee (RCF) ^{2/}	\$ 0.00
Connection charge	\$ 400.00

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows.

<u>Subdivision</u>	<u>CC</u>	<u>RCF</u>
Holly Forest XI	\$ 400.00	\$2,400.00
Holly Forest XIV	\$ 400.00	\$ 250.00
Holly Forest XV	\$ 400.00	\$ 500.00
Whispering Lake Phase I	\$ 400.00	\$1,250.00
Whispering Lake Phases II and III	\$ 400.00	\$2,450.00
Deer Run	\$ 400.00	\$1,900.00
Lonesome Valley Phases I and II	\$ 0.00	\$ 0.00
Chattooga Ridge	\$ 0.00	\$ 0.00

^{1/} These fees are only applicable one time, when the unit is initially connected to the system.

^{2/} The recoupment of capital portion of the connection charges shall be due and payable at such time as the main water and sewer lines are installed in front of each lot, and the tap-on fee for water and sewer shall be payable upon request by the owner of each lot to be connected to the water and sewer lines. With written consent of the company, payment of the recoupment capital portion of the connection charge may be made payable over five-year period following the installation of the water and sewer mains in front of each lot, payment to be made in such a manner and in such installments as agreed upon between lot owner and the company, together with interest on the balance of the unpaid recoupment of capital fee from said time until payment in full at the rate of 6% per annum.

CAROLINA WATER SERVICE, INC. OF NORTH CAROLINA

SCHEDULE OF CONNECTION FEES FOR

SEWER UTILITY SERVICE UNDER UNIFORM RATES

Uniform Connection Fees: ^{1/}

The following uniform connection fees apply unless specified differently by contract approved by and on file with the North Carolina Utilities Commission.

Connection Charge (CC), per SFE (Single-Family Equivalent)	\$ 100.00
Plant Modification Fee (PMF), per SFE	\$1,000.00

The systems where connection fees other than the uniform fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows. These fees are per SFE:

<u>Subdivision</u>	<u>CC</u>	<u>PMF</u>
Abington	\$ 0.00	\$ 0.00
Abington, Phase 14	\$ 0.00	\$ 0.00
Amber Acres North (Phases II & IV)	\$ 815.00	\$ 0.00
Ashley Hills	\$ 0.00	\$ 0.00
Amherst	\$ 500.00	\$ 0.00
Bent Creek	\$ 0.00	\$ 0.00
Brandywine Bay	\$ 100.00	\$1,456.00
Camp Morehead by the Sea	\$ 100.00	\$1,456.00
Elk River Development	\$1,200.00	\$ 0.00
Hammock Place	\$ 100.00	\$1,456.00
Hestron Park	\$ 0.00	\$ 0.00
Hound Ears	\$ 30.00	\$ 0.00
Independent/Hemby Acres/Beacon Hills (Griffin Bldrs.)	\$ 0.00	\$ 0.00
Kings Grant/Willow Run	\$ 0.00	\$ 0.00
Kynwood	\$ 0.00	\$ 0.00
Mt. Carmel/Section 5A	\$ 500.00	\$ 0.00
Queens Harbor/Yachtsman	\$ 0.00	\$ 0.00
Riverpointe	\$ 300.00	\$ 0.00
Riverpointe (Simonini Bldrs.)	\$ 0.00	\$ 0.00
Steeplechase (Spartabrook)	\$ 0.00	\$ 0.00
The Ridges at Mountain Harbour	\$2,500.00	\$ 0.00
White Oak Plantation	\$ 0.00	\$ 0.00
Willowbrook	\$ 0.00	\$ 0.00

Willowbrook (Phase 3)	\$ 0.00	\$ 0.00
Winston pointe (Phase 1A)	\$1,400.00	\$ 0.00
Woodside Falls	\$ 0.00	\$ 0.00

Other Connection Fees:

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows.

Subdivision

Carolina Pines

Residential	\$1,350.00 per unit (including single-family homes, condominiums, apartments, and mobile homes)
Hotels	\$750.00 per unit
Nonresidential	\$3.57 per gallon of daily design of discharge or \$900.00 per unit, whichever is greater

Subdivision

CC

Fairfield Mountain/Apply Valley (a.k.a. Rumbling Bald) Service Area	\$ 550.00
Highland Shores	\$ 550.00
Carolina Trace	\$ 533.00
Connestee Falls	\$ 400.00

The following connection fees apply unless specified differently by contract approved and/or filed with the North Carolina Utilities Commission.

All Areas Except Holly Forest XIV, Holly Forest XV, Deer Run, and Lonesome Valley Phases I and II

Recoupment of Capital Fee (RCF) ^{2/}	\$ 0.00
Connection charge	\$ 550.00

The systems where other connection fees have been approved and/or allowed to become effective by the North Carolina Utilities Commission are as follows:

<u>Subdivision</u>	<u>CC</u>	<u>RCF</u>
Holly Forest XIV	\$ 550.00	\$1,650.00
Holly Forest XV	\$ 550.00	\$ 475.00
Deer Run	\$ 550.00	\$1,650.00
Lonesome Valley Phases I and II	\$ 0.00	\$ 0.00

^{1/} These fees are only applicable one time, when the unit is initially connected to the system.

^{2/} The recoupment of capital portion of the connection charges shall be due and payable at such time as the main water and sewer lines are installed in front of each lot, and the tap-on fee for water and sewer shall be payable upon request by the owner of each lot to be connected to the water and sewer lines. With written consent of the company, payment of the recoupment capital portion of the connection charge may be made payable over five-year period following the installation of the water and sewer mains in front of each lot, payment to be made in such a manner and in such installments as agreed upon between lot owner and the company, together with interest on the balance of the unpaid recoupment of capital fee from said time until payment in full at the rate of 6% per annum.

Issued in Accordance with Authority Granted by the North Carolina Utilities Commission in Docket No. W-354, Sub 364, on this the 31st day of March, 2020.

**STATE OF NORTH CAROLINA
 UTILITIES COMMISSION
 RALEIGH**

DOCKET NO. W-354, SUB 364

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of

Application by Carolina Water Service,)
 Inc. of North Carolina, 4944 Parkway)
 Plaza Boulevard, Suite 375, Charlotte,)
 North Carolina 28217, for Authority to)
 Adjust and Increase Rates for Water)
 and Sewer Utility Service in All of its)
 Service Areas in North Carolina)

NOTICE TO CUSTOMERS

NOTICE IS HEREBY GIVEN that the North Carolina Utilities Commission has issued an Order authorizing Carolina Water Service, Inc. of North Carolina (CWSNC) to increase rates for water and sewer utility service in all of its service areas in North Carolina. The new approved rates are as follows:

WATER RATES AND CHARGES

(Excluding Fairfield Harbour Service Area and Treasure Cove, Register Place Estates, North Hills, Glen Arbor/North Bend, Bradfield Farms, Larkhaven, Silverton, and Woodland Farms Subdivisions, and Hawthorne at the Green Apartments

Uniform Water Customers:

Monthly Metered Water Service (Residential and Commercial):

Base Facility Charge (based on meter size with zero usage)	
< 1" meter	\$ 28.92
1" meter	\$ 72.30
1 1/2" meter	\$ 144.60
2" meter	\$ 231.36
3" meter	\$ 433.80
4" meter	\$ 723.00
6" meter	\$1,446.00

Usage Charge:

A. Treated Water/1,000 gallons	\$ 8.27
B. Untreated Water/1,000 gallons (Brandywine Bay Irrigation Water)	\$ 4.23

C. Purchased Water for Resale, per 1,000 gallons:

<u>Service Area</u>	<u>Bulk Provider</u>		
Carolina Forest	Montgomery County	\$	3.19
High Vista Estates	City of Hendersonville	\$	3.40
Riverbend	Town of Franklin	\$	7.50
Riverpointe	Charlotte Water	\$	6.48
Whispering Pines	Town of Southern Pines	\$	3.28
White Oak Plantation/ Lee Forest	Johnston County	\$	2.65
Winston Plantation	Johnston County	\$	2.65
Winston Point	Johnston County	\$	2.65
Woodrun	Montgomery County	\$	3.19
Yorktown	City of Winston Salem	\$	5.79
Zemosa Acres	City of Concord	\$	5.41
Carolina Trace	City of Sanford	\$	2.21

Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

When because of the method of water line installation utilized by the developer or owner, it is impractical to meter each unit or other structure separately, the following will apply:

Sugar Mountain Service Area:

Where service to multiple units or other structures is provided through a single meter, the average usage for each unit or structure served by that meter will be calculated. Each unit or structure will be billed based upon that average usage plus the base monthly charge for a <1" meter.

Mount Mitchell Service Area:

Service will be billed based upon the Commission-approved monthly flat rate.

Monthly Flat Rate Service: (Billed in Arrears) \$ 58.54
Availability Rate: (Semiannual)

Applicable only to property owners in Carolina Forest
 and Woodrun Subdivisions in Montgomery County \$ 27.15

Availability Rate: (Monthly)

Applicable only to property owners in Linville Ridge
 Subdivision \$ 13.60

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Sapphire Valley Service Area	\$ 10.05
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Availability Rate: (Monthly rate, billed quarterly)

Applicable only to property owners in Connestee Falls	\$ 5.30
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SEWER RATES AND CHARGES

(Excluding Fairfield Harbour Service Area, Treasure Cove, Register Place Estates, North Hills and Glen Arbor/North Bend Subdivisions, Bradfield Farms, Larkhaven, Silverton, and Woodland Farms Subdivisions, and Hawthorne at the Green Apartments)

Uniform Sewer Customers:

Monthly Metered Sewer Service:

Base Facility Charge:

Residential (zero usage)	\$ 58.91
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Commercial (based on meter size with zero usage)

< 1" meter	\$ 58.91
1" meter	\$ 147.28
1 1/2" meter	\$ 294.55
2" meter	\$ 471.28
3" meter	\$ 883.65
4" meter	\$1,472.75
6" meter	\$2,945.50

Usage charge, per 1,000 gallons	\$ 4.59
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Commercial customers, including condominiums or other property owner associations who bill their members directly, shall have a separate account set up for each meter and each meter shall be billed separately based on the size of the meter and usage associated with the meter.

Monthly Metered Purchased Sewer Service:

Collection Charge (residential and commercial)	\$ 41.24
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Usage charge, per 1,000 gallons based on purchased water consumption

<u>Service Area</u>	<u>Bulk Provider</u>		
White Oak Plantation/ Lee Forest/Winston Pt.	Johnston County	\$	5.57
Kings Grant	Two Rivers Utilities	\$	3.98
College Park	Town of Dallas	\$	7.33

Monthly Flat Rate Service: \$ 73.73

Multi-residential customers who are served by a master meter shall be charged the flat rate per unit. \$ 73.73

Mt. Carmel Subdivision Service Area:

Monthly Base Facility Charge \$ 7.29

Monthly Collection Charge
(Residential and commercial) \$ 41.24

Usage Charge/1,000 gallons based on purchased water \$ 6.32

Regalwood and White Oak Estates Subdivision Service Area:

Monthly Flat Rate Sewer Service	
Residential Service	\$ 73.73
White Oak High School	\$2,187.33
Child Castle Daycare	\$ 280.41
Pantry	\$ 153.76

Fairfield Mountain/Apple Valley (a.k.a. Rumbling Bald) Service Area, Highland Shores Subdivisions and Laurel Mountain Estates

Monthly Sewer Rates:

Residential:	
Collection charge/dwelling unit	\$ 41.24
Treatment charge/dwelling unit	\$ 69.50
Total monthly flat rate/dwelling unit	<u>\$ 110.74</u>

Commercial and Other:

Minimum monthly collection and treatment charge \$ 110.74

Monthly collection and treatment charge for customers
Who do not take water service (per single family unit) \$ 110.74

Treatment charge per dwelling unit

Small (less than 2,500 gallons per month)	\$ 78.50
Medium (2,500 to 10,000 gallons per month)	\$ 139.50
Large (over 10,000 gallons per month)	\$ 219.50

Collection Charge (per 1,000 gallons)	\$ 13.93
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The Ridges at Mountain Harbour:

Monthly Sewer Rates:

Collection charge (Residential and Commercial)	\$ 41.24
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Treatment Charge (Residential and Commercial)	
< 1 inch meter	\$ 18.42
2 inch meter	\$ 147.36

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Sapphire Valley Service Area	\$ 10.20
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Availability Rate: (Monthly rate, billed quarterly)

Applicable only to property owners in Connestee Falls	\$ 5.75
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RATE ADJUSTMENT MECHANISM:

The Commission-authorized water and sewer system improvement charge (WSIC/SSIC) rate adjustment mechanism continues in effect and will now be applicable to all customers in CWSNC's North Carolina service areas. It has been reset at zero in the Docket No. W-354, Sub 364 rate case, but CWSNC may, under the Rules and Regulations of the Commission, next apply for a rate surcharge on July 31, 2020 to become effective October 1, 2020. The WSIC/SSIC mechanism is designed to recover, between rate case proceedings, the costs associated with investment in certain completed, eligible projects for system or water quality improvement. The WSIC/SSIC mechanism is subject to Commission approval and to audit and refund provisions. Any cumulative system improvement charge recovered pursuant to the WSIC/SSIC mechanism may not exceed 5% of the total annual service revenues approved by the Commission in this general rate case proceeding. Additional information regarding the WSIC/SSIC mechanism is contained in the Commission's Order and can be accessed from the Commission's website at www.ncuc.net, under Docket Information, using the Docket Search feature for docket number "W-354 Sub 360A" and "W-354, Sub 364A" .

CREDIT/REFUNDS DUE TO REDUCTION IN FEDERAL CORPORATE INCOME TAX RATE:

On December 22, 2017, President Donald J. Trump signed into law the Tax Cuts and Jobs Act (The Tax Act), which among other things, reduced the federal corporate income tax rate from 35% to 21%, effective for taxable years beginning after December 31, 2017.

With respect to excess deferred income taxes (EDIT) resulting from the reduction in the federal corporate income tax rate, the Commission is requiring that: (1) CWSNC shall continue to flow back the federal protected EDIT to customers in accordance with the Reverse South Georgia Method as ordered by the Commission in CWSNC's last rate case (Docket No. W-354, Sub 360), and (2) CWSNC shall refund the remaining federal unprotected EDIT to customers through a levelized rider over a period of 24 months as requested by CWSNC instead of the remaining 35-month period as originally ordered by the Commission in Docket No. W-354, Sub 360.

CWSNC will provide the applicable dollar amount concerning the federal EDIT rider (refund) shown as a separate line item on individual customers' monthly bills, along with explanatory information.

ISSUED BY ORDER OF THE COMMISSION.

This the 31st day of March, 2020.

NORTH CAROLINA UTILITIES COMMISSION



Kimberley A. Campbell, Chief Clerk

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. W-354, SUB 364

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	NOTICE TO CUSTOMERS
Application by Carolina Water Service, Inc.	)	IN TREASURE COVE, REGISTER
of North Carolina, 4944 Parkway Plaza	)	PLACE ESTATES, NORTH HILLS,
Boulevard, Suite 375, Charlotte, North	)	AND GLEN ARBOR/NORTH BEND
Carolina 28217, for Authority to Adjust and	)	SUBDIVISIONS, FAIRFIELD
Increase Rates for Water and Sewer Utility	)	HARBOUR SERVICE AREA,
Service in All of its Service Areas in North	)	BRADFIELD FARMS, LARKHAVEN,
Carolina	)	SILVERTON, AND WOODLAND
	)	FARMS SUBDIVISIONS, AND
	)	HAWTHORNE AT THE GREEN
	)	APARTMENTS

NOTICE IS HEREBY GIVEN that the North Carolina Utilities Commission has issued an Order authorizing Carolina Water Service, Inc. of North Carolina to charge the following new rates for water and sewer utility service in Treasure Cove, Register Place Estates, North Hills, and Glen Arbor/North Bend Subdivisions, Fairfield Harbour Service Area, Bradfield Farms, Larkhaven, Silverton, and Woodland Farms Subdivisions, and Hawthorne at the Green Apartments:

WATER RATES AND CHARGES

Monthly Metered Water Service (Residential and Commercial):

Base Facility Charge (based on meter size with zero usage)	
< 1" meter	\$ 17.30
1" meter	\$ 43.25
1 1/2" meter	\$ 86.50
2" meter	\$ 138.40
 Usage Charge, per 1,000 gallons	 \$ 4.20

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Harbour Service Area	\$ 3.55
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SEWER RATES AND CHARGES

Monthly Sewer Service:

Residential:

Flat Rate, per dwelling unit	\$ 53.91
Bulk Flat Rate, per REU	\$ 53.91

Commercial and Other:

Monthly Flat Rate (Customers who do not take water service)	\$ 53.91
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Monthly Metered Rates
(based on meter size with zero usage)

<1" meter	\$ 44.62
1" meter	\$111.55
1 1/2" meter	\$223.10
2" meter	\$356.96

Usage Charge, per 1,000 gallons	\$ 2.25
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Bulk Sewer Service for Hawthorne at the Green Apartments:

Bulk Flat Rate, per REU	\$ 53.91
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(To be collected from Hawthorne and delivered to Carolina Water Service, Inc. of North Carolina for treatment of the Hawthorne wastewater pursuant to Docket No. W-218, Sub 291)

Availability Rate: (Monthly rate, billed semiannually)

Applicable only to property owners in Fairfield Harbour Service Area	\$ 2.85
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RATE ADJUSTMENT MECHANISM:

The Commission-authorized water and sewer system improvement charge (WSIC/SSIC) rate adjustment mechanism continues in effect and will now be applicable to all customers in CWSNC's North Carolina service areas. It has been reset at zero in the Docket No. W-354, Sub 364 rate case, but CWSNC may, under the Rules and Regulations of the Commission, next apply for a rate surcharge on July 31, 2020, to become effective October 1, 2020. The WSIC/SSIC mechanism is designed to recover, between rate case

proceedings, the costs associated with investment in certain completed, eligible projects for system or water quality improvement. The WSIC/SSIC mechanism is subject to Commission approval and to audit and refund provisions. Any cumulative system improvement charge recovered pursuant to the WSIC/SSIC mechanism may not exceed 5% of the total annual service revenues approved by the Commission in this general rate case proceeding. Additional information regarding the WSIC/SSIC mechanism is contained in the Commission's Order and can be accessed from the Commission's website at www.ncuc.net, under Docket Information, using the Docket Search feature for docket number "W-354 Sub 360A" and "W-354 Sub 364A".

CREDIT/REFUNDS DUE TO REDUCTION IN FEDERAL CORPORATE INCOME TAX RATE:

On December 22, 2017, President Donald J. Trump signed into law the Tax Cuts and Jobs Act (The Tax Act), which among other things, reduced the federal corporate income tax rate from 35% to 21%, effective for taxable years beginning after December 31, 2017.

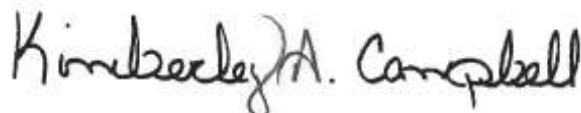
With respect to excess deferred income taxes (EDIT) resulting from the reduction in the federal corporate income tax rate, the Commission is requiring that: (1) CWSNC shall continue to flow back the federal protected EDIT to customers in accordance with the Reverse South Georgia Method as ordered by the Commission in CWSNC's last rate case (Docket No. W-354, Sub 360), and (2) CWSNC shall refund the remaining federal unprotected EDIT to customers through a levelized rider over a period of 24 months as requested by CWSNC instead of the remaining 35-month period as originally ordered by the Commission in Docket No. W-354, Sub 360.

CWSNC will provide the applicable dollar amount concerning the federal EDIT rider (refund) shown as a separate line item on individual customers' monthly bills, along with explanatory information.

ISSUED BY ORDER OF THE COMMISSION.

This the 31st day of March, 2020.

NORTH CAROLINA UTILITIES COMMISSION



Kimberley A. Campbell, Chief Clerk

CERTIFICATE OF SERVICE

I, _____, mailed with sufficient postage or hand delivered to all affected customers the attached Notices to Customers issued by the North Carolina Utilities Commission in Docket No. W-354, Subs 363, 364, and 365, and the Notices were mailed or hand delivered by the date specified in the Order.

This the ____ day of _____, 2020.

By: _____
Signature

Name of Utility Company

The above named Applicant, _____, personally appeared before me this day and, being first duly sworn, says that the required Notices to Customers were mailed or hand delivered to all affected customers, as required by the Commission Order dated _____ in Docket No. W-354, Subs 363, 364, and 365.

Witness my hand and notarial seal, this the ___ day of _____, 2020.

Notary Public

Printed or Typed Name

(SEAL) My Commission Expires: _____
Date

BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NO. 2017-292-WS - ORDER NO. 2018-345

MAY 17, 2018

IN RE: Application of Carolina Water Service, Inc.) ORDER APPROVING
for Adjustment of Rates and Charges and) RATES AND CHARGES
Modification to Certain Terms and)
Conditions for the Provision of Water and)
Sewer Service)

This matter is before the Public Service Commission of South Carolina ("Commission") on the Application of Carolina Water Service, Inc. ("CWS" or "Company") for approval of a new schedule of rates and charges and modifications to certain terms and conditions for the provision of water and sewer services for its customers in South Carolina. CWS filed its Application on November 10, 2017, pursuant to S.C. Code § 58-5-240 and S.C. Code Regs. §§ 103-503, 103-703, 103-512.4.A and 103-712.4.A.

In the Application, CWS requested an increase in revenues for combined operations of \$4,511,414 consisting of a water revenue increase of \$2,272,914 and a sewer revenue increase of \$2,238,500. The revenue increase utilizes a return on equity ("ROE") of 10.5% based on the rate of return on rate base methodology and a historical test year beginning September 1, 2016, and ending August 31, 2017.

CWS requested permission to modify its sewer service tariff to reduce the frequency with which customers must test their backflow devices from every year to every

two years, and to authorize the Company to terminate service, after notice, to a customer who fails to demonstrate that his backflow device is working properly. App. p. 6, ¶ 20. CWS requested authorization to increase its Water Meter Installation Charge from \$35 to \$45 per year, to more accurately reflect the utility's cost of providing this service. App. p. 6, ¶ 21. The Company also requested approval of a provision in its tariff limiting the liability of the Company, its agents, and employees for interruption of service, whether caused by acts or omissions, to those remedies provided in the Commission's rules and regulations. App. p. 6, ¶ 22.

CWS last rate case before this Commission was in Docket No. 2015-199-WS. In that case, the Commission approved a settlement in which CWS received a combined revenue increase of \$3,068,441 based on a \$50,955,443 rate base; an operating margin of 11.95%, an ROE of 9.34%, and a return on rate base of 7.99%.

CWS' South Carolina operations are classified by the National Association of Regulatory Utility Commissioners ("NARUC") as a Class A water and wastewater utility according to water and sewer revenues reported on its Application for the test year ending August 31, 2017. The Commission's approved service area for CWS is in parts of sixteen counties.

I. PROCEDURAL BACKGROUND

The Commission's Clerk's Office instructed CWS to publish a prepared Notice of Filing, one time, in a newspaper of general circulation in the area affected by CWS' Application and to mail copies of the Notice of Filing to all customers affected by the proposed rates and charges and modifications. The Notice of Filing indicated the nature of

the Application and advised all interested parties desiring to participate in the scheduled proceeding of the manner and time in which to file the appropriate pleadings. CWS filed affidavits demonstrating the Notice of Filing had been duly published and provided to all customers.

Petitions to Intervene were subsequently filed on behalf of the Forty Love Point Homeowners' Association ("Forty Love"), York County, and James S. Knowlton. The South Carolina Office of Regulatory Staff ("ORS"), a party of record pursuant to S.C. Code § 58-4-10(B), made on-site investigations of CWS' facilities, audited CWS' books and records, issued data requests, and gathered other detailed information concerning CWS' operations.

CWS was represented by Charles L.A. Terreni, and Scott Elliott. Laura P. Valtorta represented Forty Love. Michael K. Kendree represented York County, Mr. Knowlton appeared pro se. Jeffrey M. Nelson, and Florence P. Belser represented the ORS. On March 28, 2018 York County moved to withdraw from the proceedings without prejudice after CWS withdrew its request for approval of the Utility System Improvement Rate ("USIR"). York County's request was granted on the same day. Order No. 2018-38-H.

The Commission held public hearings in Lexington, York, and Greenville counties to allow CWS's customers to present their views regarding the Application. An evidentiary hearing was held April 3-4, 2018, at the Commission's offices in Columbia with the Honorable Swain E. Whitfield, presiding.

The Company presented the testimony of Michael R. Cartin, Operations and Regulatory Affairs Manager (direct, rebuttal and supplemental), Robert M. Hunter,

Financial Planning and Analysis Manager (direct and rebuttal), and Bob Gilroy, Vice President of Operations (direct, rebuttal, and testimony responsive to customers who testified at public hearings). Mr. Cartin, testified about the Company's operations and various expenses and capital expenditures made by CWS. Mr. Hunter testified about the Company's finances and revenue requirement, and Mr. Gilroy testified about various aspects of the Company's operations and customer service. The Company also presented the testimony of Dylan W. D'Ascendis, CRRA, Director at ScottMadden, Inc., who testified to the Company's capital structure, cost of debt, and recommended ROE.

Forty Love presented the direct testimony of subdivision residents and customers Barbara King and Jay Dixon. They testified to problems experienced with the sewer system serving Forty Love Point. Mr. Knowlton presented his rebuttal testimony opposing the amount and frequency of the Company's rate increases.

ORS presented the testimony of Matthew Schellinger (direct and surrebuttal), Zachary Payne (direct and surrebuttal), and Douglas H. Carlisle, Jr., Ph.D. (direct and surrebuttal) as a panel. Dr. Carlisle testified to the Company's capital structure, cost of debt, and recommended ROE.

Dr. Carlisle's testimony included an analysis and recommendation for an allowed ROE. Mr. Payne testified about ORS's examination of the Application and CWS' books and records and the subsequent accounting and pro forma adjustments recommended by ORS. Mr. Schellinger's direct testimony focused on CWS' compliance with Commission rules and regulations, ORS' business office compliance review, inspections of CWS' water

and wastewater systems, test year and proposed revenue, and performance bond requirements.

II. REVIEW OF THE EVIDENCE AND EVIDENTIARY CONCLUSIONS

A. Standards and Required Findings

In considering the Application, the Commission must ascertain and fix just and reasonable rates, standards, classifications, regulations, practices, and measurements of service to be furnished. The Commission must give due consideration to the Company's total revenue requirements and review the operating revenues and operating expenses of CWS to establish adequate and reasonable levels of revenues and expenses. The Commission will consider a fair rate of return for CWS based on the record and any increase must be just and reasonable and free of undue discrimination. CWS has also asked this Commission to approve revenues based on an authorized ROE established to allow CWS the opportunity to earn a fair return.

After evaluation of the positions of the parties, the Commission reaches the legal and factual conclusions discussed below, based on its review of the facts and evidence of record. The evidence supporting the Company's business and legal status is contained in the Application filed by CWS, testimony, and in prior Commission orders in the docket files of the Commission, of which the Commission takes judicial notice.

CWS has approximately 16,000 water customers and 14,000 sewer customers in Lexington, Richland, Sumter, Aiken, Saluda, Orangeburg, Beaufort, Georgetown, Abbeville, Union, Anderson, York, Cherokee, Greenville, Greenwood, and Williamsburg counties. App. Schd. F; R. p. 345 (Gilroy Dir. p. 2, ll. 21-24). As a public utility, its

operations are subject to the jurisdiction of the Commission pursuant to S.C. Code §§ 58-5-10 et seq.

B. Test Year

A fundamental principle of the ratemaking process is the establishment of a historical test year as the basis for calculating a utility's return on rate base. To determine the utility's expenses and revenues, we must select a 'test year' for the measurement of the expenses and revenues. *Heater of Seabrook v. PSC*, 324 S.C. 56, 59 n.1 (1996). While the Commission considers a utility's proposed rate increase based upon occurrences within the test year, the Commission will also consider adjustments for any known and measurable out-of-test year changes in expenses, revenues, and investments, and will also consider adjustments for any unusual situations which occurred in the test year. When the test year figures are atypical, the Commission should adjust the test year data. See *S. Bell Tel. & Tel. Co. v. Pub. Serv. Com*, 270 S.C. 590, 603 (1978).

In its Application, CWS utilized a historic test year, the twelve months beginning September 1, 2016, and ending August 31, 2017, with adjustments for 2018 expectations. App. p.2, ¶ 5. ORS used the same historical test year. R. p. 729 (Payne Dir. p. 2, ll. 5-10). None of the other parties contested CWS' proposed test year. Based on the information available to the Commission, and that none of the parties objected to CWS' proposed test year, the Commission concludes that the test year beginning September 1, 2016, and ending August 31, 2017, is appropriate for this Application.

C. Rate of Return on Rate Base

The Company requested rate base and rate of return treatment for its Application. App. pp. 4-5, ¶ 16. No other party of record proposed an alternative method for determining just and reasonable rates and the testimony of ORS' witnesses Payne and Carlisle assumes that return on rate base will be the methodology employed.

The Commission has wide latitude in selecting a rate setting methodology. Heater of Seabrook, at 64. Even though S.C. Code § 58-5-240(H) requires the Commission to specify an operating margin in all water and sewer rate cases, the Commission is not precluded by that statute from employing the return on rate base approach to ratemaking. Id. Operating margin "is less appropriate for utilities that have large rate bases and need to earn a rate of return sufficient to obtain the necessary debt and equity capital that a large utility needs for sound operation." Id at 65. In the Company's last rate case, the Commission employed the return on rate base methodology. The Commission finds the return on rate base methodology is appropriate. The Company's rate base, according to its Application, is \$54,853,170. App. Ex. B, Sch. C, p. 1.

The determination of return on rate base requires consideration of three components, namely: capital structure, cost of equity (or "ROE") and the cost of debt. R. pp. 397-398 (D' Ascendis Dir. pp. 4-5).

Mr. D'Ascendis and Dr. Carlisle agreed the capital structure and cost of debt of CWS's parent, Utilities, Inc. should be employed: it is 48.11% long-term debt and 51.89% common equity. R. pp. 395 (D'Ascendis Dir. p. 2, ll. 10-17); 649 (Carlisle Dir. p.4, ll. 21-

p.5, l. 3). No other party disagreed. The Commission finds this capital structure supported by the uncontroverted testimony of the parties.

Mr. D'Ascendis and Dr. Carlisle disagreed on CWS's cost of debt. Mr. D'Ascendis used an embedded debt rate of 6.60%. Dr. Carlisle lowered CWS's cost of debt rate from 6.60% to 6.58% due to what he described as "unfavorable terms" of the Company's long-term debt. R. p. 649 (Carlisle Dir., p. 4, l. 21 – p. 5, l. 9). Dr. Carlisle argued the Company imprudently refinanced its long-term debt when interest rates were high and agreed to terms which prevent it from refinancing now that interest rates are lower. Id. Mr. D'Ascendis countered that the Company's long-term debt financing, which was agreed to in 2006, was in line with bond yields for similarly situated companies at the time. R. p. 438 (D'Ascendis, Rebut. p. 3, ll. 1-14). However, the Commission has not been provided any evidence to support the ORS position. We find the appropriate long-term debt rate for CWS is 6.60%.

The rate of return on common equity, or ROE, is a key figure used in calculating a utility's overall rate of return. *Porter v. PSC*, 333 S.C. 12 (1998). A utility is entitled to the opportunity to earn a fair rate of return. *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) and *Bluefield Water Works Improvement Co. v. Public Service Comm'n*, 262 U.S. 679 (1922),

Mr. D'Ascendis recommended that CWS' ROE should fall within a range of 10.45% to 10.95%. R. p. 397 (D'Ascendis Dir. p. 4, ll. 4-20 (Table 2)).

To determine the cost of equity, Mr. D'Ascendis used the Discounted Cash Flow ("DCF") Risk Premium Model ("RPM") and the Capital Asset Pricing Model ("CAP-M")

and (“ECAP-M”) model to similar risk companies, i.e. proxy groups, of regulated and non-regulated companies. R. pp. 396-397 (D’Ascendis Direct pp. 3-4).

The proxy groups were used by Mr. D’Ascendis because the Company's common stock is not publicly traded, and, therefore, CWS's market-based common equity cost rates cannot be determined directly. Id. He used a proxy group of eight water companies whose common stocks were actively traded for insight into a common equity cost rate applicable to CWS. R. p. 402 (D’Ascendis Direct, p.10). The utility proxy group was selected according to these criteria: 1) they are included in the Water Utility Group of Value Line's Standard Edition (October 13, 2017); 2) they have 70% or greater of 2016 total operating income and 70% or greater of 2016 total assets attributable to regulated water operations; 3) at the time of the preparation of this testimony, they had not publicly announced that they were involved in any major merger or acquisition activity (i.e. one publicly traded utility merging with or acquiring another); 4) they have not cut or omitted their common dividends during the five years ending 2016 or through the time of the preparation of this testimony; 5) they have Value Line and Bloomberg adjusted betas; 6) they have a positive Value Line five-year dividends per share (“DPS”) growth rate projection; and 7) they have Value Line, Reuters, Zacks, or Yahoo! Finance consensus five-year earnings per share (“EPS”) growth rate projections. Id. The companies that met Mr. D’Ascendis’ criteria were: American States Water Co., American Water Works Co., Inc., Aqua America, Inc., California Water Service Group, Connecticut Water Service, Inc., Middlesex Water Co., SJW Corp., and York Water Co. Id.

Mr. D'Ascendis also selected a proxy group of twenty-eight non-price regulated companies comparable in total risk to the proxy group of water companies. R. Ex. 8 (D'Ascendis Direct, Ex. 1, Schd. DWD-6). The criteria for non-price regulated proxy group were: 1) they must be covered by Value Line Investment Survey (Standard Edition); 2) they must be domestic, non-price regulated companies, i.e., non-utilities; 3) their beta coefficients must lie within plus or minus two standard deviations of the average unadjusted beta of the utility proxy group; and 4) the residual standard errors of the Value Line regressions, which gave rise to the unadjusted beta coefficients, must lie within plus or minus two standard deviations of the average residual standard error of the utility proxy group. R. p. 423 (D'Ascendis Direct, p. 30, ll. 15-23).

Mr. D'Ascendis' DCF analysis yields cost rates for the water company proxy group of 8.64%. The RPM analysis produced a common equity cost rate of 10.69% for the water company proxy group. The CAP-M cost rate is 10.51% for the water company proxy group. D'Ascendis averaged the mean, 10.43%, and median, 10.58%, equity costs of the water company proxy group, resulting in 10.51%. R. p. 424 (D'Ascendis Direct, p. 29, ll. 10-15). With the non-price regulated proxy group, the DCF yields 13.57%, the RPM, 11.91%, and the CAP-M/ECAP-M, 11.15%. R. p. 424 (D'Ascendis Direct, pp. 31, l. 12-32, l. 4). The average of the mean and median of the non-price regulated proxy group is 12.06%. R. p. 425 (D'Ascendis Direct, p. 32, ll. 7-14).

The approximate average of the results produced by any of Mr. D'Ascendis' models is 10.45%. R. p. 426 (D'Ascendis Direct, p. 33, ll. 5-9). He also recommended an upward adjustment of 0.50% ROE, due to CWS's small size. R. pp. 426 - 429 (D'Ascendis Direct,

p. 33, l. 11- 36, l. 20). His average ROE after the size adjustment is 10.95%. R. p. 429 (D’Ascendis Direct, p. 36, ll. 17-20). Mr. D’Ascendis recommended range of ROE was 10.45% to 10.95%. R. p. 397 (D’Ascendis Dir. p. 4, ll. 4-20 (Table 2)).

Dr. Carlisle employed the DCF model, the Comparable Earnings Model (“CEM”), and the CAP-M method to calculate his ROE range of 8.82% to 9.54%. R. p. 647 (Carlisle Direct, p. 2, ll. 12-15).

Dr. Carlisle also used a water company proxy group of ten water companies for his DCF and CAP-M analyses. R. p. 649 (Carlisle Direct, p. 4, ll. 15-20). Dr. Carlisle’s water company proxy group was identical to Mr. D’Ascendis’ water company proxy group except for the addition of Global Water Resources and Artesian Resources. Carlisle Rev. Exhibit DHC-4.

Dr. Carlisle’s DCF analysis yields cost rates for his water company proxy group of 8.82%. R. p. 654 (Carlisle Direct, p. 9, ll. 5-6). Dr. Carlisle did not perform the DCF analysis on non-price regulated proxy group as Mr. D’Ascendis did.

Dr. Carlisle’s CAP-M analysis compared the returns of the companies in his water company proxy group to a “risk free rate of return” (projected 30 yr. Treasury bond yield). R. p. 658 (Carlisle Direct, p. 13, ll. 17-23). Dr. Carlisle’s CAP-M analysis produced a range of 9.38% to 9.70%, which he averaged for a final CAP-M rate of 9.54%. R. p. 659 (Carlisle Direct, p. 14, ll. 12-13). Dr. Carlisle did not perform the CAP-M analysis on comparable non-price regulated stocks, as Mr. D’Ascendis did.

Dr. Carlisle’s CEM analysis, was applied to a group of non-price regulated stocks selected from Value Line with a comparable price volatility factor (“beta” or “β”) to those

in his water company proxy group. R. p. 655 (Carlisle Dir. p. 10, ll. 1-6). The CEM analysis produced a “retrospective” return on equity of 9.15%, and a “prospective” ROE of 8.63%. Dr. Carlisle averaged the two to arrive at a CEM ROE of 8.89%. R. p. 656 (Carlisle Dir. p. 11, ll. 3-7).

Finally, Dr. Carlisle averaged his DCF, CEM, and CAP-M rates to arrive at his recommended ROE of 9.08%.

Mr. D’Ascendis and Dr. Carlisle disagreed often. Mr. D’Ascendis argued that Dr. Carlisle should have relied on analysts’ estimates of earnings per share rather than historical and projected measures of book value per share, dividends per share, and sales growth to predict growth in earnings per share when performing his DCF analysis. R. p. 438 (D’Ascendis, Rebut. p. 3, l. 15 – p. 7, l. 5). On the other hand, Dr. Carlisle took issue with Mr. D’ Ascendis’ reliance on analysts’ projections of earnings per share (“EPS”) as the sole factor in his DCF analysis. R. pp. 666–667 (Carlisle Surr. p. 5, l. 8 – p. 6, l. 12). Dr. Carlisle, instead, also considers dividends per share (“DPS”), book value per share (“BPS”), and revenue or sales. R. pp. 650-651 (Carlisle Dir., pp. 6-7). Mr. D’Ascendis pointed to common market references, such as Yahoo Finance and Bloomberg, which provide earnings per share projections, but not projections of dividends per share, book value per share or sales growth, as evidence the investment community relies on the former but not the latter. R. p. 458, l. 24 – p. 459, l. 13. Had he done so, Mr. D’Ascendis testified, Dr. Carlisle's analysis would have produced a higher ROE. R. p. 442 (D'Ascendis Rebut., p. 7, ll. 1-5). Dr. Carlisle disagreed, citing studies showing that analysts’ estimates have

been historically overly optimistic, and should not be the sole basis for the DCF analysis.

R. pp. 664–666 (Carlisle, Surr. p. 3, l. 6 – p. 5, l. 4).

Mr. D’Ascendis also disagreed with Dr. Carlisle’s CAP-M calculations. He argued that Dr. Carlisle used the wrong measures of market return, and that he should have used the arithmetic mean of monthly total return rates instead of a geometric mean (or compound growth rate). Mr. D’Ascendis contends using the arithmetic produces the best insight into future returns. R. pp. 443–445 (D’ Ascendis Rebut. pp. 8-10). Dr. Carlisle responded that his market return measure better reflects the variety of companies in the market. Dr. Carlisle also defended his use of the geometric mean arguing that the arithmetic mean ignores the “compounding” effect of investing and can mislead investors by masking over the ups and downs of the market. R. p. 668 (Carlisle Surr. p. 7, l. 5 – p. 10, l. 26).

Mr. D’Ascendis criticized Dr. Carlisle for not performing an ECAP-M analysis, which he testified would have produced an equity cost rate of 10.03%. R. pp. 444–445 (D’Ascendis Rebut. p. 9, l. 8 – p. 10, l. 9). Mr. D’Ascendis also testified that Dr. Carlisle’s selection of non-price regulated companies for his CEM analysis failed to reflect the total risk of his water company proxy group. Mr. D’Ascendis performed Dr. Carlisle’s DCF and CAP-M analyses using a group that better reflected the risk of the water proxy group and found cost rates of 14.66% and 9.85% respectively. R. p. 448 (D’Ascendis Rebut. p. 13, ll. 14-24). Using the amended proxy group, Dr. Carlisle’s range would change to 9.57% (DCF), 10.03% (CAP-M), and 12.26% (CEM) with an average of 10.62%. R. p. 449 (D’Ascendis Rebut. p. 14, ll. 4-10).

The Commission finds Mr. D’Ascendis’ arguments persuasive. He provided more indicia of market returns, by using more analytical methods and proxy group calculations. Mr. D’Ascendis’ use of analysts’ estimates for his DCF analysis is supported by consensus, as is his use of the arithmetic mean. The Commission also finds that Mr. D’Ascendis’ non-price regulated proxy group more accurately reflects the total risk faced price regulated utilities and CWS. Furthermore, there is no dispute that CWS is significantly smaller than its proxy group counterparts, and, therefore, it may present a higher risk. . An appropriate ROE for CWS is 10.45% to 10.95%. The Company used an ROE of 10.5% in computing its Application, a return on the low end of Mr. D’Ascendis’ range, and the Commission finds that ROE is supported by the evidence.

Table 1 below indicates the capital structure of the Company, the cost of debt, the cost of equity as approved in this Order, and the resulting rate of return on rate base:

Table 1: Summary of Overall Rate of Return

<u>Type of Capital</u>	<u>Ratios</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	48.11%	6.60%	3.17%
Common Equity	<u>51.89%</u>	10.50%	<u>5.45%</u>
Total	100.00%		8.62%

D. Contested Rate Base Adjustments

The rate base proposed by CWS for combined operations was \$54,853,170. App. Ex B., Sch. C. CWS disputed two of ORS’s rate base adjustments: Adj. 32(c) in which ORS proposes to disallow \$1,081,375 spent in connection with a liner of the equalization

basin (“EQ Liner”) at the Friarsgate wastewater treatment plant, and Adj. 32(d) in which ORS proposes to disallow \$306,552 in engineering costs incurred at the Friarsgate Plant. R. p. 744 (Payne Direct, p. 17).

1. Friarsgate EQ Basin Removal and Site Remediation

The Company proposes to include \$1,081,375 for engineering costs and remediation costs associated with the replacement of the Equalization Basin’s (“EQ”) liner at the Friarsgate WWTF. An EQ Liner is a heavy-mill plastic liner placed in an in-ground basin that holds water. R. p. 478, ll. 20-24. CWS hired an engineering firm, W.K. Dickson, after an upset occurred at its Friarsgate Wastewater Treatment Facility (“Friarsgate Plant”). W.K. Dickson assisted CWS in formulating and presenting a Corrective Action Plan required by a Consent Order with DHEC. R. p. 555, l. 16 – p. 557, l. 1. W.K. Dickson submitted engineering plans on an expedited basis for various changes and improvements made to the plant. R. p. 555, ll. 19-25. DHEC also required CWS to have a professional engineer who was a wastewater expert on site to supervise the plant’s operations. R. p. 556, ll. 14-22. W.K. Dickson also provided required monthly reports to DHEC. R. p. 556, l. 22 – p. 557, l. 1.

The Company was required by a DHEC Consent Order to: 1) remove the existing liner, 2) complete any environmental mitigation efforts concerning the soils under the existing liner, and 3) replace the EQ Liner. This effort included removing and properly disposing of any affected soils. Once the site was sufficiently mitigated, new soil was brought in, graded, and compacted to prepare the site for the installation of the new liner. Although the EQ plastic liner has yet to be installed, the Company removed the existing

EQ Liner and completed the environmental mitigation required by DHEC before the audit cutoff date of February 12, 2018. CWS acted expeditiously to comply with the DHEC mandate. CWS is not asking to recover the cost of the new liner. R. p. 505, ll. 8-14.

CWS witness Cartin testified that the DHEC Consent Order required CWS to remove the EQ Liner at the Friarsgate Plant, remediate the soil underneath the liner, and replace the liner. R. pp. 318-319 (Cartin Rebut. p. 3, l. 3 – p. 4, l. 2). CWS spent \$1,081,375 to remove the EQ Liner and remediate the soil under the liner. Id. The Company had not installed the new liner yet but is in the process of doing so. Id. CWS contends that its compliance with DHEC's Consent Order was required for its continued operations and the public has benefitted from the removal of the old EQ Liner and the soil remediation, and therefore the costs should be included in rate base. Id.

The ORS proposes to disallow these costs because the EQ Liner has not yet been replaced. The ORS reasons that the project included both the engineering and remediation and the replacement of the EQ Liner. ORS's witness, Zachary Payne, testified that, since the new EQ Liner is still under construction, the whole project is not used and useful and should not be included in rate base. R. p. 754 (Payne Surr. p. 4, ll. 7-17).

The Commission finds the measures required by the DHEC Consent Order were in the public interest. Disallowing recovery of remediation costs acts to impair a utility's ability to address environmental concerns and conflicts with the policy of allowing recovery of necessary and prudently incurred costs. These known and measurable expenditures provided prompt regulatory and environmental compliance and immediate environmental and customer benefits. CWS has not requested recovery of the cost of the

new EQ Liner, the part of the project that ORS challenges as not used and useful. The Commission finds the \$1,081,375 cost of the removal of the existing EQ Liner and environmental remediation served the Company's customers and the public interest, and the Company is entitled to its recovery.

2. Friarsgate Engineering Costs

ORS proposed to disallow \$306,552 in engineering costs paid to the W.K. Dickson firm for services at the Friarsgate Plant. R. p. 744 (Payne Direct, p. 17, l. 11 (Adj. 32(d))). CWS contends the costs are recoverable because W.K. Dickson was hired to comply with the terms of the Consent Order with DHEC. R. pp. 319-320 (Cartin Rebut. p. 4, l. 3 – p. 5, l. 4). Mr. Cartin testified that W.K. Dickson was hired to design an O&M Manual and take other measures to ensure compliance at the plant. Id. Mr. Gilroy testified that W.K. Dickson was continuously present at the plant following an upset that occurred in June 2016 which led to a DHEC enforcement action. R. p. 353 (Gilroy Direct p. 10 ll. 1-7); R. p. 487, l. 12 – p. 488, l. 9. During that period, W.K. Dickson served as the principal point of contact with DHEC personnel and obtained permission for changes and improvements made to the facility. Id.

ORS took the position the W.K. Dickson costs should not be recoverable because they were incurred to comply with DHEC's Consent Order, which was caused by the Company's failure to adequately operate and maintain the Friarsgate Plant. R. p. 683, ll. 5-22. ORS's witness, Mr. Schellinger also testified the invoices for the work lacked sufficient detail to allow it to determine the work performed, and the work was required by Consent Orders which arose from the Company's violation of its NPDES permit. R.

pp.712-715 (Schellinger Surr. p. 5, l. 13 – p. 8, l. 20). If the costs were allowable, Mr. Schellinger testified that they should be booked as operations and maintenance expenses, not capital assets. CWS responded that costs incurred to ensure the Company's compliance with environmental regulations should be recoverable, and that treating them as capital expenditures is consistent with the practice adopted by the Company and the ORS in the settlement of the last rate case. R. pp. 319 - 320 (Cartin Rebut. p. 4, l. 3 – p. 5, l. 4). The Commission finds the engineering fees are recoverable as a capital expense prudently incurred to ensure necessary compliance with environmental regulations.

E. Expenses

CWS contested adjustments proposed by the ORS to the Company's O&M expenses: a reduction of \$96,892 in sludge hauling expenses (Adj. 9(d)), and the disallowance of \$998,606 in legal expenses incurred during litigation involving the I-20 wastewater treatment plant (Adj. 16).

1. Adjustment for Litigation Expenses

The Company proposes to amortize \$998,606 in financial costs and litigation expenses associated with its I-20 sewer system over 66.67 years. R, pp. 316-317 (Cartin Rebut., p. 1, l. 12 – p. 2, l. 18). These costs were primarily incurred with five actions: 1) a lawsuit brought by the Congaree Riverkeeper in the U.S. District Court, 2) a condemnation action brought by the Town of Lexington, 3) a challenge to DHEC's denial of a permit for the I-20 Plant in the Administrative Law Court, 4) the Town of Lexington's challenge of DHEC's order that it interconnect with CWS brought in the Administrative Law Court, and 5) CWS's lawsuit against the EPA in the United States District Court. Schellinger Sur.

p. 3, ll. 1-11. The Company proposed to amortize these costs over 66.7 years, resulting in an expense of \$14,979 per year. R. p. 300 (Cartin, Dir., p. 2, ll. 15-18).

ORS argued the legal expenses should not be allowed for two reasons. Mr. Schellinger testified that legal expenses incurred to defend the Congaree Riverkeeper's lawsuit should not be allowed because the District Court had ruled against CWS finding various violations of its NPDES permit and of effluent limitations since 2009. R. p. 692 (Schellinger Surr. p. 3, l. 11 – p. 4, l. 5). Mr. Schellinger viewed the company's lawsuit against the EPA and its litigation in the Administrative Law Court as related to the Riverkeeper proceeding, a position not disputed by CWS. Schellinger asserts that CWS should not be allowed to recover its legal costs because the actions arose from the Company's violations of environmental regulations. Id.

Schellinger testified the legal costs incurred in the condemnation action should not be recovered because CWS may be allowed to recover some costs if it prevailed. R. p. 730 (Schellinger Surr. p. 4, ll. 6-22). Schellinger also posited the actions before the Administrative Law Court could turn on the outcome of the condemnation action. R. p. 731 (Schellinger Surr. p. 5, ll. 1-12). He testified that since the outcome of the condemnation action was unknown and since if successful CWS may recover its litigation costs, the Commission should establish a regulatory asset in which to defer the litigation costs for future rate making treatment.

Mr. Cartin testified that CWS had no choice but to defend the Congaree Riverkeeper's lawsuit, and to prosecute its related actions. R. p. 490, l. 22 – p. 491, l. 7. He pointed out the Congaree Riverkeeper brought his suit to force an interconnection of

the I-20 Plant to the Town of Lexington's sewer system, an action CWS was ready to take but the Town of Lexington would not allow. R. p. 489, ll. 8-20. It was not until 2016, after DHEC ordered the Town of Lexington to seek an interconnection with CWS, that Lexington brought its condemnation proceeding. R. p. 567, ll. 1-12. When the condemnation suit was brought, CWS readily allowed the town to take possession of the I-20 system and interconnect the plant, reserving its right to contest Lexington's valuation of the plant. Id.

The Commission finds that regulated utilities, like any business, will experience litigation costs associated with its business operations. CWS acted to limit exposure to liability and benefit the utility and its rate payers. The financial and litigation costs were prudently incurred. Recovery of these costs equates to \$14,979 in annual amortization expense. As Mr. Cartin testified, CWS had no alternative but to defend the Congaree Riverkeeper's lawsuit and engage in the related litigation. Therefore, CWS will be allowed to recover \$998,606 amortized over 66.7 years, at the rate of \$14,979 per year.

2. Sludge Hauling Expenses

CWS incurred \$284,233 in sludge hauling expenses at its Friarsgate Plant and at its Watergate wastewater treatment facility ("Watergate Plant") during the test year. R. p. 753 (Payne Surr. p. 3). ORS proposed to remove \$96,892 in sludge hauling costs. ORS proposes an adjustment to allow recovery of a three-year average of annual sludge hauling costs at the two facilities.

ORS witness Payne testified that the ORS reviewed the sludge costs in the test year and the costs in the previous two years, concluding that the sludge hauling costs in the test

year were atypical. R. pp. 751-752 (Payne Surr. p. 2, l. 19 – p. 3, l. 12). The ORS proposes to average the annual sludge expense for the three years reviewed and proposed an adjustment of \$96,892, normalizing this operating expense. Id.

CWS witness Gilroy testified the increase of sludge hauling expense during the test year was caused by additional sludge removal requirements at the Friarsgate WWTF which produces large amounts of sludge that must be disposed of in a timely manner. R. pp. 358-360. The amount of sludge produced depends on many factors within the process of the waste water treatment. Id. The active sludge inventory within the process must be kept at a certain concentration for the biological process to be effective and result in a clear compliant effluent. Id. Excess sludge inventory must be removed frequently to keep sludge from building up to unacceptable levels which could cause problems with effluent quality. Id.

Mr. Gilroy testified that because the Friarsgate WWTF has been on a Consent Order, these sludge inventories are also monitored by DHEC, which recommends that the inventory to be kept at a constant rate. R. p. 365 (Gilroy Rebut. p. 3, ll. 3-12)). Ordinarily, the liquid sludge is poured into filtrate boxes that drain off the water leaving a very dry cake behind, which is then hauled and disposed of at the Northeast Sanitary Landfill. Id. When the sludge production exceeds the capacity of the filtrate boxes, CWS utilizes contractor liquid tanker trucks to haul the sludge to the City of Cayce's disposal site. Id. Disposing of the sludge in the cake form is more cost-effective than hauling truckloads of liquid sludge. Id. Although more expensive, sometimes the filtrate boxes are full, and tankers must be utilized. Id.

The Commission finds that the sludge hauling costs in the test year are recoverable as known and measurable, prudently incurred costs. The ORS does not dispute the sludge costs in the test year. It simply speculates that the costs will not recur in a similar amount. Speculation is not sufficient. Moreover, the testimony indicates that the sludge costs have increased because of the DHEC Consent Order, and were prudently incurred. The Commission denies the ORS adjustment to reduce the sludge hauling expenses.

3. Effects of the Income Tax and Jobs Act

a) Excess Accumulated Deferred Income Taxes

The Company filed its Application before Congress enacted the Tax Cuts and Jobs Act of 2017 (“TCJA”), which took effect on January 1, 2018. P.L. No: 115-97. The TCJA changed the tax laws affecting the Company. Mr. Hunter testified the TCJA reduced the corporate income tax rate from 35% to 21%, causing the Company to reduce its requested revenue requirement by approximately \$877,000. R. p. 255, ll. 16-22. This Commission held in Order No. 2018-308 that, beginning January 1, 2018, regulatory accounting treatment is required for all regulated utilities for any impacts of the new law, including current and deferred tax impacts. We also held that the utilities should track and defer the effects resulting from the Tax Act in a regulatory liability account, and further, for water/wastewater utilities with operating revenues that are equal or greater than \$250,000, the issue will be addressed at the next rate case or other proceeding. The provisions of Order No. 2018-308 apply to the present case, as well as to other utilities indicated in Order No. 2018-308.

F. Rate Case Expenses

CWS proposed to include rate case expenses incurred in this rate case through the date of the hearing, and ORS agreed to this proposal, subject to its review of the requested additional amount and examination of supporting documentation. R p. 754 (Payne Surreb., p. 4, ll. 5-7). ORS received and reviewed documentation supporting rate case expenses of \$88,500 and informed the Commission at the hearing that the ORS agrees with them. After the hearing, CWS presented documentation supporting additional rate case expenses of \$64,560. Because the additional rate case expenses are known and measurable, the Commission will allow them to be included in the total rate case expense and amortized over three years. We find the Company is entitled to \$153,060 in total rate case expenses, including those expenses submitted to ORS post-hearing. This amount amortized over three years less the Company's per book amount yields a post-hearing adjustment of \$21,520.

G. Other Adjustments

The remaining ORS adjustments are accepted by this Commission without discussion. They either were not disputed by the parties or were caused by carrying out the effects of the adjustments adopted above.

H. Deferred Accounts

By Order No. 2015-876 in Docket No. 2015-199-WS, the Commission approved two regulatory deferred accounts authorizing CWS 1) to record and monitor all rate increases from third-party providers for water supply and sewer treatment; and 2) to recover non-revenue water expenses. The Commission authorized CWS to seek recovery

of the balance of these deferred accounts, subject to audit by ORS and approval by the Commission in a subsequent rate case. In this Application CWS is seeking recovery of the balance in the regulatory deferral account associated with increases in purchased water from bulk water providers. (Application, para. 17) Mr. Hunter testified that the purchase water deferred account had a balance of \$669,808 as of March 8, 2018 and explained CWS sought recovery of this balance in this docket R. p. 278 (Hunter Rebut. p. 3 ll. 7–17). At the hearing, Mr. Payne testified that the ORS had reviewed the supporting documentation of the purchase water deferred account and that the ORS agreed with CWS' request to recover the balance of \$669,808. R. p. 752 (Payne Surreb., p. 2, ll.8-18). The Commission finds it reasonable for CWS to recover the purchased water deferred account balance of \$669,808.

Because the non-revenue water deferral account has a balance of zero, the ORS recommended this account be closed. R. p. 701 (Schellinger Dir., p. 11, l. 18 – p. 12, l. 8). The Company did not dispute this recommendation. The Commission finds it reasonable that the non-revenue water account be closed.

I. Performance Bond

CWS currently provides the maximum amount required for its performance bond in the amount of \$350,000 for water and \$350,000 for sewer operations. Using the criteria set forth in S.C. Code Regs. §§ 103-512.3.1 and 103-712.3.1, ORS recommended that CWS be required to continue the current performance bond amounts. R. p. 701 (Schellinger Dir. p. 12, ll. 9-15). CWS agreed to the performance bond amounts. The Commission requires

that CWS maintain its performance bond in \$350,000 for water and \$350,000 for sewer operations.

J. Changes to Rates, Charges and Term of Service

1. Irrigation Only Meters

Mr. Cartin testified that after hearing concerns expressed by customers with irrigation only meters, the Company had determined to eliminate the base facilities charge for irrigation only meters for residential customers who are no longer receiving an economic benefit from having an irrigation meter. The impact on revenues will be \$37,946 annually. The Company is not seeking recovery of this lost revenue here. R. p. 320 (Cartin Reb., p. 5, ll. 5-20).

The ORS has no objection to eliminating the base facilities charge on customers with irrigation only meters.

The Commission finds that eliminating the base facilities charge for customers with irrigation only meters is just and reasonable and in the public interest.

2. Backflow Testing.

CWS proposed to change the terms and conditions of its tariff to permit its customers to test their backflow devices every two years. The ORS proposed to limit the testing requirement to every two years for those residential customers with irrigation cross connections. R. pp. 699 - 700 (Schellinger Dir., p. 10, l. 18 – p. 11, l. 6). CWS concurred with the ORS recommendation with the additional provision that if the sewer system utilizes chemical injection, annual testing will be required. R. p. 363 (Gilroy Rebut., p. 1, ll. 1-7).

The Commission finds that permitting CWS' residential irrigation customers to test backflow preventers every two years is reasonable, provided that if the sewer system utilizes chemical injection, annual testing will be required

3. Water Meter Installation Charge

CWS requests authority to increase its Water Meter Installation Charge from \$35.00 to \$45.00 to more closely reflect the utility's costs. (Application at ¶ 20) The ORS has reviewed the cost justification for this increase and agrees the increase is reasonable. R. p. 699 (Schellinger Dir., p. 10, ll.14 – 17). The \$45.00 charge is reasonable and CWS is authorized to increase its Water Meter Installation Charge to \$45.00.

4. Limitation of Liability

CWS seeks authority to limit the liability of the Company, its agents and employees for damages arising out of interruption of service or the failure to furnish service, whether caused by acts or omission, to those remedies provided in the Commission's rules and regulations governing water and wastewater utilities. (Application at ¶ 22). Mr. Cartin points out that the Commission has promulgated regulations for quality of service and interruption of service. Limiting customer remedies to those provided in the regulations will eliminate the prospect of unnecessary litigation and result in cost savings which will benefit customers. R. pp. 310-311 (Cartin Dir., p. 12, l. 14 – p. 13 1, l. 2). The ORS does not oppose the Company's proposed changes to tariff language regarding liability for interruption of service. Interruption of service is regulated by the Commission in S.C, Code Ann. Regs. 103-771 and 103-551. R. p. 670 (Schellinger Dir., p. 11, ll. 7–12) The

proposed limitation of liability to those protections found in S.C. Code Reg. 103-771 and 103-551 is reasonable and is approved.

K. Authorized Revenues

CWS requested in its Application to increase revenues for combined operations by \$4,511,414, comprising a water revenue increase of \$2,272,914 and a sewer revenue increase of \$2,238,500, based on the rate of return on rate base methodology utilizing an ROE of 10.5% and an historical test year ending August 31, 2017. The revenue and expense adjustments to the requested increase in revenue set out herein at the approved ROE of 10.50% produce additional operating revenue of \$2,936,437 consisting of a water revenue increase of \$1,286,127 and a sewer revenue increase of \$1,650,310.

L. Rate Design

Exhibit “A” to the Application contains the Company’s Schedule of Proposed Water Charges. The proposed water rate structure for Territory 1 and Territory 2 will remain the same as approved in Order No. 2015-876. In Territory 1 and Territory 2 there will remain separate charges for Water Supply Customers (where water is supplied by wells owned and operated by CWS) and Water Distribution Customers (where water is purchased from a governmental body or agency or other entity for distribution and resale by CWS). R. p. 264 (Hunter Dir. p. 5, ll. 18–25).

Exhibit “A” to the Application contains the Company’s Schedule of Proposed Sewer Charges. Under the existing tariff, the flat rate charge for Sewer Collection & Treatment Only Customers and the flat rate charge for Sewer Collection Only Customers are two different rates. CWS proposes to combine Sewer Collection & Treatment Only

Customers and Sewer Collection Only Customers into one single rate per unit. Separate rates will remain on the tariff for Mobile Homes, and The Village Sewer Collection Customers. R. p. 265 (Hunter Dir., p.6, ll. 16–23).

Rate design is a matter of discretion for the Commission. In establishing rates, it is incumbent upon us to fix rates which “distribute fairly the revenue requirements [of the utility].” See *Seabrook Island Property Owners Association v. S.C. Public Service Comm’n*, 303 S.C. 493, 499 (1991). Our determination of “fairness” with respect to the distribution of the Company’s revenue requirement is subject to the requirement that it be based upon some objective and measurable framework. See *Utilities Services of South Carolina, Inc., v. South Carolina Office of Regulatory Staff*, 392 S.C. 96, 113-114 (2011).

CWS has combined certain of its sewer rates in this docket moving closer to uniform rates. The water rate design was approved by Order No. 2015-876. No party contests the proposed rate design and it is approved by the Commission.

M. Forty Love Point

The Forty Love Point Homeowners Association intervened questioning sewer service in the neighborhood. Barbara King and Jay Dixon, residents of the Forty Love subdivision, testified that they experienced sewer backups in their homes and chronicled the efforts of CWS to address their concerns. Representatives of CWS and its engineers, DHEC and ORS have met with the witnesses. CWS provides collection only services to Forty Love and Richland County treats the sewage. The witnesses testified that Richland County and CWS should coordinate any remedy for the customer concerns. The witnesses believe their sewer system is outdated and inadequate. The witnesses also contest the

proposed rate increase. R. pp. 608–610 (Dixon Dir. p. 1, l. 1 – p. 4, l. 76); R. pp. 603 – 605 (King Dir., p. 1, l. 1 – p. 3, l. 59).

CWS witness Gilroy testified that the Forty Love sewer system is a LETTS design installed by the developer. LETTS systems are modified septic tanks in which solid waste accumulates in a holding tank with the gray water draining to a common sewer main for transport to the Richland County Utilities treatment plant. CWS has been working with the Kings and Dixons to determine why their LETTS tanks fail to drain during prolonged rain events. CWS believes the elevation and distance between their finished basements and the sewer main outside provides for no leeway when the sewer main backs up slightly. CWS has a contractor working to install a pump tank that will both pump their water into the main and provide the separation needed to eliminate backups of their homes. R. pp. 363–364 (Gilroy Rebut., p. 1, l. 8 – p. 2, l. 10).

CWS is also retaining a professional engineering firm to inspect the system and help solve the sewerage backup problems experienced by these customers. While it is working towards a permanent solution, CWS will continue to alleviate the problem by dispatching pump trucks to the neighborhood when heavy rains are anticipated. CWS is also inspecting each LETTS tank and will reseal them as necessary. Reduced water from the tanks should ease the stress placed on the system. Id.

CWS will continue to communicate the engineering assessment with the outside contractor with Forty Love. CWS and Forty Love have agreed to report their findings to the Commission and ORS in six months – by September 30, 2018. Id. The Commission finds that the agreement between CWS and Forty Love is reasonable.

CWS and the HOA have agreed to the following plan of action which, at their request, the Commission incorporates in its Order:

CWS acknowledges that some of its customers in the Forty Love Point neighborhood have experienced problems with sewerage backups. CWS has taken, and will continue to take, measures to address these customers' concerns. CWS and the HOA agree to cooperatively investigate the source and extent of sewerage problems experienced by customers in the Forty Love Point neighborhood and formulate a plan to address them. The company is retaining an engineering firm to perform an assessment of the Forty Love Point system, and CWS will continue to work with DHEC and Richland County to determine whether issues with the latter's system may be affecting Forty Love Point. CWS and the HOA will report their findings to the PSC and the ORS in six months.

N. Dancing Dolphin, LLC

The Commission requested that the ORS investigate the allegations made by CWS' customer the Dancing Dolphin, LLC. The ORS recommends that CWS complete an inflow and infiltration study and a cost benefits analysis for the sewer system serving the properties owned by the Dancing Dolphin. R. pp. 705– 706 (Schellinger Dir., p. 16, l. 20 - -p. 17, l. 3) CWS will conduct an inflow and infiltration study and provide a report to the Commission within one year of the date of the Order. R. pp. 317–318 (Cartin Rebut., p. 2, 19 - p. 3, l. 2). In addition, CWS has credited the Dancing Dolphin, LLC with one month's bill to address the customer's concerns. R. p. 310 (Cartin Dir. p. 12, ll. 12–13). The Commission finds CWS conduct to be prudent and reasonable.

O. Customer Communications

The record reflects that CWS is working to give its customers a better understanding of the pressures and costs of operating its water and sewer systems. The Company has hired a communications coordinator to direct its customer outreach activities. R. pp. 251-253. Since December of 2017, CWS scheduled meetings with its customers in York County on December 4, 2017, and February 27, 2018; Lexington County on December 5, 2017; Anderson County on December 6, 2017; Richland County on February 21, 2018, and Greenville County on March 1, 2018. At those meetings, CWS gave customers the opportunity to meet with its management and field personnel to learn more about its operations and cost of service. R. p. 371 (Gilroy Resp., p.1, ll. 6–16).

This Commission would observe that, in prior years, the Company’s customer service was perceived by some as being below standard. However, the Company’s testimony in this case shows that it is committed to improvement in a proactive fashion. Relatively few customers appeared to complain about quality of service, as compared to the last several rate cases. We hold that the Company should routinely be responsive on quality of service issues, and that CWS should set the standard for quality and customer service.

However, in order to ensure that the Company is being responsive to quality of service issues, and to its customers, CWS shall prepare a report and submit it to the Commission and to ORS no less than semiannually, and the document should have headings for “Customer Complaint,” “Company Response,” “Customer Reaction to Company,” and explain the Company reaction to Customer Complaints during the period

addressed, along with any explanations regarding quality of service. The Company shall also submit a separate report no less than semiannually reporting on all capital improvements made during the period to enhance customer service and to explain the cost of such capital improvements.

III. FINDINGS OF FACT

1) CWS is a water and sewer utility providing water and sewer service in its assigned service area in South Carolina. The Commission is vested with authority to regulate rates of every public utility in this state and to ascertain and fix just and reasonable rates for service. S.C. §58-5-210, et. seq. CWS's operations in South Carolina are subject to the jurisdiction of the Commission.

2) CWS requested in its Application to increase revenues for combined operations by \$4,511,414 comprising a water revenue increase of \$2,272,914 and a sewer revenue increase of \$2,238,500, based on the rate of return on rate base methodology utilizing an ROE of 10.5% and a historical test year ending August 31, 2017.

3) The test year period for this proceeding, selected by the Company, is September 1, 2016 through August 31, 2017.

4) The Commission will use the return on rate base methodology in determining and fixing just and reasonable rates.

5) The return on rate base methodology requires three components: capital structure, cost of debt, and cost of equity (or ROE).

6) CWS's rate base is \$55,524,956 after the adjustments adopted by the Commission.

7) The Commission adopts and approves of a capital structure of 48.11% long-term debt and 51.89% equity; a cost of debt rate of 6.60%; and an ROE of 10.50%.

8) The approved capital structure, cost of debt rate, and ROE produce additional operating revenue of \$2,936,437 consisting of a water revenue increase of \$1,286,127 and a sewer revenue increase of \$1,650,310.

9) The approved revenues and expenses establish a fair and reasonable operating margin of 13.23%, and a return on rate base of 8.62%.

10) The schedule of rates and terms and conditions attached to this Order as Exhibit A (Order Exhibit 1) are just and reasonable and designed to achieve the Company's new revenue requirement.

IV. CONCLUSIONS OF LAW

Based upon the discussion, findings of fact and the record of the instant proceeding, the Commission makes these Conclusions of Law:

1) CWS is a public utility as defined in S.C. Code § 58-5-10(3) and is subject to the jurisdiction of this Commission.

2) The appropriate test year on which to set rates for CWS is the twelve-month period beginning September 1, 2016 and ending August 31, 2017.

3) Based on the information provided by the parties, the Commission concludes the rate setting methodology to use as a guide in determining the lawfulness of CWS's proposed rates and for fixing just and reasonable rates is return on rate base.

4) For CWS to have the opportunity to earn the 10.5% ROE, found fair and reasonable herein, CWS must be allowed additional revenues of \$2,936,437.

5) The schedule of rates and terms and conditions in the attached Exhibit A are approved for use by CWS and are just and reasonable without undue discrimination and are also designed to meet the revenue requirements of CWS.

6) Pursuant to S.C. Code § 58-5-720 and 10 S.C. Code Regs. §§ 103-512.3 and 103-712.3, CWS will post a performance bond of \$350,000 for water and \$350,000 for sewer operations.

V. ORDERING PROVISIONS

IT IS THEREFORE ORDERED THAT:

I. The rates, fees, and charges in Order Exhibit 1 are both fair and reasonable and will allow CWS to continue to provide its customers with adequate water and wastewater services.

II. The Company is to provide thirty (30) days' notice of the increase to customers of its water and wastewater services prior to the rates and schedules being put into effect for service rendered. The schedules will be deemed filed with the Commission under S.C. Code § 58-5-240.

III. An ROE of 10.5%, return on rate base of 8.62% and operating margin of 13.23% based on the new rates, fees, and charges, is approved for CWS.

IV. The Company will continue to maintain current performance bonds in the amounts of \$350,000 for water operations and \$350,000 for wastewater operations pursuant to S.C. Code § 58-5-720.

V. The Company shall provide the written reports on quality of service and capital improvements no less than semiannually as described above.

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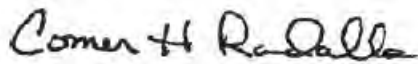
VI. This Order will remain in full force and effect until further order of the Commission.

BY ORDER OF THE COMMISSION:



Swain E. Whitfield, Chairman

ATTEST:



Comer H. Randall, Vice Chairman

EXHIBIT A

Tariff

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

WATER

Service Territory 1

Monthly Charges - Water Supply Customers Only

Where water is supplied by wells owned and operated by the Utility, the following rates apply:

	<u>Current</u>	<u>Proposed</u>
<u>Residential</u>		
Base Facilities Charge per single-family house, condominium, mobile home, or apartment unit	\$14.64 per unit	\$14.43 per unit
Residential Commodity Charge	\$5.69 per 1,000 gal. or 134 cft.	\$5.61 per 1,000 gal. or 134 cft.
<u>Commercial</u>		
Base Facilities Charge by meter size		
5/8" meter *	\$ 14.64 per unit	\$ 14.43 per unit
3/4" meter	\$ 14.64 per unit	\$ 14.43 per unit
1" meter	\$ 38.10 per unit	\$ 37.54 per unit
1.5" meter	\$ 76.21 per unit	\$ 75.10 per unit
2" meter	\$ 121.93 per unit	\$ 120.15 per unit
3" meter	\$ 228.63 per unit	\$ 225.29 per unit
4" meter	\$ 381.16 per unit	\$ 375.59 per unit
8" meter	\$1,171.21 per unit	\$1,154.08 per unit
Commercial Commodity Charge	\$5.69 per 1,000 gal or 134 cft.	\$5.61 per 1,000 gal. or 134 cft.

Monthly Charges - Water Distribution Customers Only

Where water is purchased from a governmental body or agency or other entity for distribution and resale by the Utility, the following rates apply:

<u>Residential</u>		
Base Facilities Charge per single-family house, condominium, mobile home, or apartment unit	\$14.64 per unit	\$14.43 per unit
Residential Commodity Charge	\$6.67 per 1,000 gal. or 134 cft.	\$7.57 per 1,000 gal. or 134 cft.

Corrected

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

	<u>Current</u>	<u>Proposed</u>
<u>Commercial</u>		
Base Facilities Charge		
by meter size		
5/8" meter *	\$ 14.64 per unit	\$ 14.43 per unit
3/4" meter	\$ 14.64 per unit	\$ 14.43 per unit
1" meter	\$ 38.10 per unit	\$ 37.54 per unit
1.5" meter	\$ 76.21 per unit	\$ 75.10 per unit
2" meter	\$ 121.93 per unit	\$ 120.15 per unit
3" meter	\$ 228.63 per unit	\$ 225.29 per unit
4" meter	\$ 381.16 per unit	\$ 375.59 per unit
8" meter	\$1,171.21 per unit	\$1,154.08 per unit
 Commercial Commodity Charge		
	\$6.67 per 1,000 gal. or 134 cft.	\$7.57 per 1,000 gal. or 134 cft/

***A "Fire Line" customer will be billed a monthly base facilities charge of a 5/8" meter or at the rate of any other meter size used as a detector.**

Corrected

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

Service Territory 2

Monthly Charges - Water Supply Customers

Where water is supplied by wells owned and operated by the Utility, the following rates apply:

	<u>Current</u>	<u>Proposed</u>
<u>Residential</u>		
Base Facilities Charge per single-family house, condominium, mobile home or apartment unit:	\$24.72 per unit	\$28.62 per unit
Residential Commodity Charge	\$ 8.88 per 1,000 gal. or 134 cft.	\$10.28 per 1,000 gal. or 134 cft.
<u>Commercial</u>		
Base Facilities Charge by meter size		
5/8" meter*	\$ 24.72 per unit	\$ 28.62 per unit
1" meter	\$ 68.81 per unit	\$ 79.65 per unit
1.5" meter	\$ 126.45 per unit	\$146.38 per unit
3" meter	\$ 431.52 per unit	\$499.53 per unit
Commercial Commodity Charge	\$ 8.88 per 1,000 gal. or 134 cft.	\$10.28 per 1,000 gal. or 134 cft.

Monthly Charges - Water Distribution Customers Only

Where water is purchased from a governmental body or agency or other entity for distribution and resale by the Utility, the following rates apply:

<u>Residential</u>		
Base Facilities Charge per single-family house, condominium, mobile home or apartment unit:	\$ 24.72 per unit	\$ 28.62 per unit
Residential Commodity Charge	\$ 9.41 per 1,000 gal. or 134 cft.	\$ 11.86 per 1,000 gal. or 134 cft.
<u>Commercial</u>		
Base Facilities Charge by meter size:		
5/8" meter*	\$ 24.72 per unit	\$ 28.62 per unit
1" meter	\$ 68.81 per unit	\$ 79.65 per unit
1.5" meter	\$ 126.45 per unit	\$146.38 per unit
3" meter	\$ 431.52 per unit	\$499.53 per unit
Commercial Commodity Charge	\$ 9.41 per 1,000 gal.	\$ 11.86 per 1,000 gal.

Carolina Water Service, Inc.
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SCHEDULE OF PROPOSED RATES AND CHARGES

or 134 cft.

or 134 cft.

***A "Fire Line" customer will be billed a monthly base facilities charge of a 5/8" meter or at the rate of any other meter size used as a detector.**

Carolina Water Service, Inc.
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SCHEDULE OF PROPOSED RATES AND CHARGES

**WATER SERVICE
TERMS AND CONDITIONS
AND
NON-RECURRING CHARGES**

1. Terms and Conditions

A. Where the Utility is required by regulatory authority with jurisdiction over the Utility to interconnect to the water supply system of a government body or agency or other entity and tap/connection/impact fees are imposed by that entity, such tap/connection/impact fees will also be charged to the Utility's affected customers on a pro rata basis, without markup.

B. Commercial customers are those not included in the residential category above and include, but are not limited to, hotels, stores, restaurants, offices, industry, etc.

C. The Utility will, for the convenience of the owner, bill a tenant in a multi-unit building, consisting of four or more residential units (or in such other circumstances as the law may allow from time to time), which is served by a master water meter or a single water connection. However, in such cases all arrearages must be satisfied before service will be provided to a new tenant or before interrupted service will be restored. Failure of an owner to pay for services rendered to a tenant in these circumstances may result in service interruptions.

D. When, because of the method of water line installation utilized by the developer or owner, it is impractical to meter each unit separately, service will be provided through a single meter, and consumption of all units will be averaged; a bill will be calculated based on that average and the result multiplied by the number of units served by a single meter.

E. Billing Cycle

Recurring charges will be billed monthly in arrears. Nonrecurring charges will be billed and collected in advance of service being provided.

F. Extension of Utility Service Lines and Mains

The Utility shall have no obligation at its expense to extend its utility service lines or mains in order to permit any customer to connect to its water system. However, anyone or entity which is willing to pay all costs associated with extending an appropriately sized and constructed main or utility service line from his/her/its premises to any appropriate connection point, and pay the appropriate fees and charges as set forth in this rate schedule, and comply with the guidelines and standards hereof, shall not be denied service unless water supply is unavailable or unless the South Carolina Department of Health and Environmental Control or other government entity has for any reason restricted the Utility from adding additional customers to the serving water system. In no event will the Utility be required to construct additional water supply capacity to serve any customer or entity without an agreement acceptable to the Utility first having been reached for the payment of all costs associated with adding water supply capacity to the affected water system.

Carolina Water Service, Inc.
Docket No. 2017-292-WS

SCHEDULE OF PROPOSED RATES AND CHARGES

G. Cross-Connection Inspection

Any customer installing, permitting to be installed, or maintain any cross connection between the Utilities water system and any other non-public water system, sewer, or a line from any container of liquids or other substances, must install an approved back-flow prevention device in accordance with 24A S.C. Code Ann. Regs. R.61-58.7.F.2, as may be amended for time to time. Such a customer shall have such cross connection inspected by a licensed certified tester and provide to Utility a copy of written inspection report indicating the back-flow device is functioning properly and testing results submitted by the tester in accordance with 24A S.C. Code Ann. Regs. R.61-58.7.F.2, as may be amended from time to time. Said report and results must be provided by the customer to the Utility no later June 30th of each year for required residential and commercial customers, provided that said report and results for residential irrigation customers shall be provided by the customer to the Utility no later than June 30th of every other year (unless the sewer system utilizes chemical injection for which annual testing will be required). Should a customer subject to these requirements fail to timely provide such report and results, Utility may arrange for inspection and testing by a licensed certified tester and add the charges incurred by the Utility in that regard to the customer's next bill. If after inspection and testing by the Utility's certified tester, the back-flow device fails to function properly, the customer will be notified and given a 30 day period in which to have the back-flow device repaired or replaced with a subsequent follow-up inspection by a licensed certified tester indicating the back-flow device is functioning properly. Failure to submit a report indicating the back-flow device is functioning properly will result in discontinuation of water service to said customer until such time as a passing inspection report is received by Utility.

H. A Single Family Equivalent (SFE) shall be determined by using the South Carolina Department of Health and Environmental Control Guidelines for Unit Contributory Loadings for Domestic Wastewater Treatment Facilities -- 6 S.C. Code Ann. Regs. 61-67 Appendix A, as may be amended from time to time. Where applicable, such guidelines shall be used for determination of the appropriate monthly service and tap fee. The Company shall have the right to request and receive water usage records from the water provider to its customers. In addition, the Company shall have the right to conduct an inspection of the customer's premises. If it is determined that actual flows or loadings are greater than the design flows or loadings, then the Company shall recalculate the customer's equivalency rating based on actual flows or loadings and thereafter bill for its services in accordance with such recalculated loadings.

I. The liability of the Company, its agents and employees for damages arising out of interruption of service or the failure to furnish service, whether caused by acts or omission, shall be limited to those remedies provided in the Public Service Commission's rules and regulations governing water utilities.

Carolina Water Service, Inc.
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SCHEDULE OF PROPOSED RATES AND CHARGES

2. Non-Recurring Charges

- A. Water Service Connection (New connections only) - \$300 per SFE
- B. Plant Impact Fee (New connections only) - \$400 per SFE

The Plant Capacity Fee reflects the portion of plant capacity which will be used to provide service to the new customers as authorized by Commission Rule R. 103-702.13. The plant capacity fee represents the Utility's investment previously made (or planned to be made) in constructing water production, treatment and/or distribution facilities that are essential to provide adequate water service to the new customer's property.

- C. Water Meter Installation - 5/8 inches x 3/4 inches meter \$45.00

All 5/8 inch x 3/4 inch water meters shall meet the Utility's standards and shall be installed by the Utility. A one-time meter fee of \$35 shall be due upon installation for those locations where no 5/8 inch x 3/4 inch meter has been provided by a developer to the Utility.

For the installation of all other meters, the customer shall be billed for the Utility's actual cost of installation. All such meters shall meet the Utility's standards and be installed by the Utility unless the Utility directs otherwise.

- D. Customer Account Charge – (New customers only) \$30.00

A one-time fee to defray the costs of initiating service.

E. Reconnection Charges: In addition to any other charges that may be due, in those cases where a customer's service has been disconnected for any reason as set forth in Commission Rule R.103-732.5, a reconnection fee shall be due in the amount of \$40.00 and shall be due prior to the Utility reconnecting service.

F. Tampering Charge: In the event the Utility's equipment, water mains, water lines, meters, curb stops, service lines, valves or other facilities have been damaged or tampered with by a customer, the Utility may charge the customer responsible for the damage the actual cost of repairing the Utility's equipment, not to exceed \$250. The tampering charge shall be paid in full prior to the Utility re-establishing service or continuing the provision of service.

Carolina Water Service, Inc.
Docket No. 2017-292-WS
SCHEDULE OF PROPOSED RATES AND CHARGES

SEWER

Service Territory 1 and 2

(Former customers of Carolina Water Service, Inc., Utilities Services of SC, Inc. and United Utility Companies, Inc.)

Former Customers of Carolina Water Service, Inc.

Monthly Charges – Sewer Collection & Treatment Only

Where sewage collection and treatment are provided through facilities owned and operated by the Utility, the following rates apply:

	<u>Current</u>	<u>Proposed</u>
Residential - charge per single-family house, condominium, villa, or apartment unit:	\$57.58 per unit	\$65.69 per unit
Mobile Homes:	\$42.01 per unit	\$47.94 per unit
Commercial	\$57.58 per SFE*	\$65.69 per SFE*

Commercial customers are those not included in the residential category above and include, but are not limited to, hotels, stores, restaurants, offices, industry, etc.

Monthly charge – Sewer Collection Only

When sewage is collected by the Utility and transferred to a government body or agency, or other entity for treatment, the Utility's rates are as follows:

Residential – per single-family house, condominium, or apartment unit	\$52.93 per unit	\$65.69 per unit
Commercial	\$52.93 per SFE*	\$65.69 per SFE*
The Village Sewer Collection	\$29.95 per SFE*	\$34.18 per SFE*

* Single Family Equivalent (SFE) shall be determined by using the South Carolina Department of Health and Environmental Control Guidelines for Unit Contributory Loadings for Domestic Wastewater Treatment Facilities -- 25 S.C. Code Ann. Regs. 61-67 Appendix A, as may be amended from time to time. Where applicable, such guidelines shall be used for determination of the appropriate monthly service and tap fee.

Corrected

SEWER SERVICE

SCHEDULE OF PROPOSED RATES AND CHARGES

TERMS AND CONDITIONS AND NON-RECURRING CHARGES

1. Terms and Conditions

A. Where the Utility is required under the terms of a 201/208 Plan, or by other regulatory authority with jurisdiction over the Utility, to interconnect to the sewage treatment system of a government body or agency or other entity and tap/connection/impact fees are imposed by that entity, such tap/connection/impact fees will be charged to the Utility's affected customers on a pro rata basis, without markup.

B. The Utility will, for the convenience of the owner, bill a tenant in a multi-unit building, consisting of four or more residential units (or in such other circumstances as the law may allow from time to time), which is served by a master sewer meter or a single sewer connection. However, in such cases all arrearages must be satisfied before service will be provided to a new tenant or before interrupted service will be restored. Failure of an owner to pay for services rendered to a tenant in these circumstances may result in service interruptions.

C. Billing Cycle

Recurring charges will be billed monthly in arrears. Non-recurring charges will be billed and collected in advance of service being provided.

D. Toxic and Pretreatment Effluent Guidelines

The utility will not accept or treat any substance or material that has been defined by the United States Environmental Protection Agency ("EPA") or the South Carolina Department of Health and Environmental Control ("DHEC") as a toxic pollutant, hazardous waste, or hazardous substance, including pollutants falling within the provisions of 40 CFR 129.4 and 401.15. Additionally, pollutants or pollutant properties subject to 40 CFR 403.5 and 403.6 are to be processed according to pretreatment standards applicable to such pollutants or pollutant properties, and such standards constitute the Utility's minimum pretreatment standards. Any person or entity introducing such prohibited or untreated materials into the Company's sewer system may have service interrupted without notice until such discharges cease, and shall be liable to the Utility for all damages and costs, including reasonable attorney's fees, incurred by the Utility as a result thereof.

E. Extension of Utility Service Lines and Mains

The Utility shall have no obligation at its expense to extend its utility service lines or mains in order to permit any customer to discharge acceptable wastewater into one of its sewer systems. However, anyone or entity which is willing to pay all costs associated with extending an appropriately sized and constructed main or utility service line from his/her/its premises to any appropriate connection point, and pay the appropriate fees and charges as set forth in this rate schedule, and comply with the guidelines and standards hereof, shall not be denied service unless sewer capacity is unavailable or unless the South Carolina Department of Health and Environmental Control or other government entity has for any reason restricted the Utility from adding additional customers to the serving sewer system.

**Carolina Water Service, Inc.
Docket No. 2017-292-WS**

SCHEDULE OF PROPOSED RATES AND CHARGES

In no event will the Utility be required to construct additional sewer treatment capacity to serve any customer or entity without an agreement acceptable to the Utility first having been reached for the payment of all costs associated with adding wastewater treatment capacity to the affected sewer system.

F. A Single Family Equivalent (“SFE”) shall be determined by 6 S.C. Code Ann. Regs. 61-67 Appendix A, as may be amended from time to time. Where applicable, such guidelines shall be used for determination of the appropriate monthly service, plant impact fee and tap fee. The Company shall have the right to request and receive water usage records from the water provider to its customers. In addition, the Company shall have the right to conduct an inspection of the customer’s premises. If it is determined that actual flows or loadings are greater than the design flows or loadings, then the Company shall recalculate the customer’s equivalency rating based on actual flows or loadings and thereafter bill for its services in accordance with such recalculated loadings.

G. The liability of the Company, its agents and employees for damages arising out of interruption of service or the failure to furnish service, whether caused by acts or omission, shall be limited to those remedies provided in the Public Service Commission’s rules and regulations governing wastewater utilities.

2. Solids Interceptor Tanks

For all customers receiving sewage collection service through an approved solids interceptor tank, the following additional charges shall apply:

A. Pumping Charge

At such time as the Utility determines through its inspection that excessive solids have accumulated in the interceptor tank, the Utility will arrange for the pumping tank and will include \$150.00 as a separate item in the next regular billing to the customer.

B. Pump Repair or Replacement Charge

If a separate pump is required to transport the customer’s sewage from solids interceptor tank to the Utility’s sewage collection system, the Utility will arrange to have this pump repaired or replaced as required and will include the cost of such repair or replacement as a separate item in the next regular billing to the customer and may be paid for over a one-year period.

C. Visual Inspection Port

In order for a customer who uses a solids interceptor tank to receive sewage service from the Utility or to continue to receive such service, the customer shall install at the customer’s expense a visual inspection port which will allow for observation of the contents of the solids interceptor tank and extraction of test samples therefrom. Failure to provide such visual inspection port after timely notice of not less than thirty (30) days shall be just cause for interruption of service until a visual inspection port has been installed.

Carolina Water Service, Inc.
Docket No. 2017-292-WS

SCHEDULE OF PROPOSED RATES AND CHARGES

3. Non-recurring Charges

- A. Sewer Service Connection (New connections only) \$300 per SFE
- B. Plant Capacity Fee (New connections only) \$400 per SFE

The Plant Capacity Fee shall be computed by using South Carolina DHEC "Guide Lines for Unit Contributory Loadings to Wastewater Treatment Facilities" (1972) to determine the single family equivalency rating. The plant capacity fee represents the Utility's investment previously made (or planned to be made) in constructing treatment and/or collection system facilities that are essential to provide adequate treatment and disposal of the wastewater generated by the development of the new property.

The nonrecurring charges listed above are minimum charges and apply even if the equivalency rating of non-residential customer is less than one (1). If the equivalency rating of a non-residential customer is greater than one (1), then the proper charge may be obtained by multiplying the equivalency rating by the appropriate fee. These charges apply and are due at the time new service is applied for, or at the time connection to the sewer system is requested.

C. Notification Fee

A fee of \$15.00 shall be charged to each customer per notice to whom the Utility mails the notice as required by Commission Rule R. 103-535.1 prior to service being discontinued. This fee assesses a portion of the clerical and mailing costs of such notices to the customers creating the cost.

D. Customer Account Charge - (New customers only)

\$30.00

A one-time fee to defray the costs of initiating service. This charge will be waived if the customer is also a water customer.

- E. Reconnection Charges: In addition to any other charges that may be due, in those cases where a customer's service has been disconnected for any reason as set forth in Commission Rule R. 103-532.4 a reconnection fee in the amount of \$500.00 shall be due at the time the customer reconnects service. Where an elder valve has been previously installed, a reconnection fee of \$40.00 shall be charged.
- F. Tampering Charge: In the event the Utility's equipment, sewage pipes, meters, curb stops, service lines, elder valves or other facilities have been damaged or tampered with by a customer, the Utility may charge the customer responsible for the damage the actual cost of repairing the Utility's equipment, not to exceed \$250. The tampering charge shall be paid in full prior to the Utility re-establishing service or continuing the provision of service.

FILED 6/4/2021
DOCUMENT NO. 04546-2021
FPSC - COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Application for increase in water and
wastewater rates in Charlotte, Highlands, Lake,
Lee, Marion, Orange, Pasco, Pinellas, Polk,
and Seminole Counties, by Utilities, Inc. of
Florida.

DOCKET NO. 20200139-WS
ORDER NO. PSC-2021-0206-FOF-WS
ISSUED: June 4, 2021

The following Commissioners participated in the disposition of this matter:

GARY F. CLARK, Chairman
ART GRAHAM
ANDREW GILES FAY
MIKE LA ROSA

FINAL ORDER

BY THE COMMISSION:

MARTIN S. FRIEDMAN, ESQUIRE, DEAN MEAD, 420 South Orange
Avenue, Suite 700, Orlando, FL 32801
JOHN L. WHARTON, ESQUIRE, DEAN, MEAD & DUNBAR, 106 East
College Avenue, Suite 1200, Tallahassee, Florida 32301
On behalf of Utilities, Inc. of Florida (UIF).

RICHARD GENTRY, CHARLES J. REHWINKEL, STEPHANIE MORSE,
ANASTACIA PIRRELLO, ESQUIRES, Office of Public Counsel, c/o The
Florida Legislature, 111 West Madison Street, Room 812, Tallahassee, Florida
32399-1400
On behalf of the Citizens of the State of Florida (OPC).

WALTER L. TRIERWEILER and BIANCA Y. LHERISSON, ESQUIRES,
Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee,
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On behalf of the Florida Public Service Commission (Staff).

MARY ANNE HELTON, ESQUIRE, Deputy General Counsel, Florida Public
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Advisor to the Florida Public Service Commission.

KEITH C. HETRICK, ESQUIRE, General Counsel, Florida Public Service
Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850
Florida Public Service Commission General Counsel.

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Acronym Table

The following abbreviations used herein are listed below for reference purposes:

AA	Accumulated Amortization
AC	Asbestos Cement
ADIT	Accumulated Deferred Income Tax
AFUDC	Allowance for Funds Used During Construction
ARCH	Autoregressive Conditional Heteroskedasticity
BFC	Base Facility Charge
CAPM	Capital Asset Pricing Model
CIAC	Contributions in Aid of Construction
CIP	Capital Improvement Plan
CIPP	Cured-in-place Pipe
CRU-US	Corix Regulated Utilities (U.S.), Inc.
CWIP	Construction Work in Progress
DBP	Disinfection Byproducts
DCF	Discounted Cash Flow
DEP	Department of Environmental Protection
ECAPM	Empirical Capital Asset Pricing Model
EPS	Earnings Per Share
ERC	Equivalent Residential Connection
ERP	Equity Risk Premium
EUW	Excessive Unaccounted for Water
EWD	Englewood Water District
EXH	Exhibit
F.A.C.	Florida Administrative Code
FDOT	Florida Department of Transportation
FM	Force Main
FMV	Fair Market Value
F.S.	Florida Statutes
GARCH	Generalized Form of Autoregressive Conditional Heteroskedasticity
GDP	Gross Domestic Product
GRIP	Gas Reliability Infrastructure Program
GSM	Gravity Sewer Mains
GST	Gravity Storage Tank
I&I	Infiltration and/or Inflow
IDC	Interest During Construction
IRS	Internal Revenue Service
KWRU	KW Resorts Utilities Corp.
LUSI	Lake Utility Services, Inc.
MFRs	Minimum Filing Requirements
NARUC	National Association of Regulatory Utility Commissioners
O&M	Operation and Maintenance
OPC	Office of Public Counsel
PAA	Proposed Agency Action

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PCF	UIF Witness Flynn's Exhibits
PFAS	Polyfluoroalkyl Substances
PRPM	Predicted Risk Premium Model
PVC	Polyvinyl Chloride
RAFs	Regulatory Assessment Fees
RAS	Return Activated Sludge
RPM	Risk Premium Model
RRA	Regulatory Research Associates
ROE	Return on Equity
RTU	Remote Terminal Unit
SCADA	Supervisory Control & Data Acquisition
SWIM	Sewer and Water Improvement Mechanism
TOTI	Taxes Other than Income
TR	Transcript
U&U	Used and Useful
UIF	Utilities, Inc. of Florida
USOA	Uniform System of Accounts
WACC	Weighted Average Cost of Capital
WM	Water Mains
WSC	Water Service Corporation
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

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BACKGROUND

Utilities, Inc. of Florida (UIF or Utility) is a Class A utility providing water and wastewater service to 27 systems in the following counties: Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole. UIF is a wholly-owned subsidiary of Utilities, Inc. (UI). The Utility's last rate proceeding, processed in Docket No. 20160101-WS, utilized a historic December 31, 2015, test year.¹ That proceeding culminated in Order No. PSC-2017-0361-FOF-WS, issued September 25, 2017, as amended by Order No. PSC-2017-0361A-FOF-WS, issued October 4, 2017.

On October 20, 2017, the Office of Public Counsel (OPC) and Seminole County each filed a notice of administrative appeal with the First District Court of Appeal (the First DCA or the Court).² Our decision was affirmed by the First DCA in the appeal by Seminole County.³ In OPC's appeal, the Court affirmed our order except as to that portion of the used and useful (U&U) determination involving prepaid connections. The Court remanded this issue to us to determine the extent to which prepaid connections meet the requirements of Section 367.081(2)(a)2.b., F.S.⁴ For property to be considered used and useful in the public service under Section 367.081(2)(a)2.b., F.S., it must be shown to be "needed to serve customers 5 years after the end of the test year."

On remand from the First District Court of Appeal, in Order No. PSC-2019-0363-PAA-WS, issued on August 27, 2019, addressed the reversed and remanded portion of OPC's appeal, its effect on our previous decisions, and the Utility's motion for appellate and remand rate case expense.

Additionally, we approved a single, consolidated rate structure. The Utility's last rate proceeding occurred in Docket No. 20160101-WS utilizing a historic December 31, 2015, test year.⁵

In 2019, the Utility recorded total company operating revenues of \$16,396,327 for water and \$20,840,529 for wastewater, respectively. UIF reported net operating income for 2019 of \$3,726,366 for water and \$5,185,175 for wastewater. In 2019, UIF had 33,736 water and 23,885 wastewater customers for its combined systems.

On July 13, 2020, UIF filed an application for approval of interim and final water and wastewater rate increases. By letter dated August 5, 2020, our staff advised the Utility that its Minimum Filing Requirements (MFRs) had deficiencies. The Utility filed its response on August 24, 2020. A second deficiency letter was issued on August 28, 2020. The Utility filed a response to Commission staff's second deficiency letter on August 31, 2020, correcting its remaining

¹ *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*

² Document Nos. 09000-2017 and 09009-2017.

³ No. 1D17-4438.

⁴ *Citizens of State v. Florida Public Service Commission*, 294 So. 3d 961 (Fla. 1st DCA 2019).

⁵ *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*

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deficiencies, and thus, August 31, 2020, became the official filing date pursuant to Sections 367.081 and 367.083, Florida Statutes (F.S.).

The Utility's application for increased interim and final water and wastewater rates is based on the historical 13-month average period ended December 31, 2019. The requested final rates include adjustments for pro forma projects. UIF requested final rates designed to generate additional revenues of \$2,812,445, or 16.94 percent, for water operations and \$6,521,686, or 32.12 percent, for wastewater operations.

Upon its request, the Office of Public Counsel (OPC) was added as an interested person to this docket on April 20, 2020. The intervention of the OPC was acknowledged by Order No. PSC-2020-0259-PCO-WS, issued July 24, 2020, in this docket.

On April 21, 2020, UIF filed a Petition for Variance or Waiver of a specific provision from Rule 25-30.437, Florida Administrative Code (F.A.C.), to waive the requirement to provide additional detailed billing analyses for each rate change period in the test year. By Order No. PSC-2020-0211-PAA-WS, issued June 26, 2020, this Commission approved the Utility's petition.

By Order No. PSC-2020-0322-PCO-WS, issued September 21, 2020, we authorized the collection of interim water and wastewater rates, subject to refund, pursuant to Section 367.082, F.S. The approved interim revenue requirements represented an increase of \$918,223 for water and \$1,051,222 for wastewater operations.⁶

Five customer service hearings were held via teleconference over the following dates: December 3, 2020, December 10, 2020, and January 6-7, 2021.

A formal evidentiary hearing was held on February 2-3, 2021. At the hearing, we approved Type II stipulations for Excessive Unaccounted for Water (EUW), Excessive Infiltration and/or Inflow (I&I), Used and Useful (U&U) – Water Treatment, U&U – Storage, U&U – Wastewater Treatment, U&U – Wastewater Collection Lines, U&U – Wastewater Distribution, Rate Case Expense, Operating Expense Amortizations, Water Rate Structure, Wastewater Rate Structure, Private Fire Protection Charges, Reuse Rates, Customer Deposits, Guaranteed Revenue Charges, Customer Deposits Included in Capital Structure, Cost Rates for Short-Term Debt, and Cost Rates for Long-Term Debt.⁷ Those approved stipulations are set forth herein. The Parties filed post-hearing briefs on the remaining contested issues on February 23, 2021.

⁶ Order No. PSC-2020-0322-PCO-WS, issued September 21, 2020, in Docket No. 20200139-WS, *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*

⁷ OPC takes no position on these issues nor does it have the burden of proof related to them. As such, OPC represents that it will not contest or oppose this Commission taking action approving a proposed stipulation between the Company and another party or our staff as a final resolution of these issues. No person is authorized to state that OPC is a participant in, or party to, a stipulation on these issues, either in this docket, in an order of this Commission, or in a representation to a Court.

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This Order addresses the remaining issues concerning the Utility's final requested rates. As needed, individual systems within the consolidated Utility will be referred by their former names as follows: Cypress Lake Utilities, Inc. (Cypress Lakes), Utilities, Inc. of Eagle Ridge (Eagle Ridge), Labrador Utilities, Inc. (Labrador), Lake Placid Utilities, Inc. (Lake Placid), Lake Utility Services, Inc. (LUSI), Utilities, Inc. of Longwood (Longwood), Mid-County Services, Inc. (Mid-County), Utilities, Inc. of Pennbrooke (Pennbrooke), Utilities Inc. of Sandalhaven (Sandalhaven), Sanlando Utilities Corporation (Sanlando), Tierra Verde Utilities, Inc. (Tierra Verde), and Utilities, Inc. of Florida (UIF-Marion, UIF-Pinellas, UIF-Orange, UIF-Pasco, and UIF-Seminole. We have jurisdiction pursuant to Section 367.081, F.S.

DECISION

I. Quality of Service

A. Parties' Arguments

1. UIF

UIF asserted the quality of service for all its systems is satisfactory and most customers that attended one of the five virtual customer service hearings addressed the rate increase, not quality of service. UIF acknowledged that we evaluate quality of service based on three components: quality of the utility's product, operating conditions, and attempts to address customer satisfaction. The Utility stated that OPC did not outline its arguments in these three categories; but instead, its arguments are directed to systems with current or past Consent Orders with DEP. UIF argued this relates to the operating category and not the water quality customers receive. UIF noted that according to OPC the quality of service for LUSI, Sanlando Utilities (Wekiva Hunt Club), and the Mid-County systems is unsatisfactory.

In its brief, UIF separately addressed the three components noted above. The Utility argued the quality of the Utility's product (water) is satisfactory and specifically addresses the Summertree, LUSI, Sanlando, and Pennbrooke systems. UIF contended Summertree has had the most improvement since the last rate case with the completion of the interconnection with Pasco County in 2016. UIF stated water quality complaints have declined, and DEP has received no water quality complaints since the system was interconnected. The Utility stated that LUSI was determined to be marginal in the last rate case due to an open Consent Order regarding disinfection byproducts (DBP) exceedances. The Utility argued it should now be considered satisfactory because there were no customer complaints about water quality and DEP considers this system to be in compliance. For the Sanlando system, the main complaint of the customers that testified at the service hearings was the magnitude of the rate increase; however, while there were some comments related to water quality, none of them indicated "that there were systemic water quality issues." The Utility stated that DEP's records do not indicate any water quality complaints since 2017, and only a half dozen before that. Regarding Pennbrooke, UIF stated that three customers testified at the service hearings regarding aesthetics and hardness. In addition, OPC witness Lewis testified that she made contact with two residents in Pennbrooke who did not like the water quality and purchased filtration systems. UIF noted that neither of these customers

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had ever contacted the Utility to complain about water quality. Moreover, DEP has found this system to be in compliance and reported one water quality complaint in 2017.

Next, the Utility addressed operating conditions and argued that all systems are in compliance, except the Mid-County and Sanlando wastewater systems (Wekiva Hunt Club). The Utility specifically addressed both systems and the LUSI system. UIF countered OPC witness Lewis' recommendation that the Mid-County system be found unsatisfactory with a 50-basis point reduction, by stating the Consent Order was due to not having submitted final paperwork and the Consent Order was closed on December 21, 2020. The Utility also refuted witness Lewis's recommendation that the Sanlando wastewater system (Wekiva Hunt Club) should be found not satisfactory and a 50-basis point reduction should be applied due to current and past Consent Orders. The Utility asserted that since two pro forma projects are being requested in this docket, the compliance issue related to unauthorized discharges will be resolved and because UIF is taking the necessary "steps to meet the requirements of the Consent Order," a penalty should not be imposed. The Utility stated that witness Lewis recommended a marginal or unsatisfactory determination for the LUSI system due to a Consent Order from DEP relating to DBP exceedances. UIF argued the system is in compliance with DEP and the prior issues related to DBP exceedances have been resolved.

Last, in order to address customer satisfaction, the Utility contended it improved customer service and communications by creating a new position, Director of External Affairs, which Mr. Snow holds. UIF argued that based on the records, UIF timely addressed customer service issues; therefore, the Utility's attempt to address customer satisfaction should be considered satisfactory. This Commission has logged fewer complaints during this rate case's analyzed 5-year period compared to the same relative time of the Utility's last rate case. Twelve of the 18 water quality complaints recorded with DEP were for two of UIF's largest systems, Sanlando and LUSI. The Utility argued that DEP considers no water system out of compliance because of secondary water quality standards. Additionally, UIF reorganized its Customer Experience department to respond to the customers by their preferred method of communication and has expanded its platform for customer feedback and information to social media and its application, MyUtilityConnect. OPC witness Lewis commented on the number of billing complaints, to which UIF responded that it works with each customer individually to address high bill complaints.

2. OPC

OPC contended that UIF's overall quality of service is not satisfactory due to issues with the: LUSI, Sanlando (Wekiva Hunt Club), Mid-County, and Pennbrooke systems. OPC argued for a minimum of a 50-basis point reduction to LUSI, Mid-County, and Pennbrooke's return on equity (ROE) and a 100-basis point reduction to Sanlando's (Wekiva Hunt Club) ROE.

Regarding DEP compliance, OPC argued that UIF demonstrated consistent mismanagement of its facilities and that there has been a consistent pattern of compliance issues at UIF's wastewater facilities. Witness Lewis identified six Consent Orders relating to three facilities. Specifically, Wekiva Hunt Club/Sanlando was subject to three Consent Orders, in 2015, 2018, and 2019, all for the discharge of untreated or improperly treated wastewater. Mid-

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County was also the subject of two Consent Orders, in 2018 and 2019. LUSI was the subject of a 2015 Consent Order related to maximum contaminant levels. OPC went on to note that Commission staff witness Hicks testified that the LUSI system had the second highest incidence of complaints recorded in this Commission's Consumer Activity Tracking System and about 20 percent of those LUSI complaints related to quality of service.

During the five customer service hearings, OPC contended that customers testified about poor water quality and having to purchase bottled water since home filters are too expensive. Customers also complained of staining on home appliances and home exteriors from their water. Further, customers stated they were then required to clean the stains on their homes or be fined by their homeowners' association. OPC argued that customers should not have this additional burden due to their water quality. Customers also had issues regarding the Utility's emergency telephone line going unanswered.

OPC contended that the Utility "should not be allowed to operate in non-compliance during the test year, later resolve the deficiencies in time for the rate case, and then expect to receive a clean bill of health from the Commission." OPC argues we should look at the Utility's history of non-compliance and take this into consideration when setting new rates. Further, OPC argues we should find UIF's quality of service to be unsatisfactory based on the Utility's compliance history with DEP as well as customer testimony for the following four systems: LUSI, Sanlando (Wekiva Hunt Club), Mid-County, and Pennbrooke. OPC also asserted that UIF's ROE should be reduced by a minimum of 50-basis points for LUSI, Mid-County, and Pennbrooke, and 100-basis points for Sanlando (Wekiva Hunt Club).

B. Analysis

Pursuant to Rule 25-30.433(1), F.A.C., this Commission "in every rate case shall make a determination of the quality of service provided by the utility by evaluating the quality of the Utility's product (water) and the Utility's attempt to address customer satisfaction (water and wastewater)." Also, pursuant to Rule 25-30.433(2), F.A.C., "in order to ensure safe, efficient, and sufficient service to utility customers, the Commission shall consider whether the infrastructure and operational conditions of the plant and facilities are in compliance with Rule 25-30.225, F.A.C." In doing so, we shall consider test results, inspections, complaints, testimony, as well as any citations, violations, or Consent Orders on file with DEP and county health department pursuant to Rule 25-30.433, F.A.C.

Section 367.0812(1), F.S., additionally requires us, in fixing rates, to consider the extent to which the utility provides water service that meets secondary water quality standards as established by DEP. Primary water standards relate to the safety of the water, while secondary standards relate to the aesthetics of the water like taste, color, odor, and sediment.

Rule 25-30.433(1), F.A.C., requires that the testimony of a utility's customers be considered in a rate case proceeding. Five remote service hearings were held due to the ongoing COVID-19 pandemic. There were a total of 42 customers and one appointed official that testified at the service hearings. Each customer that testified expressed their dissatisfaction with UIF's proposed rate increase; some customers also testified regarding odor, discolored water, or the

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additional cost of buying bottled water. Of the total customers who provided testimony at the service hearings, OPC asserted 35 percent addressed poor water quality, such as odor or bad taste, and 22 percent addressed customer service issues. However, we found that only 11 customers testified to quality of service related issues, which includes poor water quality, and three customers testified to customer service issues, which is approximately 26 and 7 percent, respectively, of the total 43 participants. UIF asserted that the majority of the customer comments from the service hearings were concerning the proposed rate increase and not relating to quality of service.

DEP provided compliance and complaint data from January 1, 2015, through August 31, 2020, which was included in the hearing record. DEP received a total of 44 complaints during this 5-year period: 23 complaints related to water and 21 complaints related to wastewater. The water complaints consisted of concerns primarily regarding odor, color, and pressure, and the wastewater complaints consisted of primarily odor concerns.

The Utility provided the complaints it received during the test year and four years prior in Vol. III of its MFRs. There were 1,460 billing and 2,532 service complaints for the test year for all of the Utility's systems. UIF's secondary water quality complaints for the four years prior to the test year amounted to 998 complaints, with some complaints having been addressed in prior rate proceedings.

As of February 3, 2021, there were a total of 906 comments, filed by 820 customers, in the docket file. UIF serves over 60,000 water and wastewater customers; therefore, approximately 1.4 percent of the Utility's customers provided comments in the instant docket. We analyzed all comments in the docket file and a total of 812 customers provided comments expressing their discontent with the proposed rate increase. In addition, 78 customers, approximately 9.5 percent of the total customers that commented in the docket file, provided comments regarding the quality of service and addressed their dissatisfaction with the odor, color, and pressure of their water product. Several customers provided comments also expressing their dissatisfaction with the Utility's customer service and pointed out that UIF's emergency number was not adequately managed.

We received a total of 194 complaints from October 5, 2015, through October 5, 2020, with 69 percent of the complaints concerning billing issues, and the remaining 31 percent concerning quality of service issues. Commission staff witness Hicks testified that most complaints for the analyzed 5-year period came from Seminole County, with 133 complaints followed by Lake County with 31 complaints. Out of the total complaints for both Seminole and Lake Counties, there were only six complaints regarding quality of service. UIF serves over 24,000 customers in Seminole County (Sanlando and UIF-Seminole) and over 18,000 customers in Lake County (LUSI and Pennbrooke). The total customer complaints we received represents a small fraction of UIF's customer base within Seminole and Lake Counties and also with respect to the Utility in its entirety. Further, witness Hicks testified that most of the UIF complaints received by this Commission were resolved or closed. Witness Hicks also stated that the Utility may have violated our rules for 15 of the 194 complaints received by this Commission. The majority of these potential rule violations involved inaccurate meters and meter readings,

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customer billing, deposit refunds, and failing to respond to the customers or us in a timely manner.

OPC witness Lewis focused her testimony on quality of service issues identified by DEP and customer testimony, complaints, and comments. The witness testified to specific concerns regarding past and present Consent Orders for the following systems: LUSI, Sanlando (Wekiva Hunt Club), and Mid-County. Witness Lewis asserted that we should consider the issues identified in the Consent Orders, even if the Utility has since corrected any deficiencies. With respect to the complaint-related documentation of this case, the witness testified that the majority of complaints are related to billing, but there were also several complaints related to customer service. Witness Lewis argued that the Utility does not respond to these complaints, until or unless the customer contacts us and we subsequently facilitate contact between the Utility and customer. The witness supported her argument by indicating that she spoke with three customers from different systems about the quality of the water product and associated issues, which included discussions regarding the color, odor, and staining of the product, as well as purchasing supplemental water filtration systems to help mitigate these issues. Witness Lewis recommended a finding of marginal or unsatisfactory quality of service for LUSI, Sanlando (Wekiva Hunt Club), and Mid-County, with a potential 50-basis point reduction to the Utility's ROE if we find the quality of service for these systems is unsatisfactory. Further, the witness concluded that if a specific system has a history of repeated or unresolved issues, the ROE should be reduced by 100-basis points, but she did not identify a particular system where this may be applicable. In its brief, OPC recommends, for the first time, that Pennbrooke be considered unsatisfactory; however, OPC provided limited support for its assessment of Pennbrooke's quality of service, and instead focused on two customer complaints and 3 service hearing comments concerning secondary water quality standards discussed in detail below. Further, in its brief, OPC argued we should find the quality of service unsatisfactory for LUSI, Sanlando (Wekiva Hunt Club), Mid-County, and Pennbrooke. OPC further stated that ROE should be reduced by 50-basis points for LUSI, Mid-County, and Pennbrooke and by 100-basis points for Sanlando (Wekiva Hunt Club). OPC also stated that the awarded ROE should be reduced by at least 50-100 basis points on a targeted underperforming system basis.

UIF witness Snow disagreed with witness Lewis' assertion that UIF does not respond to customers until we are involved. Witness Snow further stated that customers may choose to contact this Commission initially ahead of the Utility, and also indicated that OPC did not provide a specific example of where this occurred. Additionally, witness Snow addressed each of the three customers witness Lewis testified about regarding their quality of service concerns, and stated that these customers have either never filed a complaint with the Utility or else they have not done so within the past 14 years. Witness Snow further argued that the Utility is willing to work with customers individually to address any concerns. In response to witness Hicks' testimony about UIF's potential rule violations on responding to complaints promptly, witness Snow asserted these complaints were from 2015, 2017, and 2018, and none occurred during 2019 and 2020; therefore, this is not a current problem. In support of UIF's quality of service argument, witness Snow testified that UIF reorganized its Customer Experience department to better serve the customer, using the customer's preferred method of communication. Further, in response to OPC's argument regarding the compliance of the specific UIF systems identified

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previously that OPC contested, UIF discussed DEP’s compliance determination for LUSI, Mid-County, and Sanlando (Wekiva Hunt Club).

In Vol III of its MFRs, UIF provided the required additional engineering information pursuant to Rule 25-30.440, F.A.C. Currently, all the Utility’s water systems are in compliance with DEP’s rules and regulations and are under no formal enforcement action or violation. In evaluating UIF’s product quality (water), we reviewed the Utility’s compliance with DEP’s primary and secondary drinking water standards. Primary standards protect public health, while secondary standards regulate contaminants that may impact the taste, odor, and color of drinking water.

Below, is the quality of the Utility’s product, pursuant to Rule 25-30.433(1), F.A.C., as well as the infrastructure and operating conditions of the plant and facilities, as required by Rule 25-30.433(2), F.A.C. Our analysis consists of: 1) a discussion of the systems which we deemed satisfactory, were satisfactory in the last rate case, and not contested by OPC; and 2) a discussion of the systems which we find to be satisfactory or marginal now, but were either found to be marginal or unsatisfactory in the last rate case or are contested by OPC in the instant docket. Table 1 summarizes the quality of service determinations from UIF’s last rate case, the recommended determinations for the instant docket by UIF and OPC, as well as our approved determinations, by system.

Table 1
 Quality of Service Determination Summary

System	Last Rate Case Determination	UIF Recommendation	OPC Recommendation	Commission Approved
Lake Placid	Satisfactory	Satisfactory	*	Satisfactory
UIF-Marion	Satisfactory	Satisfactory	*	Satisfactory
UIF-Orange	Satisfactory	Satisfactory	*	Satisfactory
UIF-Pasco-Orangewood	Satisfactory	Satisfactory	*	Satisfactory
UIF-Pinellas-Lake Tarpon	Satisfactory	Satisfactory	*	Satisfactory
LUSI	Marginal	Satisfactory	Unsatisfactory	Satisfactory
Pennbrooke	Marginal	Satisfactory	Unsatisfactory	Unsatisfactory
Labrador	Marginal	Satisfactory	*	Satisfactory
UIF-Pasco-Summertree	Unsatisfactory	Satisfactory	*	Satisfactory
Cypress Lakes	Marginal	Satisfactory	*	Satisfactory
UIF-Seminole	Marginal	Satisfactory	*	Satisfactory
Sanlando WTP	Satisfactory	Satisfactory	*	Satisfactory
Sanlando WWTP	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory
Mid-County	Marginal	Satisfactory	Unsatisfactory	Unsatisfactory

* These systems were not identified in OPC witness Lewis’ testimony as having satisfactory, marginal, or unsatisfactory quality of service.

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a. Systems with Satisfactory Determination in Last Rate Case and Uncontested Satisfactory Quality of Service

The water and wastewater systems below are in compliance with DEP requirements, including secondary water quality standards; had minimal customer participation at the service hearings; received few, if any, quality of service complaints; and were found to have satisfactory quality of service in the last rate case.⁸ For water: Lake Placid, UIF-Marion, UIF-Orange, UIF-Pasco-Orangewood, and UIF-Pinellas-Lake Tarpon, and Sanlando. For wastewater: Sandalhaven, Cross Creek/Eagle Ridge, UIF- Marion, Lake Placid, Longwood, and Tierra Verde. As noted above, OPC did not identify any quality of service issues with these systems or address these systems specifically. As such, we find the quality of service for these systems to be satisfactory.

b. Systems with Unsatisfactory/Marginal Determination in Last Rate Case or Contested Satisfactory Quality of Service

As stated previously, in its brief, OPC argued the quality of service should be unsatisfactory for LUSI, Mid-County, Pennbrooke, and Sanlando (Wekiva Hunt Club). Also, OPC contends that a reduction of 50-basis points should be imposed for LUSI, Mid-County, and Pennbrooke, and a reduction of 100-basis points for Sanlando (Wekiva Hunt Club) to UIF's ROE, on a targeted underperforming system basis. In opposition to OPC, UIF argued all of its systems should be considered satisfactory. Below, we discuss the following systems in greater detail: LUSI, Pennbrooke, Labrador, UIF-Pasco-Summertree, Cypress Lakes, UIF-Seminole, Sanlando (WTP & WWTP), and Mid-County.

1. LUSI

We found the quality of service for the LUSI system to be marginal, with no penalty, in UIF's 2016 rate case.⁹ This determination was due to an open Consent Order, entered into on September 6, 2016, for DBP exceedances at the LUSI water treatment plant (WTP). To rectify the issues associated with this Consent Order, UIF indicated that it upgraded its LUSI WTP with a chlorine dioxide pretreatment capability in 2019, which has significantly lowered the production of DBPs within the system. The Utility corrected all violations and satisfied all requirements of the Consent Order, and the order was subsequently closed in August 2019. LUSI's most recent chemical analyses results were performed on March 17, 2020, February 8, 2018, and April 10, 2018, and the results were in compliance with DEP's standards. There are currently no open Consent Orders for this system. DEP recorded two complaints regarding water quality: one complaint regarding smell in January 2016 and one complaint of high DBP in February 2016, both of which are prior to the system's chlorine dioxide pretreatment upgrade to LUSI's WTP discussed previously. In its brief, UIF stated one customer testified at the service hearings from this system. As noted above, OPC believes the quality of service for this system should be unsatisfactory. However, we find that UIF has taken the necessary steps to address the

⁸ Order No. PSC-2017-0361-FOF-WS.

⁹ Order No. PSC-2017-0361-FOF-WS.

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past compliance issue of DBP exceedances for this system and there have been minimal complaints since UIF performed the upgrades to the WTP; therefore, we find this system's quality of service to be satisfactory.

2. Pennbrooke

We found the quality of service of the Pennbrooke system to be marginal, with a 50-basis point reduction to the Utility's ROE, in UIF's 2016 rate case.¹⁰ This determination was due to excess levels of iron and customer complaints regarding discolored water, sediment, low pressure, and high iron. Pennbrooke's most recent chemical analyses were performed on February 8, 2018, and indicated an excess iron level. While Pennbrooke's results showed an iron exceedance, DEP did not impose any corrective measures since there was not a significant amount of complaints associated with excess iron levels in the one year period leading up to the violation. DEP indicated that Pennbrooke is in compliance.

In February 2017, DEP received two complaints for the Pennbrooke system: one for color and one for the hardness of the water. At the service hearings, one customer testified to the quality of the product and complained of discoloration, odor, sediment within pipes, and loss of water pressure due to irrigation within the community. Witness Lewis relied on this customer's service hearing testimony in her direct testimony concerning poor water quality, specifically discolored water. UIF rebutted witness Lewis' arguments with respect to this specific customer by stating that this customer has not complained to the Utility in over 14 years. Additionally, UIF argued that it has investigated treatment alternatives for the iron levels concentrated in its groundwater, but the Pennbrooke homeowners' association (HOA) declined to support the treatment upgrade due to potential bill impacts. Further, the Pennbrooke HOA provided comments in the docket file on behalf of its customers which addressed the community's water quality concerns relating to iron and chlorine within the water product and water pressure.

The Utility evaluated its complaint records to determine if there were clusters of complaints regarding secondary water quality and found that Pennbrooke was one of two areas of concern. UIF stated that Pennbrooke had considerable levels of soluble iron in the source water and adds a sequestrant to the water to keep the iron in soluble form. Further, the Utility asserted that since the last rate case, it met with HOA representatives in Pennbrooke and coordinated an irrigation schedule to spread the peak demand across more days of the week to address the low-pressure complaints. The Utility also activated routine flushing of dead-end mains to reduce water age, due to seasonal residence within the system.

As noted above, OPC believes the quality of service for this system should be unsatisfactory. UIF has demonstrated its readiness to address customers' satisfaction by meeting with the HOA representatives and implementing water treatment options, such as the addition of a sequestrant and routine flushing. However, there is still an issue of excess iron levels in the water product, as demonstrated in its 2018 chemical analyses and the customer correspondence analyzed for the instant docket. Therefore, we find the quality of service for Pennbrooke to be unsatisfactory.

¹⁰ Order No. PSC-2017-0361-FOF-WS.

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3. Labrador

We found the quality of service of the Labrador system to be marginal, with no penalty, in UIF's 2016 rate case. This determination was largely due to water quality complaints and historical issues relating to Labrador's source water.¹¹ The most recent chemical analyses for Labrador were performed June 6, 2018, and were in compliance with DEP's drinking water standards. Additionally, there are minimal customer complaints contained within the record of the instant docket and there were no complaints filed with DEP for Labrador.

UIF asserted that since its last rate case, Labrador is maximizing the use of a different well that has enhanced water quality relative to the water source to improve Labrador's quality of service. Also, the Utility contended it has improved the reliability and performance of the emergency generator at the water treatment plant that has previously had equipment failures, as well as flushing parts of the water system monthly to address secondary water quality issues. OPC did not specifically address this system. Labrador is in compliance with DEP and UIF has made infrastructure and operating condition improvements, with the utilization of a different well, implementation of monthly flushing for parts of the water system, as well as improving its emergency generator; therefore, we find this system's quality of service to be satisfactory.

4. UIF-Pasco-Summertree

We found the quality of service of the UIF-Pasco-Summertree system to be unsatisfactory, with a 100-basis point reduction to the Utility's ROE, in UIF's 2016 rate case.¹² This determination was based upon UIF not maintaining secondary water quality standards and customer complaints. Since its interconnection with Pasco County Utilities in December 2016, UIF-Pasco-Summertree purchases bulk water from Pasco County. The Utility argued that Pasco's water chemistry levels fluctuate daily and as a result, a biofilm will accumulate on the pipe interiors. To monitor this issue, UIF tests daily for chlorine and ammonia at multiple locations. The Utility also performs semi-annual chlorine burns followed by uni-directional flushing to maintain water quality. Further, UIF implemented a chlorine dioxide pilot study within this system, with the objective of stabilizing the system's water quality and reducing the necessity of regular flushing. The Utility is requesting cost recovery of this chlorine dioxide pilot study, in PCF-38, which is discussed in greater detail below.

As a reseller of water, UIF-Pasco-Summertree is not subject to DEP's secondary water standards. However, due to the high volume of customer complaints in the previous rate proceeding, we required UIF to perform and report secondary water quality testing every six months for this system. The water samples were to be taken at the same six locations in the distribution system and testing was to continue until we found the water quality to be satisfactory.¹³ While previous test results indicated slight iron exceedances, the most recent chemical analyses for secondary water contaminants were performed on October 1, 2020, and

¹¹ Order No. PSC-2017-0361-FOF-WS.

¹² Order No. PSC-2017-0361-FOF-WS.

¹³ Order No. PSC-16-0505-PAA-WS, issued October 31, 2016, in Docket No. 150269-WS, *In re: Application for limited proceeding water rate increase in Marion, Pasco, and Seminole Counties by Utilities, Inc. of Florida.*

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was in compliance with DEP's standards. DEP stated UIF-Pasco-Summertree was in compliance, and the seven complaints concerning issues with water quality were received by DEP prior to the interconnection with Pasco County Utilities. OPC did not specifically address this system. Based on the aforementioned analyses of this system's compliance, complaints, and demonstrated efforts by UIF to address complaints, we find the quality of service for this system to be satisfactory. However, we find it appropriate that the additional testing and reporting requirements pursuant to Order PSC-16-0505-PAA-WS shall continue, but shall now be conducted on an annual basis, instead of on a semi-annual basis.

5. Cypress Lakes

We found the quality of service of the Cypress Lakes system to be marginal, with a 50-basis point reduction to the Utility's ROE, in UIF's 2016 rate case. This determination was due to the number of complaints involving secondary water quality issues and the lack of substantial improvement since previous rate cases in 2010 and 2007.¹⁴ UIF asserted it has increased its attempts to examine the chlorine levels and monitors the age of the water within the system and aesthetic water quality characteristics to improve the quality of service for this system since its last rate case. The Utility also adjusts (from the monitoring data) feed rates of the chlorine and ammonia at the WTP and conducts periodic burns of the system followed by uni-directional flushing. The most recent chemical analyses were performed on March 25, 2020, and were in compliance with DEP's drinking water standards. DEP indicated Cypress Lakes was in compliance and did not receive any complaints from the customers of this system. OPC did not specifically address this system. Cypress Lakes is in compliance with DEP and the Utility has demonstrated that it has made improvements since the prior rate cases and has reduced customer complaints substantially. Therefore, we find the quality of service for this system to be satisfactory.

6. UIF-Seminole

We found the quality of service of the UIF-Seminole system to be marginal, with no penalty, in UIF's 2016 rate case. This determination was due to ongoing secondary water quality standard issues and the system's need for capital intensive upgrades.¹⁵ The most recent chemical analyses for the seven systems within UIF-Seminole were performed for Bear Lake on February 19, 2018, Jansen on February 19, 2018, Little Wekiva on February 14, 2018, Oakland Shores on February 20, 2018, Park Ridge on March 7, 2018, Ravenna Park on March 7, 2018, and Weathersfield on March 26, 2020. While Jansen's results showed an iron exceedance, DEP did not impose any corrective measures since there was not a significant amount of complaints associated with excess iron levels in the one-year period leading up to the violation. Further, DEP indicated that Oakland Shores and Bear Lake incurred reporting violations for late bacteriological testing results, but these violations were closed once the results were received. DEP also indicated that Little Wekiva had a treatment technique violation, in which a residual fell under a required limit; however, this violation was closed as well. Additionally, Phillips had an iron violation in May 2018, but following this exceedance violation, Phillips merged with

¹⁴ *Id.*

¹⁵ Order No. PSC-2017-0361-FOF-WS.

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Ravenna Park in February 2019 and no additional action was taken by DEP. Since Phillips merged with Ravenna Park, DEP conducted a sanitary survey on February 13, 2020. The facility was found in compliance, and DEP did not report any iron exceedances. As these violations have been corrected and closed, DEP reported all seven systems of UIF-Seminole as in compliance with DEP's standards.

UIF asserted that since the previous rate case, the Utility has completed a comprehensive replacement of the water system infrastructure in Bear Lake, Little Wekiva, Oakland Shores, and the combined system of Ravenna Park/Crystal Lake/Phillips. UIF stated the Park Ridge system was redone in 2014 and this improved water pressure, water aesthetics, and reduced widespread water outages by having functional isolation valves in each system. The Utility asserted that the two smallest water plants, Park Ridge and Little Wekiva, installed emergency generators and automatic transfer switches, to minimize the rate of recurrence and length of time without water service.

DEP did not receive any complaints for the Jansen, Bear Lake, Park Ridge, Little Wekiva, Oakland Shores, and Weathersfield systems. DEP reported four secondary water quality complaints for the Ravenna Park system since 2015. OPC did not specifically address this system. All systems of UIF-Seminole are in compliance with DEP's standards and DEP has not initiated any enforcement action. Additionally, there have been minimal customer complaints and UIF has made capital improvements in an effort to improve the quality of service since its last rate case. Therefore, we find the quality of service for this system to be satisfactory.

7. Sanlando (Water)

We found the quality of service of the Sanlando water system to be satisfactory in UIF's 2016 rate case.¹⁶ The most recent chemical analyses for Sanlando, which consists of three WTPs, were completed on January 28, 2020, and February 19, 2020, and were all in compliance with DEP's standards. In December 2018, the Sanlando water system had reporting violations for late-filed bacteriological and DBP test results; however, these violations were closed when DEP received the test results in February 2019. DEP reported the Sanlando water system to be in compliance.

DEP received eight complaints for Sanlando's water system from 2015 through 2020, which varied in nature. At the service hearings, three customers from this system testified regarding poor water product and customer service. OPC did not specifically address Sanlando's water system. This system is in compliance with DEP and there have been minimal complaints from the customers of this system. Further, the nominal DEP violation against this system in 2018 was promptly corrected and late-filed test reports does not appear to be a repetitive issue. Therefore, we find the quality of service for the Sanlando water system to be satisfactory.

8. Sanlando (Wastewater)

¹⁶ Order No. PSC-2017-0361-FOF-WS.

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We found the quality of service to be satisfactory for the Sanlando (Wekiva Hunt Club) wastewater system in UIF's 2016 rate case.¹⁷ At that time, we considered DEP's 2015 Consent Order for unauthorized discharge and its subsequent closure.¹⁸ A Consent Order was issued in 2018, due to overflows following Hurricane Irma and an effluent violation. The Utility indicated the 2018 Consent Order was mainly attributable to hydraulic bottlenecks within the treatment process and excess infiltration and inflow (I&I) as a consequence of Hurricane Irma. The Utility stated that it had satisfied the requirements of the 2018 Consent Order and it was being processed by DEP for case closure in December 2020. Further, the Utility asserted that it would continue to investigate sources of I&I within this system, which contains numerous miles of clay sewer mains. Additionally, UIF is requesting cost recovery for numerous improvements to the wastewater treatment plant (WWTP). This pro forma project, PCF-22, is discussed in greater detail below.

In October 2019, DEP found this system in violation for an unauthorized discharge and UIF was issued a Consent Order in 2020. UIF stated that the 2020 Consent Order was due to equipment failure, causing an unauthorized discharge. UIF is requesting cost recovery to construct larger, more capable headworks that will not cause overflows. This project, PCF-23, is discussed in greater detail below. The Utility asserted for its DEP-approved in-kind project, UIF will install water level transducers and solar arrays at six key lift stations. Due to the 2018 and 2020 Consent Orders, the Sanlando WWTP is out of compliance with DEP. While the 2018 and 2020 Consent Orders were due to unauthorized discharges, the causes which led to the discharges differ. The Utility has demonstrated a responsiveness to DEP based on the Utility's testimony stating that the 2018 Consent Order was in the closure process in December 2020 and the Utility has requested cost recovery for their DEP-approved in-kind project relating to the 2020 Consent Order. Additionally, the Utility asserted that it is taking the necessary steps to comply with the Consent Order, and therefore, we should follow our precedent and not impose a penalty for this system.

During the service hearings, there was testimony regarding an additional sewage spill at the Sanlando WWTP towards the end of December 2020. This sewage spill was due to a loss of power at a lift station which decreased pumping capacity for a short duration of time. UIF responded to the sewage spill and resolved the issue. The spill was contained within the retention pond around the lift station. The cause for this sewage spill was due to a loss of power at a lift station, which was not the cause for either of the prior unauthorized discharges addressed in the 2018 and 2020 Consent Orders.

Further, UIF has made \$6,000,000 in plant improvements and more than \$2,000,000 in collection system improvements to reduce I&I. With these improvements, and the two pro forma projects (PCF-22 and PCF-23) discussed below, we find that UIF is taking action to address the quality of service issues associated with the Sanlando wastewater system and has demonstrated its responsiveness to DEP. However, while the cause of each overflow event has differed, the unauthorized discharges still occurred and resulted in the issuance of two DEP Consent Orders.

¹⁷ *Id.*

¹⁸ *Id.*

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We therefore find the quality of service for Sanlando (Wekiva Hunt Club) wastewater system to be unsatisfactory.

9. Mid-County

We found the quality of service of the Mid-Country system to be marginal, with a 50-basis point reduction to the Utility's ROE, in UIF's 2016 rate case.¹⁹ This was due to the sewage spills that occurred between January 2015 and September 2016 along with odor complaints received by DEP. In 2018, Mid-County was under a Consent Order with DEP regarding effluent violations. DEP considered Mid-County to be out-of-compliance because UIF did not submit its final paperwork. DEP closed that Consent Order on July 30, 2019. Mid-County had a 2019 violation that resulted in a Consent Order regarding sanitary sewer overflows and failure to submit public notices of pollution for these overflows. UIF stated that the 2019 Consent Order was closed on December 21, 2020, after the Utility concluded an engineering study of the WWTP to ascertain the cause of the spill and reduce the risk of future spills. The Utility installed emergency generators and automatic transfer switches at two key lift stations as an in-kind project with DEP, in December 2020. UIF is requesting cost recovery of numerous pro forma projects that were identified in the engineering study that could improve the WWTP. These projects, PCF-14, PCF-15, and PCF-17, are discussed in greater detail below in Section III. Further, there has been very minimal customer participation from this system.

OPC argued that the quality of service for Mid-County should be unsatisfactory and an ROE reduction of 50-basis points should be imposed due to the two Consent Orders, which occurred between 2015 and 2020. UIF recognizes that the Mid-County system was out of compliance because UIF did not submit its final paperwork relating to the Consent Order, but the Consent Order was closed as of December 21, 2020. Mid-County previously had overflow issues in 2015, which we have already considered in UIF's quality of service determination of marginal in its prior rate case. Due to subsequent overflow issues in 2019, which resulted in the issuance of a DEP Consent Order, we find the quality of service for Mid-County to be unsatisfactory.

C. Conclusion

Based on the above, as shown in Table 1, we hereby find that the quality of service for all UIF systems to be satisfactory with the exclusion of the Pennbrooke water, Sanlando (Wekiva Hunt Club) wastewater, and Mid-County wastewater systems, which shall be deemed unsatisfactory. All existing ROE penalties associated with prior quality of service determinations shall be removed, and a reduction of 15 basis points to the Utility's overall ROE shall be implemented due to the unsatisfactory quality of service of the three aforementioned systems. Further, the secondary water quality reporting and testing requirements, pursuant to Order No. PSC-16-0505-PAA-WS for Summertree shall now be conducted on an annual basis, instead of a semi-annual basis.

¹⁹ Order No. PSC-2017-0361-FOF-WS.

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II. Test Year Plant-In Service Adjustments

A. Parties' Arguments

1. UIF

The Utility asserted that the only adjustments to test year plant balances were to allocate common plant between water and wastewater systems.

2. OPC

In its brief, OPC discussed reductions related to pro forma plant projects. These projects are discussed in Section III.

B. Analysis

UIF witness Swain made test year adjustments to the plant-in-service balance to correct allocations of common plant between water and wastewater and to reclassify plant accounts for the wastewater system. Although it addressed pro forma adjustments, OPC did not dispute the Utility's adjustments. Further, Commission staff witness Dobiac's testimony did not reflect any audit adjustments to the test year plant-in-service balances. As such, we find that these test year adjustments are appropriate and no further adjustments are necessary to the adjusted test year plant-in-service balances.

Based on the above, we hereby find no further adjustments to the adjusted test year plant-in-service balances. Adjustments to pro forma plant additions shall be made as set forth and discussed below.

III. Pro Forma Plant

A. Parties' Arguments

1. UIF

UIF argued that of the 45 pro forma project additions that had been identified by UIF witness Flynn, all had been supported by invoices or signed contracts and would be completed by December 31, 2021. Despite the change in completion date from witness Flynn's direct testimony for 15 of the projects, all of the pro forma projects would be completed within the 24-month statutory deadline. The costs for the 45 pro forma projects requested totaled \$30,042,556. The Utility stated that OPC had indicated there were issues with the documentation provided; however, UIF witness Flynn had asserted that documentation may vary from project to project, and a lack of documentation does not affect a project's completion. For example, witness Flynn

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pointed to a specific project where a Notice to Proceed was not issued, but the project had been completed.

UIF argued that OPC's witness Radigan had not questioned the reasonableness or prudence of any of the projects, and the witness had been given the opportunity to visit the Utility's systems and evaluate the projects. UIF asserted that OPC had originally recommended exclusion of 11 projects for a lack of sufficient support, and six projects which it affirmed were not plant-in-service and should be construction work in progress (CWIP). However, OPC's witness later agreed that two of the projects, PCF-13 and PCF-29, had been fully supported, and another one, PCF-16, was partially supported. The Utility also argued that the study projects it had requested in this proceeding were similar to projects we approved in UIF's last rate case, which OPC did not object to at the time. Additionally, for the projects OPC characterized as CWIP, the Utility argued that the projects were not CWIP but should be in plant-in-service. Alternatively, if the projects were not included in plant-in-service, they should instead be placed in working capital.

UIF specifically addressed the projects that were contested by OPC. For PCF-6, the Utility argued that the project's development of a master sewer plan would be applied to the operation of the Labrador WWTP and would provide guidance for capital investment decisions. This master sewer plan would support construction projects that would follow in 2021. For PCF-21, UIF argued that it aimed to video inspect 10 percent of its Sandalhaven collection system, which consisted of clay pipes that are more prone to failure, each year on average. As an alternative, the Utility proposed that PCF-21 could be deferred and amortized over a reasonable timeframe, such as five years, rather than being included in rate base.

For PCF-26, UIF asserted that the engineering services for the project were a prerequisite to the replacement of three Sanlando force mains, which was an immediate need. The Utility stated it must move forward with the construction of the force main replacements in 2021. For PCF-30, UIF argued that the Utility was utilizing the engineering work from the project to support capital investment decisions; therefore, the project was in use and should be included in rate base. For PCF-39, the Utility argued that the scope of the Summertree I&I investigation project had been expanded to address the identified deficiencies and the investment should be fully recovered. Like PCF-39, UIF asserted that the scope of PCF-45 had also been expanded to include the construction costs for the Weathersfield Northwestern Bridge Crossing project and the investment should be fully recovered.

For PCF-14, the Utility argued that construction was underway for the Mid-County Master Lift Station project, which was scheduled to be completed by the end of June 2021. To date, approximately 15 percent of the work for PCF-14 had been completed and \$282,018 had been spent of the \$2,103,578 total projected cost. For PCF-16, UIF argued that the Mid-County Curlew Creek I&I Remediation project was on schedule and would be completed by January 31, 2021. Of the total \$719,049 project cost for PCF-16, \$234,906 has been spent to date. For PCF-17, the Utility stated that OPC witness Radigan was incorrect in believing that the Mid-County lift station project, PCF-14, would have to be completed prior to beginning PCF-17. The PCF-17 project was scheduled to be completed by November 2021, and the expenditures to date were limited to engineering services totaling \$169,994 with a total projected budget of \$2,424,782.

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For PCF-18, UIF argued that the Mid-County Lift Station 10 Force Main Relocation project was scheduled to be completed by the end of December 2021, and the expenditures to date related to engineering service totaling \$31,640 with a total projected cost of \$57,451. For PCF-20, the Utility asserted that no expenditures had yet been made, but the project was on schedule to be completed in March 2021. For PCF-23, UIF argued that the Wekiva WWTP Headworks project would take nine months to complete and was scheduled to be completed in November 2021. The contractor had been mobilized on-site and was currently completing the Wekiva WWTP improvements, PCF-22, project. For PCF-28, the Utility argued that the plans for the E. E. Williamson Utility Relocations project had been drawn up, permits had been obtained, bids had been opened, and the project had been awarded to the lowest bidder. PCF-28 was scheduled to be completed by December 2021. For PCF-31, UIF argued that after a delay, the Sanlando Ground Storage Tank Rehabilitations project was on schedule. For PCF-33, the Utility stated that the Tierra Verde Force Main and Gravity Sewer Main Relocations project was nearly completed with only \$5,500 of the work remaining of the total project cost of \$593,368.

2. OPC

OPC argued that witness Radigan, testifying on behalf of OPC, had identified several projects for which sufficient documentation had not been provided by UIF to support a completion date and that the projects may not be completed within the 24-month limitation per Section 367.081(2)(a)2., F.S. Several other projects had been identified by witness Radigan as studies and were not connected to an active construction project. OPC argued that we had previously disallowed projects where insufficient documentation had been provided in support of a project.²⁰

OPC argued that the burden of proof with respect to the pro forma projects was on UIF. Relating to insufficient supporting documentation, witness Radigan identified eight pro forma projects that he recommended should be disallowed, and partial recovery for one pro forma project which the Utility had not demonstrated would be completed within the 24 months. The costs for these nine projects totaled \$9,401,299. OPC stated the UIF witness Flynn had testified there were four important documents for construction projects, which were a bid, an award form, a contract, and a Notice to Proceed. The Notice to Proceed must be issued and signed by both the Utility and contractor before construction work could begin. Witness Radigan reviewed the documentation offered and for projects with incomplete documentation, the witness recommended excluding the project. Witness Radigan also testified that one project in particular, PCF-17, could not begin until another project, PCF-14, had been completed. Due to a delay in the completion date for PCF-14, and the project timeframe for PCF-17, OPC stated “it will be impossible for PCF-17 to be completed by the 24-month deadline of December 31, 2021.”

OPC argued that it was unclear what criteria UIF had utilized for determining when an award form was necessary for a project. For some projects an award form was issued, such as PCF-42 and PCF-43, which both had a project cost below \$100,000 and construction times of 168 calendar days. While for other projects, such as PCF-20 with a project cost of \$128,000 and

²⁰ Order No. PSC-2017-0361-FOF-WS.

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a construction time of 10 months, witness Flynn indicated it was unnecessary to issue an award form for the project. Also for PCF-16, which had a cost of \$634,302 and would be carried out over several years, witness Flynn claimed an award form was not needed for the project. Further, related to PCF-16, OPC stated that witness Flynn had testified that a Notice to Proceed was not issued for each contractor, but instead suggested that a Notice to Proceed was only required for the contractor whose work constituted the largest financial cost. However, OPC argued that the Utility had been inconsistent in regards to the documentation, such as Notice to Proceed forms, it had supplied to support the projects. For example, a Notice to Proceed was provided for both PCF-42 and PCF-43, which had lower costs and shorter construction times than PCF-6, PCF-20, and PCF-33; however, a Notice to Proceed was not provided for either PCF-6, PCF-20, or PCF-33.

OPC stated that on cross examination, witness Flynn had “admitted that at least 15 of the 45 pro forma projects requested fell behind on their construction schedules” since the filing of his direct testimony. While several projects had been delayed, other projects such as PCF-31 had been paused and the Utility had not supplied support for a planned completion date. OPC argued that witness Flynn had admitted that there was no overarching reason for the project delays, but the delays could be the result of third-party action. OPC stated that Section 367.081(2)(a)2., F.S., outlines that a project must be placed into use within 24 months after the test year and it does not contemplate why a project was or was not completed in that timeframe. Therefore, based on a lack of sufficient documentation, OPC recommended that we should completely disallow PCF-14, PCF-17, PCF-18, PCF-20, PCF-23, PCF-28, PCF-31, and PCF-33, and we should disallow the portion of PCF-16 for which documentation was not provided.

For an additional six projects, OPC argued that a total cost of \$432,673 should be disallowed because the projects did not have actual plant additions associated with them. Pursuant to the National Association of Regulatory Utility Commissioners (NARUC) Uniform System of Accounts (USOA) and Rule 25-30.116, F.A.C., studies and reports that are not attributed to an active construction project to be completed within the statutory timeframe cannot be considered plant-in-service or construction-work-in-progress. OPC identified PCF-6, PCF-21, and PCF-26 as studies and reports that would be used to develop future construction plans, but did not have any plant additions associated with them at this time. Additionally, OPC argued that witness Flynn had testified that several of these projects would require a separate capital project to address the findings.

OPC cited to Order No. PSC-2017-0361-FOF-WS, stating that although projects that were designated as investigations or studies were included in rate base, the decision to include these studies was contrary to the USOA and Rule 25-30.116, F.A.C. OPC cited to Section 120.68(7)(e), F.S., indicating that there is grounds for appeal when we deviate from official policy or agency rule. OPC stated that “a previous error on the part of the Commission does not become precedent for continuing to perpetuate the erroneous ruling if it is contrary to the controlling statute or in this case, rule.” For these reasons, OPC recommended that we disallow PCF-6, PCF-21, PCF-26, PCF-30, PCF-39 and PCF-45 because the projects had no construction associated with a plant addition.

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OPC argued that UIF should not be allowed to seek cost recovery for in-kind penalty projects, which are projects a utility may choose to implement as part of a DEP Consent Order and may involve capital improvements. OPC stated that per the Consent Order for PCF-22, an in-kind penalty project cost must be at least one and a half times the amount the utility would have been fined. OPC argued that UIF should not be allowed to recover these in-kind project costs from customers when it had elected to complete the project and the project costs were more than the fine. Additionally, OPC cited to Order No. PSC-2018-0014-FOF-EI,²¹ stating “the Commission held that when a Consent Order required payment of an amount that was not a fine but was essentially a donation to avoid a fine, the utility could not recover that amount from customers.” In UIF’s case, the Consent Order allows the Utility to choose a project rather than paying a fine. Therefore, OPC recommended that we disallow the amount of DEP fines associated with PCF-15, PCF-17, PCF-22 and PCF-23, and embedded in capital costs totaling \$56,147.

B. Analysis

Section 367.081(2)(a)2., F.S., provides that we, in fixing rates, shall consider facilities to be constructed within a reasonable time in the future, not to exceed 24 months after the end of the historic base year used to set final rates, unless a longer period is approved by us, to be used and useful (U&U) if such property is needed to serve current customers. In this proceeding, UIF requested cost recovery for 45 pro forma projects. Each project is discussed in detail below and the approved adjustments are summarized in Table 2.

²¹ Order No. PSC-2018-0014-FOF-EI, issued January 5, 2018, in Docket No. 20180007-EI, *In re: Environmental cost recovery clause*.

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Table 2
 Commission Approved Pro Forma Plant Additions

PCF	Description	MFR	Commission	Adjustment
1	Cypress Lakes Inflow and Infiltration (I&I) Investigation	\$45,000	\$42,500	(\$2,500)
2	Eagle Ridge Lift Station 3 and 8 Rehabilitation	\$84,411	\$84,411	\$0
3	Eagle Ridge Supervisory Control and Data Acquisition (SCADA) Remote Telemetry Unit (RTU) Installation	\$247,761	\$212,335	(\$35,426)
4	Eagle Ridge Engineering Site Improvements	\$130,264	\$48,713	(\$81,551)
5	Eagle Ridge Site Improvements	\$707,506	\$572,181	(\$135,325)
6	Labrador WWTP Master Plan	\$40,636	\$0	(\$40,630)
7	Longwood SCADA RTU Installation	\$125,647	\$122,160	(\$3,487)
8	LUSI Engineering of Crescent Bay Raw Water Main (WM)	\$70,000	\$71,500	\$1,500
9	LUSI Crescent Bay Raw WM	\$506,869	\$488,700	(\$18,169)
10	LUSI Lake Groves Sulfuric Acid Storage Tank Replacement	\$56,241	\$55,089	(\$1,152)
11	LUSI Hydrochloric Acid Storage Tank Relocation	\$33,165	\$29,992	(\$3,173)
12	LUSI Lake Groves Return Activated Sludge (RAS) Pump Replacement	\$45,660	\$42,558	(\$3,102)
13	LUSI Barrington WWTP Improvements	\$396,710	\$378,559	(\$18,151)
14	Mid-County Master Lift Station	\$1,878,199	\$2,140,924	\$262,725
15	Mid-County Generators at Lift Stations 4 and 7	\$153,163	\$120,952	(\$32,211)
16	Mid-County Curlew Creek I&I Remediation	\$664,201	\$624,220	(\$39,981)
17	Mid-County Headworks	\$3,186,839	\$2,478,657	(\$708,182)
18	Mid-County Lift Station 10 Force Main (FM) Relocation	\$58,139	\$56,170	(\$1,969)
19	Pennbrooke Diffuser Replacement	\$34,000	\$29,280	(\$4,720)
20	Sandalhaven SCADA Installation	\$135,490	\$129,299	(\$6,191)
21	Sandalhaven I&I Investigation	\$61,847	\$58,255	(\$3,592)
22	Wekiva WWTP Improvements	\$6,859,793	\$6,548,308	(\$311,485)
23	Wekiva WWTP Headworks	\$3,100,024	\$2,784,953	(\$315,071)
24	Sanlando Well Panel Replacements	\$76,796	\$76,812	\$16
25	Sanlando FM and WM Replacement	\$3,926,417	\$3,718,965	(\$207,452)
26	Sanlando Engineering F5/C1/L2 FM Replacements	\$202,637	\$185,907	(\$16,730)
27	Sanlando I&I Corrections, Phase 4	\$2,062,398	\$2,161,675	\$99,277
28	Sanlando E.E. Williamson Utility Relocations	\$462,856	\$450,686	(\$12,170)
29	Sanlando Lift Station Mechanical Rehabilitation	\$560,469	\$529,015	(\$31,455)
30	Sanlando FM Modeling and Development of Critical Infrastructure Plan (CIP)	\$93,492	\$103,746	\$10,254
31	Sanlando Ground Storage Tank (GST) Remediation	\$188,923	\$184,578	(\$4,345)
32	Tierra Verde I&I Remediation	\$172,192	\$116,074	(\$56,118)
33	Tierra Verde FM and GSM Replacement	\$609,491	\$533,786	(\$75,705)
34	Tierra Verde Lift Station 4 Replacement	\$854,450	\$936,917	\$82,467
35	Buena Vista Well Improvements	\$98,145	\$97,662	(\$483)
36	Orangewood Well 1 Improvements	\$170,453	\$167,775	(\$2,678)
37	Seminole County SCADA Installation	\$96,664	\$93,976	(\$2,688)
38	Summertree Chlorine Dioxide Pilot Study	\$52,000	\$91,301	\$39,301
39	Summertree I&I Investigation	\$27,481	\$28,620	\$1,139
40	Golden Hills Galvanized Pipe Replacement	\$77,743	\$79,553	(\$1,810)
41	Golden Hills Water Main Relocation	\$170,810	\$169,682	(\$1,128)
42	Little Wekiva Generator	\$100,256	\$97,053	(\$3,203)
43	Park Ridge Generator	\$104,292	\$88,706	(\$15,586)
44	Ravenna Park I&I Remediation	\$678,829	\$821,360	\$142,531
45	Weathersfield Northwestern Bridge Crossing	\$22,000	\$140,246	\$118,246
Total		\$29,430,359	\$27,993,811	(\$1,440,163)

Source: EXH 48; EXH 148, BSP 111

Note: We approve amortizing \$41,000 for PCF-6 and \$76,391 for PCF-32 in O&M expense.

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1. PCF-1 UIF – Cypress Lakes I&I Investigation

UIF requested cost recovery to jet clean and video inspect approximately 18,000 linear feet of 8 inch PVC gravity sewer mains (GSM) and manholes. This was done in zones 1 and 2 of the Cypress Lakes collection system to locate and evaluate pipe deficiencies and to remove accumulated solids deposited in manhole and pipe inverts. A report will be provided to identify any deficiencies in the piping that will require repairs. The Utility stated the investigation was necessary due to increased inflow during extended rain, which indicates the likelihood of excessive I&I.

In UIF witness Flynn’s direct testimony, the requested amount for this project was \$50,000. In witness Flynn’s rebuttal testimony, he provided an updated project cost of \$42,500. No interest during construction (IDC) or capitalized labor expense²² (cap time) was incurred for this project. OPC witness Radigan did not address the Cypress Lakes I&I Investigation project or the costs in his testimony.

UIF provided one bid for the project totaling \$42,500. In response to discovery, UIF specified that a \$75,000 threshold for project costs was its parent company’s policy for determining whether multiple bids should be obtained for a project. UIF stated that this policy “has been in place for over ten years and has been an accepted practice in many previous rate case dockets initiated by UIF and its affiliated companies in Florida.” Since the I&I investigation cost was less than this threshold, only one bid was solicited.

In response to discovery, UIF provided an invoice for the project in the amount of \$42,500. Witness Flynn testified that the Cypress Lakes I&I Investigation project was completed in August 2020. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that \$42,500 is reasonable for the project. UIF recorded a cost of \$45,000 for PCF-1 in its MFRs as working capital; therefore, we find that an adjustment shall be made to decrease the cost of PCF-1 by \$2,500. However, as there were no plant addition costs associated with the project, we find that the project costs shall be recorded in working capital. The appropriate working capital allowance will be discussed further below in Section XVI.

2. PCF-2 UIF – Eagle Ridge Lift Station 3 and 8 Rehabilitation

UIF requested cost recovery to replace pipes, valves, and fittings at lift stations 3 and 8 due to corrosion after many years of service. In addition, as there is no drain valve, rainwater fills the vault making the valves less accessible. By relocating the check and isolation valves from the vault to an above ground piping arrangement, the valves will be readily accessible without having to attempt to core drill the valve vault and wet well in a very limited space. This project also included coating the wet well walls to protect the concrete from further degradation.

In UIF witness Flynn’s direct testimony, the requested amount for this project was \$81,890. In witness Flynn’s rebuttal testimony, he provided an updated project cost of \$80,139, which included IDC and cap time. OPC witness Radigan did not address the Eagle Ridge Lift

²² The treatment of capitalized labor expense is discussed in Section XXVI.

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Station 3 and 8 Rehabilitation project or the costs in his testimony. UIF provided three bids for the rehabilitation project and the lowest bid of \$77,890 was selected.

In response to discovery, UIF provided invoices for the rehabilitation project totaling \$77,890, and an invoice for disposal fees totaling \$4,301. Witness Flynn testified that the Eagle Ridge Lift Station 3 and 8 Rehabilitation project was completed in September 2020, and had a cap time cost of \$2,220. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$84,411 (\$77,890 + \$4,301 + \$2,220) is reasonable for the project. UIF recorded a cost of \$84,411 for PCF-2 in its MFRs; therefore, we find that no adjustment is necessary for PCF-2.

3. PCF-3 UIF – Eagle Ridge SCADA RTU Installation

Similar to projects PCF-7, PCF-20, and PCF-37, UIF requested cost recovery to install RTUs and associated hardware and software at 13 lift stations and at the Eagle Ridge and Cross Creek WWTPs. UIF stated the project will interface with its existing SCADA network and information technology infrastructure to offer real time operational data during both normal and inclement weather conditions and thereby reduce the risk of sanitary sewer overflows and property damage caused by wastewater backups. The project was initiated at the urging of DEP after Hurricane Irma in 2017.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$229,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$229,159, which included IDC and cap time. OPC witness Radigan did not address the Eagle Ridge SCADA RTU Installation project or the costs in his testimony.

UIF provided one bid from the primary contractor, Sanders Co., totaling \$162,619 and one bid from each of the two supporting contractors, totaling \$48,920 and \$18,055, respectively. UIF only obtained one primary contractor bid for this project, as the contractor being utilized for PCF-7, PCF-20, and PCF-37 was also selected for PCF-3. UIF stated the primary contractor was sole sourced due to their exceptional expertise and professionalism from their earlier work, and their excellent technical support, which is a critical criterion in selecting a contractor to install SCADA systems. Only one bid was solicited for the work performed by each of the supporting contractors, as both were below UIF's \$75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases.

In response to discovery, UIF provided invoices for the SCADA installation totaling \$210,534. Witness Flynn testified that the Eagle Ridge SCADA Installation project was completed in August 2020, and had a cap time cost of \$1,801. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that \$212,335 (\$210,534 + \$1,801) is reasonable for the project. UIF recorded a cost of \$247,761 for PCF-3 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-3 by \$35,426.

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4. PCF-4 UIF – Eagle Ridge Engineering Site Improvements

UIF requested cost recovery for engineering services in support of the replacement of the perimeter fence and gates, removal of invasive species, and installation of native landscaping materials in conformance with Lee County’s land use ordinances. Services include providing construction engineering and inspection, and coordination with Lee County staff. This project is for engineering services only, in relation to the construction work performed under project PCF-5.

In UIF witness Flynn’s direct testimony, the requested amount for this project was \$130,000. In UIF witness Flynn’s rebuttal testimony, he provided an updated project cost of \$163,483, which included IDC and cap time. Witness Flynn stated the project budget was increased due to the additional services required to obtain a variance to the county’s development code, site plan approval, permitting, construction oversight, and coordination services. OPC witness Radigan did not address the Eagle Ridge Engineering Site Improvements project or the costs in his testimony.

UIF provided one bid for the site improvements totaling \$81,000 and one subcontracted bid for a boundary survey totaling \$9,555. Witness Flynn stated Kimley-Horn & Associates (Kimley-Horn) was selected to provide engineering services in support of the Eagle Ridge Site Improvements required by Lee County, and Echo UES, Inc., provided site survey services as a subcontractor of Kimley-Horn, since Kimley-Horn does not have its own in-house survey crew. Kimley-Horn was the preferred engineering consultant selected to work on the Eagle Ridge Site Improvements Project due to its familiarity with the facilities as well as the breadth and depth of the resources that were required for this project.

In response to discovery, UIF provided invoices from Kimley-Horn totaling \$46,044. However, invoices were not provided for the permitting assistance or boundary survey. Witness Flynn provided a cap time cost of \$2,669 for PCF-4 and testified that the project was completed in August 2020. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that \$48,713 (\$46,044 + \$2,669) is reasonable for the project. UIF recorded a cost of \$130,264 for PCF-4 in its MFRs; therefore, we hereby find that an adjustment shall be made to decrease the cost of PCF-4 by \$81,551 and the amount shall be capitalized under project PCF-5.

5. PCF-5 UIF – Eagle Ridge Site Improvements

UIF requested cost recovery to obtain a setback variance for the previously constructed equalization tank. This includes removal of all invasive trees and shrubs from the plant site, installation of a 9-foot high decorative fence on three sides and an 8-foot high chain link fence on the west side of the perimeter to replace the 1984 fence material, replace two access gates on the north and west sides, add landscaping buffer on all four sides, and add a drip irrigation system. UIF stated that the project is designed to meet Lee County’s land development ordinance specifications.

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In UIF witness Flynn's direct testimony, the requested amount for this project was \$657,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$703,798, which included IDC and cap time. OPC witness Radigan did not address the Eagle Ridge Site Improvements project or the costs in his testimony.

UIF provided two bids for the fencing removal and installation, three bids for tree clearing, and one bid for the decorative fence. The Utility selected the lowest bids for the fencing removal and installation, totaling \$72,808, and tree clearing, totaling \$194,000. Witness Flynn stated that four bids were solicited for the decorative fence, but only one bid was received from the sole vendor who offered a product that met the fencing criteria, for a total of \$233,752.

In response to discovery, UIF provided invoices for the Eagle Ridge Site Improvements project totaling \$561,095. Witness Flynn provided a cap time cost of \$11,086 for PCF-5 and testified that the project was completed in July 2020. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that \$572,181 (\$561,095 + \$11,086) is reasonable for the project. UIF recorded a cost of \$707,506 for PCF-5 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-5 by \$135,325.

6. PCF-6 UIF – Labrador WWTP Master Plan

UIF requested cost recovery to develop a preliminary design report for the removal and replacement of the three treatment trains, digesters, filter clear wells, chlorine contact tanks, and process blowers that are nearing the end of their service life. This project is for engineering services only.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$41,000. In witness Flynn's rebuttal testimony, he provided an updated project cost of \$44,736. However, the Utility did not provide supporting documentation for this project increase. No IDC or cap time was included for this project. OPC witness Radigan testified that there were no plant addition costs associated with the Labrador WWTP Master Plan project. Instead this project was CWIP and should not be considered plant-in-service. Furthermore, witness Radigan stated that once the project was complete, the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time. Witness Flynn testified that the project will identify the capital improvements necessary to comply with the WWTP operating permit.

UIF only obtained one bid for this project at a cost of \$41,000, as it was below UIF's \$75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. As an exhibit to his rebuttal testimony, witness Flynn provided a signed agreement for the project totaling \$41,000.

Witness Flynn testified that the report is scheduled to be completed by the end of January 2021. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$41,000 is reasonable for the project. However, regarding the concerns raised by witness Radigan, we agree that there were no plant addition costs associated with PCF-6. As the costs for this project are to maintain compliance with the WWTP operating permit, which expires March

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22, 2025, we find that \$41,000 be amortized over four years and included in operation and maintenance (O&M) expense. UIF recorded a cost of \$40,636 for PCF-6 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-6 by \$40,636.

7. PCF-7 UIF – Longwood SCADA RTU Installation

Similar to projects PCF-3, PCF-20, and PCF-37, UIF requested cost recovery to install remote telemetry units at 13 lift stations in the Longwood collection system. The 13 lift stations were being monitored with the use of alarm systems; however, UIF began implementing SCADA in other systems in 2016. With the use of SCADA, lift stations can be monitored remotely by operators, which can reduce the lag time between an alarm event and notification. It also provides technicians with the ability to pull reports for lift stations to prioritize work activities and the SCADA system can be used for tracking purposes, such as logging pump replacements or electrical issues.

In UIF witness Flynn’s direct testimony, the requested amount for this project was \$122,024. In witness Flynn’s rebuttal testimony, he provided an updated project cost of \$125,647, which included IDC and cap time. OPC witness Radigan did not address the Longwood SCADA RTU Installation project or the costs in his testimony. UIF only obtained one bid for this project, as the contractor being utilized for PCF-3, PCF-20, and PCF-37 was also selected for PCF-7. UIF stated that the selected contractor “offered consistent pricing for similar work as well as the ability to maintain safety and security protocols that are critically necessary when installing or modifying any cloud-based technology.”

In response to discovery, UIF provided invoices for the SCADA installation totaling \$122,024. Witness Flynn testified that the Longwood SCADA RTU Installation project was completed in January 2020, and had a cap time cost of \$136. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$122,160 (\$122,024 + \$136) is reasonable for the project. UIF recorded a cost of \$125,647 for PCF-7 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-7 by \$3,487.

8. PCF-8 UIF – LUSI Engineering of Crescent Bay Raw WM

UIF requested cost recovery for the design, permitting, and construction of a raw WM connecting the existing Crescent Bay well with an underutilized WTP to meet peak water demand driven by growth. This project is for engineering services only, in relation to the construction work to be performed under project PCF-9.

In UIF witness Flynn’s direct testimony, the requested amount for this project was \$70,000. In witness Flynn’s rebuttal testimony, he provided an updated project cost of \$75,242, which included IDC and cap time. OPC witness Radigan did not address the LUSI Engineering of Crescent Bay Raw WM project or the costs in his testimony.

UIF provided one bid for the project totaling \$70,000. UIF only solicited the service of Kimley-Horn for this project because “engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and

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procedures regarding specific water and wastewater systems.” As an exhibit to his rebuttal testimony, witness Flynn provided a signed authorization letter for the engineering service of Kimley-Horn totaling \$70,000.

Witness Flynn projected a cap time cost of \$1,500 for PCF-8 and testified that the project will be completed in May 2021. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$71,500 (\$70,000 + \$1,500) is reasonable for the project. UIF recorded a cost of \$70,000 for PCF-8 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-8 by \$1,500 and the amount shall be capitalized under project PCF-9.

9. PCF-9 UIF – LUSI Crescent Bay Raw WM

UIF requested cost recovery for construction of a raw WM connecting the existing Crescent Bay well with an underutilized WTP to meet peak water demand driven by growth. The project scope includes drilling 1,000 linear feet under a body of water and an additional 4,000 linear feet to connect to an existing raw WM. As stated above, the engineering services for this project are being performed under project PCF-8.

In UIF witness Flynn’s direct testimony, the requested amount for this project was \$486,514. In witness Flynn’s rebuttal testimony, he provided an updated project cost of \$503,031, which included IDC and cap time. OPC witness Radigan did not address the LUSI Crescent Bay Raw WM project or the costs in his testimony.

UIF provided three bids for the project and the lowest bid of \$481,514 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided a signed agreement for the project totaling \$481,514.

Witness Flynn projected a cap time cost of \$7,186 for PCF-9 and testified that the project will be completed in May 2021. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$488,700 (\$481,514 + \$7,186) is reasonable for the project. UIF recorded a cost of \$506,869 for PCF-9 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-9 by \$18,169.

10. PCF-10 UIF – LUSI Lake Groves Sulfuric Acid Storage Tank Replacement

UIF requested cost recovery to replace the existing sulfuric tank and associated piping with corrosion and UV resistant materials. These materials can withstand a concentration of 93 percent sulfuric acid that is used in the treatment of groundwater produced by Well 3. In UIF witness Flynn’s direct testimony, the requested amount for this project was \$54,303. In UIF witness Flynn’s rebuttal testimony, he provided an updated project cost of \$55,504, which included IDC and cap time. OPC witness Radigan did not address the LUSI Lake Groves Sulfuric Acid Storage Tank Replacement project or the costs in his testimony.

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UIF provided only one bid for the project totaling \$54,302, as it was below UIF's \$75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. In response to discovery, UIF provided an invoice for the project totaling \$54,302.

Witness Flynn testified that the project was completed in April 2020 and had a cap time cost of \$787. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that \$55,089 (\$54,302 + \$787) is reasonable for the project. UIF recorded a cost of \$56,241 for PCF-10 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-10 by \$1,152.

11. PCF-11 UIF – LUSI Hydrochloric Acid Storage Tank Relocation

UIF requested cost recovery to relocate a 1,000 gallon acid storage tank and spill containment vessel to the exterior of the Lake Groves chemical storage building to prevent rapid corrosion of metal components and equipment inside the building. In UIF witness Flynn's direct testimony, the requested amount for this project was \$29,992. No adjustment was made in witness Flynn's rebuttal testimony and there were no IDC or cap time costs associated with this project. OPC witness Radigan did not address the LUSI Hydrochloric Acid Storage Tank Relocation project or the costs in his testimony.

UIF obtained a bid from Florida Environmental Construction in the amount of \$44,834 to complete the entire project. Witness Flynn stated this amount was more than expected, so UIF bid out the electrical and non-electrical components separately. In response to discovery, UIF provided an invoice for the electrical work totaling \$10,753, and the non-electrical work totaling \$19,239. Witness Flynn testified that the project was completed in March 2020, and the project cost totaled \$29,992.

Based on the documentation provided by the Utility, as well as witness testimony, we find that \$29,992 is reasonable for the project. UIF recorded a cost of \$33,165 for PCF-11 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-11 by \$3,173.

12. PCF-12 UIF – LUSI Lake Groves RAS Pump Replacement

UIF requested cost recovery to replace both existing WILO brand RAS pumps with two new Xylem brand pumps. The project scope also includes new piping, bypass piping, pump base adapters, and custom stainless steel bracket welding. Witness Flynn testified that the existing pumps do not provide reliable performance, are expensive to repair, and parts are not readily available for the WILO model.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$43,000. In witness Flynn's rebuttal testimony, he provided an updated project cost of \$42,558. No IDC or cap time was included for this project. OPC witness Radigan did not address the LUSI Lake Groves RAS Pump Replacement project or the costs in his testimony.

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UIF only provided one bid for the install work and one bid for the material costs of the pumps totaling \$42,558, as the cost was below UIF's \$75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements for the project totaling \$42,558.

Witness Flynn testified that the project will be completed in May 2021. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$42,558 is reasonable for the project. UIF recorded a cost of \$45,660 for PCF-12 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-12 by \$3,102.

13. PCF-13 UIF – LUSI Barrington WWTP Improvements

UIF requested cost recovery for improvements to the LUSI Barrington WWTP. This includes installation of a plant lift station, emergency generator, automatic transfer switch, equalization pumps, 200 square foot field office, and a process control lab following the acquisition of the facilities in 2019. The project components address items not included in the original plant design that are needed to meet operating permit requirements, and to provide backup power to prevent overflow during outages. In addition, the project includes engineering services for design, permitting, and construction inspection services.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$380,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$392,946, which includes projected IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the LUSI Barrington WWTP Improvements project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF. Upon cross examination, however, witness Radigan agreed that sufficient information was provided to support project PCF-13.

UIF provided two bids for the construction work and the lower bid of \$333,000 was selected. UIF provided one bid from Kimley-Horn for the engineering services, totaling \$47,000. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements from both contractors totaling \$374,735.

Witness Flynn projected a cap time cost of \$3,824 for PCF-13 and testified that the project will be completed in May 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-13, including a contract and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$378,559 (\$374,735 + \$3,824) is reasonable for the project. UIF recorded a cost of \$396,710 for PCF-13 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-13 by \$18,151.

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14. PCF-14 UIF – Mid-County Master Lift Station

UIF requested cost recovery to replace the master lift station at the WWTP. A DEP consent order required a preliminary design report of the WWTP which ultimately found that the master lift station will need to be replaced. This includes the wet well, pumps, piping, controls, and GSM, as well as demolition of the original lift station. In addition, the project includes engineering services for surveying, design, permitting, bidding, and construction monitoring services.

In UIF witness Flynn’s direct testimony, the requested amount for this project was \$1,766,115. As an exhibit to his rebuttal testimony, witness Flynn provided an updated project cost of \$2,216,140, which includes projected IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Mid-County Master Lift Station project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF.

Bids were obtained from three contractors for the completion of the construction project, and the contractor with the lowest bid of \$1,928,578 was selected. UIF provided one bid from Kimley-Horn for the engineering services, totaling \$101,000. UIF stated that multiple bids were not obtained for the engineering services because “engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems.” As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements from both the construction and engineering contractors totaling \$2,102,058.

Witness Flynn projected a cap time cost of \$38,866 for PCF-14 and testified that the project will be completed by June 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-14, including a contract and scheduling documents, was provided in witness Flynn’s rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$2,140,924 (\$2,102,058 + \$38,866) is reasonable for the project. UIF recorded a cost of \$1,878,199 for PCF-14 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-14 by \$262,725.

15. PCF-15 UIF – Mid-County Generators at Lift Stations 4 and 7

UIF requested cost recovery for backup generators at Mid-County lift stations 4 and 7. This project is in response to DEP’s warning letter, dated August 5, 2019, which was issued ahead of Mid-County’s November 25, 2019 Consent Order and after lift stations 4 and 7 both had sanitary sewer overflows due to power loss. The project scope includes placement of generators, automatic transfer switches, subbase fuel storage tanks, and electrical components. In addition, the project includes engineering services for design, permitting, and construction coordination, and inspection services.

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In UIF witness Flynn's direct testimony, the requested amount for this project was \$145,000. In witness Flynn's rebuttal testimony, he provided an updated project cost of \$136,163, which included IDC and cap time. OPC witness Radigan did not address the Mid-County Generators project or the costs in his testimony. As discussed above, OPC argues that since PCF-15 is an in-kind penalty project the capital costs should be disallowed and not be recovered from customers since the costs of the project exceed the amount of DEP's fine. However, in-kind projects benefit the customers more so than the utility paying a fine and not improving its service and not resolving issues within the Consent Order. Therefore, the costs of the in-kind project should be recovered through rates. Further, OPC relies Order No. 2018-0014-FOF-EI as a Commission precedent on this point, in which we disallowed the recovery of funds deposited into Escrow to be utilized as directed by DEP.²³ However, we also found that this fund component was not associated with operation of a particular facility for the benefit of customers and that the Utility in that case also failed to meet its burden of proof, which is not the case for the in-kind projects presented in the instant docket. In the instant docket, the in-kind projects directly benefit the customers and the Utility has provided documentation for us to evaluate the prudence and cost of the project. PCF-17, PCF-22, and PCF-23 are also considered in-kind projects and are discussed in greater detail within their respective subsections.

UIF provided three bids for the construction costs of the project and the lowest bid of \$105,530 was selected. UIF provided one bid from Kimley-Horn for the engineering services, totaling \$11,000. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements from both the construction and engineering contractors totaling \$116,530.

Witness Flynn projected a cap time cost of \$4,422 for PCF-15 and testified that the project will be completed in May 2021. Regarding the in-kind project concern addressed in OPC's brief, a utility can recover environmental compliance costs pursuant to Section 367.081, F.S., which is consistent with our practice. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$120,952 (\$116,530 + \$4,422) is reasonable for the project. UIF recorded a cost of \$153,163 for PCF-15 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-15 by \$32,211.

16. PCF-16 UIF – Mid-County Curlew Creek I&I Remediation

UIF requested cost recovery to video inspect 6,500 linear feet of GSMs and manholes, replace a collapsed GSM, install sheeting around two manholes to prevent structural failure, line 6,500 linear feet of clay pipe with cured-in-place pipe (CIPP), rehabilitate 36 manholes, install fiberglass liners in three manholes, and install liners in 30 service laterals. In addition, the project includes engineering services for design, permitting, and construction coordination and inspection services. UIF stated this project was necessitated due to regulatory violations related to excessive I&I.

²³ Order No. PSC-2018-0014-FOF-EI, issued January 5, 2018, Docket No. 20180007-EI, *In re: Environmental cost recovery clause*.

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In UIF witness Flynn's direct testimony, the requested amount for this project was \$634,302. In his rebuttal testimony, he provided an updated project cost of \$719,049, which includes projected IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Mid-County Curlew Creek I&I Remediation project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF. Upon cross examination, witness Radigan agreed that information was provided to partially support project PCF-16.

UIF obtained three bids for the construction services for GSM cleaning and inspection, CIPP lining, service lateral lining, and manhole rehabilitation. The contractor with the lowest bid of \$414,243 was selected. UIF provided one bid from Kimley-Horn for the engineering services, totaling \$28,520. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided a signed agreement from the primary contractor totaling \$414,243. In response to discovery, UIF provided invoices from Kimley-Horn totaling \$29,370. In addition, UIF provided supplemental invoices from six supporting contractors for the remainder of the project scope, totaling \$169,357.

Witness Flynn projected a cap time cost of \$11,250 for PCF-16 and testified that the project will be completed by the end of January 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-16, including a contract and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$624,220 ($\$414,243 + \$29,370 + \$169,357 + \$11,250$) is reasonable for the project. UIF recorded a cost of \$664,201 for PCF-17 in its MFRs; therefore, we find an adjustment shall be made to decrease the cost of PCF-31 by \$39,981.

17. PCF-17 UIF – Mid-County Headworks

UIF requested cost recovery to replace a static screen, dewatering screw, and a metal platform that are badly corroded and at end of their service life. In addition, the stainless steel static screen does not adequately prevent debris from entering the treatment trains to the detriment of the treatment process. The project includes installing a 3 millimeter center flow screw, screening compactor, grit removal equipment, and control panel sized to meet peak influent flow characteristics.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$3,046,000. As an exhibit to his rebuttal testimony, witness Flynn provided an updated project cost of \$2,582,684, which includes projected IDC and cap time.

OPC witness Radigan testified that additional documentation was needed for the Mid-County Headworks project, and he could not recommend the costs be included in rate base at this time. Additionally, witness Radigan testified that project PCF-17, which had an expected

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completion date of March 2021, cannot be started until after the completion of PCF-14. However, witness Radigan testified that project PCF-14 was delayed and will not be complete until March 2021. For this reason, witness Radigan testified that there is a need for project scheduling information to determine if the project can meet the 24-month post test year limitation for inclusion in rate base. In rebuttal, witness Flynn testified that the start of project PCF-17 is not dependent on PCF-14, and that the two projects' workflows are being coordinated to accelerate the completion for both projects. In its post-hearing brief, OPC identified PCF-17 as an in-kind penalty project and argued that the fine embedded in capital costs should be disallowed. However, we find that it is appropriate to recover the cost of this project through rates as discussed above for PCF-15.

Bids were obtained from two contractors for the construction portion of the project, and the contractor with the lower bid of \$2,237,777 was selected. UIF sole sourced Kimley-Horn for the engineering services, totaling \$187,005. UIF stated that multiple bids were not obtained because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements from both the construction and engineering contractors totaling \$2,424,782.

Witness Flynn projected a cap time cost of \$53,875 for PCF-17 and testified that the project will be completed by November 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-17, including a contract and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Regarding the in-kind project concern addressed in OPC's brief, a utility can recover environmental compliance costs pursuant to Section 367.081(2)(a)2., F.S., which is consistent with our practice. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$2,478,657 (\$2,424,782 + \$53,875) is reasonable for the project. UIF recorded a cost of \$3,186,839 for PCF-17 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-17 by \$708,182.

18. PCF-18 UIF – Mid-County Lift Station 10 FM Relocation

UIF requested cost recovery to relocate a FM that conflicts with a planned Department of Transportation (DOT) road improvement project. The project scope is to design the relocation of segments of the pipe, coordinate with DOT to avoid conflicts with their plans, then obtain a DEP construction permit, solicit bids, and provide construction inspection services.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$55,750. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$57,451, which includes projected IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Mid-County Lift Station 10 Force Main Relocation project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF.

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One bid was obtained from Kimley-Horn totaling \$55,750. The work outlined in the bid included design, permitting, surveying, construction bidding, and construction coordination services. UIF stated that multiple bids were not obtained because “engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems.” As an exhibit to his rebuttal testimony, witness Flynn provided a signed proposal with Kimley-Horn for a project cost of \$55,750. In addition, witness Flynn testified that “UIF must adjust its facilities before the DOT’s contractor mobilizes late next year to avoid any delays on our part to the DOT’s schedule.”

Witness Flynn projected a cap time cost of \$420 for PCF-18 and testified that the project will be completed by December 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-18, including a contract and scheduling documents, was provided in witness Flynn’s rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$56,170 (\$55,750 + \$420) is reasonable for the project. UIF recorded a cost of \$58,139 for PCF-18 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-18 by \$1,969.

19. PCF-19 UIF – Pennbrooke Diffuser Replacement

UIF requested cost recovery to replace all diffusers and drop pipes in the Pennbrooke WWTP aeration basins. In UIF witness Flynn’s direct testimony, the requested amount for this project was \$33,420. In witness Flynn’s rebuttal testimony, he provided an updated project cost of \$33,419. OPC witness Radigan did not address the Pennbrooke Diffuser Replacement project or the costs in his testimony.

UIF only provided one bid for the repairs to the aeration basin totaling \$29,280 and one bid for the new diffusers totaling \$4,139, as the cost was below UIF’s \$75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. In response to discovery, UIF provided an invoice for the repairs to the aeration basin totaling \$29,280, which did not include the cost of the diffusers.

Witness Flynn testified that the project was completed in April 2020, and stated there were no IDC or cap time costs. Based on the documentation provided by the Utility, as well as the testimony of witness Flynn, we find that \$29,280 is reasonable for the project. UIF recorded a cost of \$34,000 for PCF-19 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-19 by \$4,720.

20. PCF-20 UIF – Sandalhaven SCADA Installation

Similar to projects PCF-3, PCF-7, and PCF-37, UIF requested cost recovery to install RTUs at 13 lift stations in the Sandalhaven collection systems. The 13 lift stations were being monitored with the use of alarm systems; however, UIF began implementing SCADA in other systems in 2016. With the use of SCADA, lift stations can be monitored remotely by operators, which can reduce the lag time between an alarm event and notification. It also provides

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technicians with the ability to pull reports for lift stations to prioritize work activities, and the SCADA system can be used for tracking purposes, such as logging pump replacements or electrical issues.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$128,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$135,406, which includes projected IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Sandalhaven SCADA Installation project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF.

UIF only obtained one bid for this project, as the contractor being utilized for PCF-3, PCF-7, and PCF-37 was also selected for PCF-20. UIF stated that the selected contractor "offered consistent pricing for similar work as well as the ability to maintain safety and security protocols that are critically necessary when installing or modifying any cloud-based technology." As an exhibit to his rebuttal testimony, witness Flynn provided a signed quote for the work to be performed by the contractor totaling \$127,349.

Witness Flynn projected a cost of \$1,950 for cap time related to PCF-20, and testified that the planned completion date is March 2021. In addition, witness Flynn testified that once the equipment is in hand, in January 2021, the contractor will begin installing the RTUs at a rate of two per week. Regarding the concerns raised by witness Radigan, additional support for PCF-20, including an agreement and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$129,299 (\$127,349 + \$1,950) is reasonable for the project. UIF recorded a cost of \$135,490 for PCF-20 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-20 by \$6,191.

21. PCF-21 UIF – Sandalhaven I&I Investigation

UIF requested cost recovery to clean, video inspect and smoke test 8,000 linear feet of 8 inch GSM located in the Sandalhaven collection system, in an effort to identify sources of I&I. A report of any deficiencies requiring repairs would be generated following the inspection. However, a separate capital project would be developed to address the deficiencies identified in the I&I investigation.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$57,000. In witness Flynn's rebuttal testimony, he provided an updated project cost of \$56,500. OPC witness Radigan testified that there were no plant additions associated with the project; therefore, this project was CWIP and not plant-in-service. Furthermore, OPC witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

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UIF provided two bids for the project and the lower bid of \$56,500 was selected. In witness Flynn's rebuttal testimony, a copy of the signed Contract with the contractor was provided as an exhibit. Witness Flynn testified that the Sandalhaven I&I Investigation project will commence in January 2021, and projected a cap time cost of \$1,755.

Based on the documentation provided by the Utility, as well as witness testimony, we find that \$58,255 (\$56,500 + \$1,755) is reasonable for the project. UIF recorded a cost of \$61,847 for PCF-21 in its MFRs as working capital; therefore, we find that an adjustment shall be made to decrease the cost of PCF-21 by \$3,592. Considering that witness Flynn indicated in his direct testimony that any corrections related to deficiencies of the I&I investigation would be captured under a separate capital project, and UIF did not supply sufficient documentation related to the corrections, we find that the costs be recorded in working capital. The appropriate working capital allowance is discussed further in Section XVI below.

22. PCF-22 UIF – Wekiva WWTP Improvements

UIF requested cost recovery for plant improvements at its Wekiva WWTP. The improvements included removal and replacement of the process blowers, air header, traveling bridge filters, and storage building. Additionally, the relocation of a belt press, upgrades to the sodium hypochlorite storage capacity, replacement of the sodium aluminate storage tank, and renewal of the plant operating permit, as well as the demolition and removal of all decommissioned tanks and equipment were also requested to be recovered. Improvements were also planned for the plant roadway and facility entrance gate. Furthermore, a Noise & Odor study was conducted at the Wekiva WWTP to provide a baseline of existing conditions at the plant boundary. The Noise & Odor study was used to determine if excessive noise or odors were being produced and carried off-site, as well as identify any measures for noise or odor reduction that were needed to maintain compliance with DEP regulations.

This project was a result of a consent order issued by DEP. Under the terms of the consent order, the Utility was required to perform an engineering study of the Wekiva WWTP to identify any deficiencies which led to the facility failing to meet its operating permit limits. The study would also examine whether the plant met Class I reliability standards. UIF submitted the report with the recommended improvements to DEP for review, and DEP determined that the outlined improvements met the objectives of the consent order. A permit application to construct the proposed improvements was submitted to DEP and a permit for construction was issued on January 31, 2019. Many of the improvements involved the replacement of various treatment components that were past their expected service life, were inadequate to treat wet weather flows, and/or lack adequate redundancy.

In UIF witness Flynn's direct testimony, the requested amount for the project was \$6,112,000. In his rebuttal testimony, UIF witness Flynn updated the project cost for PCF-22 to \$6,846,372, which included IDC and projected cap time. OPC witness Radigan did not address the Wekiva WWTP Improvements project or the costs in his testimony. However, in its post-hearing brief, OPC identified PCF-22 as an in-kind penalty project and argued that the fine embedded in capital costs should be disallowed. UIF obtained bids from two contractors for the WWTP improvements, and the contractor with the lowest bid of \$6,355,772 was selected. In

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witness Flynn's rebuttal testimony, a copy of the signed agreement with the contractor was provided as an exhibit. Witness Flynn testified that the project was "substantially complete with all newly installed equipment placed into service in October and November. The project is scheduled to be completed by the end of December 2020."

In response to discovery, the Utility provided invoices to support the construction costs totaling \$6,176,447. This updated project cost included three change orders for additional work that was required, including relocating a water main that was in conflict with the project, upgrading a sludge press, installing a new pump, and electrical upgrades. UIF provided invoices for engineering services related to the WWTP improvements and the Noise & Odor study totaling \$280,700. Witness Flynn also projected a cost of \$91,161 for cap time related to PCF-22. In its post-hearing brief, OPC identified PCF-22 as an in-kind penalty project and argued that the fine embedded in capital costs should be disallowed. However, we find that it is appropriate to recover the cost of this project through rates as discussed above for PCF-15. Based on the documentation provided by the Utility, as well as witness testimony, we find that a total cost of \$6,548,308 ($\$6,176,447 + \$280,700 + \$91,161$) is reasonable for the project. UIF recorded a cost of \$6,859,793 for PCF-22 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-22 by \$311,485.

23. PCF-23 UIF – Wekiva WWTP Headworks

UIF requested cost recovery for the design, permitting, bidding, construction, inspection, and engineering for the headworks improvements at the Wekiva WWTP. The improvements included new screens, enhanced flow monitoring, increased peak flow capacity, overflow piping, an emergency bypass pump, and upsized piping. This project was initiated to address a DEP issued consent order that resulted from wastewater overflow in 2019. The overflow occurred after a screen had become jammed and led to raw influent overflowing onto the ground and into a nearby area. It was determined that the incident was due to the facility receiving an influent flow that exceeded the headworks' design capacity. The headworks improvements would allow the WWTP to meet the historical and current flows, provide for additional redundancy in the event of equipment failures, and incorporate a SCADA system for monitoring the headworks operation.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$2,750,000. In his rebuttal testimony, UIF witness Flynn updated the project cost to \$2,908,666, which included IDC and projected cap time. OPC witness Radigan testified that additional documentation was needed for the Wekiva WWTP Headworks project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices were not provided by the Utility. Additionally, the witness toured several projects, including the Wekiva Headworks project where construction had not yet begun. OPC also identified PCF-23 as an in-kind penalty project and argued that the fine embedded in capital costs should be disallowed.

UIF obtained bids from three contractors for the headworks improvements, and the contractor with the lowest bid was selected for a total cost of \$2,563,162. As an exhibit to his

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rebuttal testimony, witness Flynn provided a signed contract, along with a Notice to Proceed indicating that substantial completion of the project would be achieved by September 1, 2021, and final payment would be due by October 1, 2021. Witness Flynn testified that the Wekiva WWTP Headworks project was estimated to be fully completed in November 2021.

In response to discovery, the Utility provided invoices related to the construction and engineering services totaling \$2,768,827. Witness Flynn also projected a cost of \$16,126 for cap time related to PCF-23. Regarding the concerns raised by witness Radigan, additional support for PCF-23, including a contract and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. In its post-hearing brief, OPC identified PCF-23 as an in-kind penalty project and argued that the fine embedded in capital costs should be disallowed. However, it is appropriate to recover the cost of this project through rates as discussed above for PCF-15. Based on the documentation provided by UIF, as well as witness testimony, we find that \$2,784,953 (\$2,768,827 + \$16,126) is reasonable for the project. The Utility recorded a cost of \$3,100,024 for PCF-23 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-23 by \$315,071.

24. PCF-24 Sanlando Well Panel Replacements

In its filing, UIF requested cost recovery to replace control panels, electric meter bases, and associated electrical equipment at five of Sanlando's water supply wells. The existing well panels were original panels that were installed in the 1970s and had reached the end of their service life. Furthermore, the existing panels were not compliant with the National Electric Code and the procurement of replacement parts had become difficult.

In UIF witness Flynn's direct testimony, the requested amount for PCF-24 was \$74,500. In his rebuttal testimony, UIF witness Flynn updated the project cost to \$78,537, which included IDC and projected cap time. OPC witness Radigan did not address the Sanlando Well Panel Replacements project or the costs in his testimony. The Utility obtained one bid for this project at a cost of \$74,500 as the cost was below UIF's \$75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases.

In response to discovery, the Utility provided invoices for the well panel replacements totaling \$74,500. Witness Flynn testified that the Sanlando Well Panel Replacements project was estimated to be completed in December 2020, and projected a cost of \$2,312 for cap time related to PCF-24. Based on the documentation provided by UIF, as well as witness testimony, we find that \$76,812 (\$74,500 + \$2,312) is reasonable for the project. The Utility recorded a cost of \$76,796 for PCF-24 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-24 by \$16.

25. PCF-25 Sanlando FM and WM Replacement

UIF requested cost recovery to replace 5,000 linear feet of asbestos-cement (AC) wastewater FM and 5,000 linear feet of AC WM with PVC mains. The existing wastewater FM was constructed in 1973 and is the only means of conveying flows from two areas of the

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Sanlando collection system to the Wekiva WWTP. The existing WM in the Sanlando water distribution system was similar in age to the FM and also follows a similar route. The WM had incurred several breaks over the past two years and had been identified for a high risk of failure in the Utility's Asset Management Program.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$3,762,250. In his rebuttal testimony, UIF witness Flynn updated the project cost to \$3,860,720, which included IDC and projected cap time. OPC witness Radigan did not address the Sanlando FM and WM Replacement project or the costs in his testimony. Bids were obtained from three contractors for the replacement of the WM and FM, and the contractor with the lowest combined bid was selected at a cost of \$3,575,250. Additionally, the Utility provided two bids from Kimley-Horn for a combined total of \$116,150 related to the design and permitting for the main replacements, as well as bidding and construction services. As an exhibit to his testimony, witness Flynn provided an agreement for the project, along with a Notice to Proceed indicating that the project would be substantially completed by May 23, 2021, and final payment would be due by June 22, 2021.

In response to discovery, UIF provided invoices supporting a project cost of \$3,691,400. Witness Flynn testified that the Sanlando FM and WM Replacement project was estimated to be completed in May 2021, and projected a cost of \$27,565 for cap time related to PCF-25. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$3,718,965 (\$3,691,400 + \$27,565) is reasonable for the project. UIF recorded a cost of \$3,926,417 for PCF-25 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-25 by \$207,452.

26. PCF-26 Sanlando Engineering F5/C1/L2 FM Replacements

UIF requested cost recovery to replace three FMs in the Sanlando system that had reached the end of their service life. The costs requested for the project related to the engineering, permitting, bidding, and inspection services; however, construction costs for the FM replacements were not included in PCF-26. The three FM segments to be replaced were constructed in the 1970s and 1980s and had been identified by the Utility as having a high probability for failure. Witness Flynn testified that the Utility had intended to include the construction costs in this proceeding; however, it would have resulted in the Utility delaying its filing. Nonetheless, witness Flynn stated that "the engineering services covered in this project are a prerequisite to the construction of the replacement FMs and the FM failure history indicates clearly that replacing the FMs is an immediate need."

In UIF witness Flynn's direct testimony, the requested amount for this project was \$194,500. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$202,966, which included IDC and cap time. OPC witness Radigan testified that there were no plant additions associated with PCF-26, pointing out that UIF indicated that construction of the new FMs would be captured under a separate project. Therefore, witness Radigan testified that this project was CWIP and should not be considered plant-in-service. Furthermore, OPC witness Radigan stated that once the project was complete, "the expenditures to date will be added to the

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construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time.”

Three bids for engineering services were obtained from Kimley-Horn, one for each FM segment with all three totaling \$185,500. The work outlined in the bids included FM route analysis, design, and permitting, as well as construction related services such as bid preparation and inspections for the FM replacements. The Utility stated that multiple bids were not obtained because “engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems.” Additionally, the Utility indicated that a separate bid was obtained for each of the three FMs to allow UIF to compare the engineering costs against the actual construction bids, which will be solicited individually for each FM.

In response to discovery, UIF provided invoices for the project totaling \$185,500. The Utility stated that the Sanlando Engineering F5/C1/L2 FM Replacements project was estimated to be completed in December 2020, and witness Flynn projected a cost of \$407 for cap time related to PCF-26. Based on the documentation provided by UIF, as well as witness testimony, we find that \$185,907 (\$185,500 + \$407) is reasonable for the project. UIF recorded a cost of \$202,637 for PCF-26 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-26 by \$16,730.

27. PCF-27 Sanlando I&I Corrections, Phase 4

UIF requested cost recovery for cleaning and video inspection of 94,000 linear feet of its Sanlando gravity wastewater main and manholes to locate and evaluate pipe deficiencies, as well as remediation of any identified deficiencies. The deficiencies would be addressed through a combination of cured-in-place pipe (CIPP) lining and excavation and replacement. A large portion of Sanlando’s collection system was constructed in the 1970s and is a combination of vitrified clay pipe and PVC. For several months in 2019, the Wekiva WWTP was treating wastewater flows over its rated capacity, resulting in the need to investigate where the excess inflow and infiltration was occurring.

In UIF witness Flynn’s direct testimony, the requested amount for this project was \$1,996,092. In UIF witness Flynn’s rebuttal testimony, he provided an updated project cost of \$2,328,0234, which included IDC and cap time. OPC witness Radigan did not dispute the Sanlando I&I Corrections, Phase 4 project or the costs in his testimony. Bids were obtained from three contractors for the excavation and replacement of the manholes and a gravity main, and the contractor with the lowest bid of \$2,391,373 was selected. Three bids were also obtained for the video inspection and CIPP linings, and the contractor with the lowest bid of \$734,681 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements with the two contractors totaling \$1,921,685. The witness also included Notice to Proceed forms that indicated that the final completion date for the excavation and replacement work was January 26, 2021, and April 20, 2021, for the video inspection and CIPP lining work.

In response to discovery, the Utility provided invoices and support for the two portions of the project totaling \$2,068,761. This total included change orders for additional work that was

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required for the project, including raising a manhole, a pipe repair, and pipe cleanouts. UIF also included an invoice for an emergency sewer repair at a cost of \$62,914. The Utility stated that the repair was due to a collapsed sewer pipe in January 2020, and was “the initiation of the proforma project’s investigative efforts that ultimately identified numerous additional pipe and manhole deficiencies in Sanlando’s collection system that were aggregated into the scope of the Sanlando I&I Corrections Phase project.” Witness Flynn testified that the Sanlando I&I Corrections project was estimated to be completed in March 2021, and projected a cost of \$30,000 for cap time related to PCF-27. Based on the documentation provided by UIF, as well as witness testimony, we find that \$2,161,675 ($\$2,068,761 + \$62,914 + \$30,000$) is reasonable for the project. The Utility recorded a cost of \$2,062,398 for PCF-27 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-27 by \$99,277.

28. PCF-28 Sanlando E.E. Williamson Utility Relocations

UIF requested cost recovery to relocate a water and wastewater main within the E.E. Williamson Road right of way, which conflicted with a road improvement project being completed by Seminole County. In UIF witness Flynn’s direct testimony, the requested amount for this project was \$444,026. In UIF witness Flynn’s rebuttal testimony, he provided an updated project cost of \$462,535, which included IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Sanlando E.E. Williamson Utility Relocations project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by the Utility.

Bids were obtained from three contractors for relocation of the water and wastewater mains, and the contractor with the lowest bid of \$423,351 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided a signed agreement with the contractor for a total project cost of \$423,351. A signed proposal was also provided for engineering services totaling \$20,675. The engineering services were comprised of preparing plans and drawings, and post design services related to the project.

Witness Flynn projected a cost of \$6,660 for cap time related to PCF-28, and he testified that the Sanlando E.E. Williamson Utility Relocations project was an open project and was estimated to be completed by December 2021. However, UIF witness Flynn stated that the start of the project was dependent on Seminole County’s schedule, which “currently identifies the county’s intent to let their contractor proceed in the fourth quarter of 2021.” Due to the fact that construction has not yet begun for PCF-28, invoices were not available for verification; however, it appears the project will be completed within the required 24 months following the test year. Regarding the concerns raised by witness Radigan, additional support for PCF-28, including a contract and scheduling information, was provided in witness Flynn’s rebuttal testimony and in response to discovery. Based on the documentation provided by UIF, as well as witness testimony, we find that \$450,686 ($\$423,351 + \$20,675 + \$6,660$) is reasonable for the project. The Utility recorded a cost of \$462,856 for PCF-28 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-28 by \$12,170.

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29. PCF-29 Sanlando Lift Station Mechanical Rehabilitation

UIF requested cost recovery to remove and replace various parts, valves, and fittings at several of its Sanlando lift stations. The project also included costs for the replacement of control panels at 12 lift stations. The lift stations being rehabilitated were constructed 40 years ago, and the Utility had identified deficiencies with the control panels as part of its Asset Management Plan.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$540,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$543,277, which included IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Sanlando Lift Station Mechanical Rehabilitation project, and he could not recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project as final contracts and invoices had not been provided by UIF. Upon cross examination, however, witness Radigan agreed that sufficient information was provided to support project PCF-29.

Bids were obtained from three contractors for rehabilitation of the lift stations, and the contractor with the lowest bid of \$432,850 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided a signed agreement with the contractor for a total project cost of \$465,950, along with a Notice to Proceed form indicating a final completion date of March 2, 2021. The Utility stated that "the project scope was expanded to include installation of a control panel and conduits at LS H-05 at \$25,925 and to replace some discharge piping and valves at LS C-02 at \$3,290."

In response to discovery, UIF provided invoices for the project totaling \$508,764. This total included change orders for additional parts and labor, included a new plug valve and piping on two of the lift stations. Furthermore, the Utility included two invoices totaling \$13,394 for the replacement of a main disconnect to a lift station and an emergency replacement of a breaker. Witness Flynn testified that the Sanlando Lift Station Mechanical Rehabilitation project was estimated to be completed by December 2020, and projected a cost of \$6,856 for cap time related to PCF-29. Regarding the concerns raised by witness Radigan, additional support for PCF-29, including an agreement and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by UIF, as well as witness testimony, we find that \$529,015 (\$508,764 + \$13,394 + \$6,856) is reasonable for the project. The Utility recorded a cost of \$560,469 for PCF-29 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-29 by \$31,455.

30. PCF-30 Sanlando FM Modeling and Development of CIP

UIF requested cost recovery for two separate engineering tasks related to its Sanlando FM network. The first was a five-year capital plan for infrastructure renewal, which involved prioritization of improvements over a five-year period. This portion of the project identified 98,800 linear feet of FM, located largely in the Sanlando service area, as high priority. The second portion of the project involved the modeling of Sanlando FMs. Due to the size and

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complexity of the Sanlando system, FM modeling was needed to identify the most efficient route for replacing FM segments and to potentially improve pumping efficiencies.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$83,500. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$94,161, which included IDC and cap time. OPC witness Radigan testified that there were no plant addition costs associated with the Sanlando FM Modeling and Development of CIP project. Instead, this project was CWIP and should not be considered plant-in-service. Furthermore, witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

Two bids were obtained from Kimley-Horn, one for the five-year capital plan at a cost of \$46,500 and one for the FM modeling at a cost of \$37,000. During discovery, Commission staff inquired why bids from other contractors were not obtained, and the Utility stated that the costs for each task were below the \$75,000 threshold requiring multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. Additionally, UIF stated that for engineering related services, projects may be sole sourced to engineering firms that are familiar with the Utility's systems, facilities, and processes.

In response to discovery, the Utility provided invoices and documentation for the project totaling \$83,500. As an exhibit to his rebuttal testimony, witness Flynn also provided a proposal for pressure gauges totaling \$14,780. The pressure gauges were needed to complete the FM modeling, which required lift station drawdowns to be performed with pressure readings of the FM. Witness Flynn testified that the Sanlando FM Modeling and Development of CIP project was completed in June 2020, and included a cost of \$5,466 for cap time related to PCF-30. Regarding the concerns raised by witness Radigan, plant additions were made for this project totaling \$14,780 for the pressure gauges. Based on the documentation provided by UIF as well as witness testimony, we find that \$103,746 (\$83,500 + \$14,780 + \$5,466), is reasonable for the project. The Utility recorded a cost of \$93,492 for PCF-30 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-30 by \$10,254.

31. PCF-31 Sanlando GST Remediation

UIF requested cost recovery for the remediation of three ground water storage tanks at its Wekiva WTP and one ground water storage tank at its Des Pinar WTP. As required by DEP, the GSTs were inspected and several deficiencies were identified, including interior coating failures and corrosion of the interior ladders. The costs requested for PCF-31 were for sandblasting, epoxy, and painting of the interior of three tanks: two at the Wekiva WTP and the one at the Des Pinar WTP. The costs also included replacement of existing steel ladders with new fiberglass ladders in two of the Wekiva WTP tanks and the one Des Pinar WTP tank.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$181,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$194,003, which included IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the Sanlando GST Remediation project, and he could not

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recommend the costs be included in rate base at this time. In response to discovery, OPC indicated that witness Radigan was unable to verify the construction timing and cost of the project, as final contracts and invoices had not been provided by the Utility. Bids were obtained from two contractors for remediation of the storage tanks, and the contractor with the lowest bid of \$148,983 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided signed proposals with the contractor for a total project cost of \$180,319. Included in this total was an additional proposal for the repair of a GST tank wall at the Wekiva WTP totaling \$34,400.

Witness Flynn projected a cost of \$4,259 for cap time related to PCF-31, and testified that the contractor had begun work in April 2020. However, at the direction of UIF, the project was postponed until late autumn or winter due to the annual increase in water demand that occurred in the spring. Delaying the project would allow for the tanks to be removed from service in sequence and would not reduce the system's storage capacity or negatively impact the delivery of service. The Utility stated that it had "elected to postpone further work until January 2021 reflecting the time of year when water demand is at its lowest." In response to discovery, UIF provided an invoice totaling \$77,496 for the tank work that was completed before the project was delayed. Regarding the concerns raised by witness Radigan, additional support for PCF-31, including signed proposals and scheduling information, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$184,578 (\$180,319 + \$4,259) is reasonable for the project. UIF recorded a cost of \$188,923 for PCF-31 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-31 by \$4,345.

32. PCF-32 UIF – Tierra Verde I&I Remediation

UIF requested cost recovery to video inspect 64,300 linear feet of GSMs and 253 manholes, and remove accumulated solids throughout the collection system due to severe tuberculation. This project also included the cleaning and lining of portions of the collection system to prevent future tuberculation.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$165,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$219,560, inclusive of IDC and cap time. The project scope was expanded because the initial contractor, RedZone Robotics, did not have sufficient equipment to inspect the entire system, and an additional contractor was required to clean and inspect those portions. OPC witness Radigan did not address the Tierra Verde I&I Remediation project or the costs in his testimony.

UIF provided one bid for inspection services totaling \$85,300, and one bid for cleaning and lining services totaling \$74,276. UIF stated multiple bids were not obtained for the inspection services because of the competitive unit price offered, and the contractor's ability to inspect the majority of the collection system at once. UIF only obtained one bid for the cleaning and lining portion of the project since it was less than UIF's \$75,000 threshold for obtaining multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. In response to discovery, UIF provided invoices for the cleaning and lining portion of the project, including invoices from the additionally required contractor, totaling \$102,562, and invoices for the inspection services totaling \$76,391.

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Witness Flynn testified that the project will be completed in December 2020, and projected a cap time cost of \$13,512. Based on the documentation provided by the Utility, as well as witness testimony, we find that the cost of cleaning and lining the system, totaling \$116,074 (\$102,562 + \$13,512), is reasonable and shall be capitalized. UIF recorded a cost of \$172,192 for PCF-32 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-32 by \$56,118. The cost for inspecting the system, totaling \$76,391, which did not result in capital improvements, is a non-recurring expense. As such, we find that the cost shall be deferred and amortized over five years.

33. PCF-33 UIF – Tierra Verde FM and GSM Replacement

UIF requested cost recovery to relocate the Tierra Verde FM and GSM. This involves the replacement of 1,500 linear feet of 10 inch FM between lift station 4 and a receiving manhole, lining 400 linear feet of GSM, and installing two manholes. Part of the FM had failed in 2017 and was replaced. Following this event, a contractor attempted to video inspect and analyze the condition of the FM. However, heavy sedimentation in the bottom of the pipe made inspection impossible, and it was ultimately determined the entire FM needed replacement. In addition, the location of the FM and GSM, as well as the lift station being replaced in project PCF-34, conflicted with a traffic circle being installed by the DOT. For this reason, it was necessary to relocate the FM and GSM in advance of the DOT's traffic circle project to avoid incurring penalties for delaying the DOT's project.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$551,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$593,368, which included IDC and cap time. OPC witness Radigan testified that additional documentation was needed for the project, and he could not recommend the costs be included in rate base at this time. Furthermore, OPC witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

UIF provided bids from McKenzie Contracting (McKenzie) for the construction work, totaling \$501,294, and one bid for the engineering services of Kimley-Horn, totaling \$24,042. Witness Flynn stated UIF solicited the service of seven qualified contractors to complete the construction work. However, only one bid was submitted and was awarded to McKenzie. UIF also stated that additional bids were not solicited due to time constraints resulting from the necessity to complete the work in advance of the DOT project. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." As an exhibit to his rebuttal testimony, witness Flynn provided signed agreements for both the construction and engineering work, totaling \$475,267. In response to discovery, UIF provided a change order in the amount of \$50,069 for additional services performed by McKenzie, due to a concrete slab found under the roadway obstructing access to the FM.

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In witness Flynn's rebuttal testimony, he stated that the project is nearly complete, with one manhole ring and cover requiring adjustment in coordination with the DOT. In addition, witness Flynn projected a cap time cost of \$8,450, and a plant-in-service date of February 2021. Regarding the concerns raised by witness Radigan, additional support for PCF-33, including an agreement and scheduling documents, was provided in witness Flynn's rebuttal testimony and in response to discovery. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$533,786 (\$475,267 + \$50,069 + \$8,450) is reasonable for the project. UIF recorded a cost of \$609,491 for PCF-33 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-33 by \$75,705.

34. PCF-34 UIF – Tierra Verde Lift Station 4 Replacement

UIF requested cost recovery to relocate the Tierra Verde Lift Station 4, in addition to the required engineering services to design, permit, and oversee the construction of the lift station. The construction contractor will construct a new lift station on Madonna Blvd. and convert the wet well from the prior lift station to a manhole. The existing wet well is undersized, and the lift station is at the end of its service life after being in service over 50 years. In addition, the location of the lift station, as well as the FM and GSM being replaced in project PCF-33, conflict with a traffic circle being installed by the DOT. The new lift station will be moved to a location that avoids conflicts with underground utilities and offers adequate room away from the edge of asphalt when performing maintenance on the facility. Similar to PCF-33, this project is being coordinated with the DOT to avoid scheduling conflicts.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$80,542 for engineering services, and \$828,440 for construction. In UIF witness Flynn's rebuttal testimony, he provided an updated construction cost of \$871,501, which included IDC and cap time. OPC witness Radigan did not address the Tierra Verde Lift Station 4 Replacement project or the costs in his testimony.

UIF provided bids from two contractors for the construction services, and the contractor with the lower bid of \$828,440 was selected. UIF also provided bids from Kimley-Horn for the engineering services, totaling \$85,300. UIF stated that multiple bids were not obtained for the engineering services because "engineering services are often sole sourced to engineering firms that are very familiar with the facilities, equipment, processes, and UIF policies and procedures regarding specific water and wastewater systems." In response to discovery, witness Flynn provided signed agreements for both the construction and engineering work, totaling \$913,740.

Witness Flynn stated that during the construction of project PCF-33, a conduit collapsed that supplied power to lift station 4. As a result, new conduit and conductors were routed on an expedited basis to resupply power to the lift station. Provisions were made to construct and place the new conduit and conductors in alignment with the construction plans for the new lift station. For this reason, the associated costs, totaling \$10,650, were included in project PCF-34.

Witness Flynn testified that construction of the new lift station will begin in April 2021, once the DOT has restored Madonna Blvd.'s right-of-way, and will be completed in September 2021. In addition, witness Flynn provided a projected cap time cost of \$12,527 for the project.

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Based on the documentation provided by the Utility, as well as witness testimony, we find that \$936,917 (\$913,740 + \$10,650 + \$12,527) is reasonable for the project. UIF recorded a cost of \$854,450 for PCF-34 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-34 by \$82,467.

35. PCF-35 UIF – Buena Vista Well Improvements

UIF requested cost recovery for well improvements at its Buena Vista WTP, which included replacing the well pump assembly at Well 2, cleaning and inspecting the well casing, replacing the hydropneumatic tank and piping at Well 3, and making minor improvements to the well house. The Well 2 pump had been in service for over 30 years and was found to be operating below its design output. The hydropneumatic tank at Well 3 was inspected and found to need internal sandblasting and coating. However, according to witness Flynn's Exhibit PCF-35, due to the tank's installation date of 1996 and considering it was not an American Society of Mechanical Engineers code tank, the existing tank would instead be replaced. The new replacement hydropneumatic tank would be up to code and would negate the need for sandblasting and coating.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$95,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$80,233, which included IDC and cap time. OPC witness Radigan did not address the Buena Vista Well Improvements project or the costs in his testimony. The Utility provided one bid for the hydropneumatic tank and piping at Well 3 totaling \$49,973 and an invoice for the improvements at Well 2 totaling \$20,595. UIF stated that the costs for the work performed by the two contractors was below the \$75,000 threshold, so additional bids were not obtained. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases. In addition, both contractors had been utilized previously and the Utility had been satisfied with the quality of the work performed and the costs for PCF-35 were in line with similar projects.

As an exhibit to his rebuttal testimony, witness Flynn provided invoices for the work related to the two wells totaling \$37,340. In response to discovery, UIF provided an invoice for the Well 3 hydropneumatic tank and piping totaling \$59,847. This total also included a change order of \$9,874 for installation of piping, new check valve, concrete pedestal replacements, and plant site maintenance. Witness Flynn testified that the Buena Vista Well Improvements project was estimated to be completed by December 2020, and projected a cost of \$475 for cap time related to PCF-35. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$97,662 (\$37,340 + \$59,847 + \$475) is reasonable for the project. UIF recorded a cost of \$98,145 for PCF-35 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-35 by \$483.

36. PCF-36 UIF – Orangewood Well 1 Improvements

Similar to PCF-35, UIF requested cost recovery for well improvements at its Orangewood WTP, specifically for the replacement of the well pump assembly, well head, and discharge piping, as well as the replacement of the hydropneumatic tank and emergency

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generator. The Well 1 pump had been in service for over 30 years and was found to be operating below its design output. The hydropneumatic tank was inspected and found to need internal sandblasting and coating. During the sandblasting process, a hole appeared in the tank wall, requiring the replacement of the entire tank. The existing emergency generator was installed in 1989 and was at the end of its useful life. Additionally, the existing generator operated on propane gas, which presented delivery challenges during storm events.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$165,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$184,672, which included IDC and cap time. OPC witness Radigan did not address the Orangewood Well 1 Improvements project or the costs in his testimony. The Utility obtained bids from two contractors for the well improvements, and the contractor with the lowest bid of \$32,408 was selected. Two bids at a cost of \$67,315 and \$65,717 were obtained for the hydropneumatic tank replacement, and the contractor that would be completing the well improvements was selected for the tank replacement at a cost of \$67,315. UIF also provided two bids for the new generator, and the contractor with the lowest bid of \$42,848 was selected.

In response to discovery, the Utility provided invoices for the well, hydropneumatic tank, and generator totaling \$156,298. UIF also provided invoices for engineering services at a cost of \$9,000 related to the installation of the hydropneumatic tank. Witness Flynn testified that the Orangewood Well 1 Improvements project was completed in September 2020, and included a cost of \$2,477 for cap time. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$167,775 (\$156,298 + \$9,000 + \$2,477) is reasonable for the project. UIF recorded a cost of \$170,453 for PCF-36 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-36 by \$2,678.

37. PCF-37 UIF – Seminole County SCADA Installation

In its filing, UIF requested cost recovery to install remote telemetry units at 10 lift stations in the Weathersfield and Ravenna Park collection systems. The 10 lift stations were being monitored with the use of alarm systems; however, the Utility began implementing SCADA in other systems in 2016. With the use of SCADA, lift stations can be monitored remotely by operators, which can reduce the lag time between an alarm event and notification. It also provides technicians with the ability to pull reports for lift stations to prioritize work activities and the SCADA system can be used for tracking purposes, such as logging pump replacements or electrical issues.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$94,476. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$96,664, which included IDC and cap time. OPC witness Radigan did not address the Seminole County SCADA Installation project or the costs in his testimony. UIF only obtained one bid for this project, as the contractor being utilized for PCF-7 and PCF-20 was also selected for PCF-37. The Utility stated that the selected contractor "offered consistent pricing for similar work as well as the ability to maintain safety and security protocols that are critically necessary when installing or modifying any cloud-based technology." Additionally, UIF indicated that the selected contractor offered equipment equal to the SCADA equipment that had been installed at

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other locations, thus simplifying repairs and maintenance, as well as equipment technical support.

In response to discovery, the Utility provided invoices for the SCADA installation totaling \$93,876. Witness Flynn testified that the Seminole County SCADA Installation project was completed in January 2020, and included a cost of \$100 for cap time. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$93,976 (\$93,876 + \$100) is reasonable for the project. UIF recorded a cost of \$96,664 for PCF-37 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-37 by \$2,688.

38. PCF-38 Summertree Chlorine Dioxide Pilot Study

UIF requested cost recovery for a chlorine dioxide pilot study for its Summertree system. The purpose of the pilot would be to determine the effectiveness of using chlorine dioxide as a post-treatment method for reducing the accumulation of nitrogen compounds in the Summertree water distribution system. Water is supplied to the Summertree system by Pasco County through a bulk water agreement. The Utility estimated that once the water enters the Summertree system, it is typically four days old and the chloramination that is used to treat the water results in a combined chlorine residual which varies and decreases over time. In order to maintain the required chlorine residual in the system, the Utility had implemented flushing procedures to reduce the age of the water. The use of chlorine dioxide as a secondary disinfectant could potentially stabilize the chlorine residual and greatly reduce the amount of flushing, thus resulting in lower O&M costs that would otherwise be passed on to customers. It would also eliminate the cost of a semi-annual chlorine burn, which requires notifying customers before and after the burn event occurs.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$52,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$92,000, which also included the chemical feed equipment needed to carry out the pilot study. Witness Flynn's projected costs related to IDC and cap time, bring the total project cost to \$98,036. OPC witness Radigan did not address the Summertree Chlorine Dioxide Pilot Study project or the costs in his testimony. The engineering services for this project were sole sourced to Kimley-Horn at a cost of \$52,000. For the chemical feed equipment, the Utility stated that Kimley-Horn solicited bids from various contractors and vendors, and only one contractor met all of the requirements of both the pilot study and the permanent installation of the equipment.

In response to discovery, UIF provided invoices for the project totaling \$52,000 for engineering services and \$37,890 for the chemical equipment and a 90-day chemical supply. Witness Flynn testified that the Summertree Chlorine Dioxide Pilot Study project was estimated to be completed in March or April 2021, and included a cost of \$1,411 for cap time. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$91,301 (\$52,000 + \$37,890 + \$1,411) is reasonable for the project. UIF recorded a cost of \$52,000 for PCF-38 in its MFRs as working capital; therefore, we find that an adjustment shall be made to increase the cost of PCF-38 by \$39,301 and the amount shall be included in plant-in-service.

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39. PCF-39 Summertree I&I Investigation

UIF requested cost recovery to clean, video inspect, and smoke test 9,400 linear feet of gravity wastewater mains and manholes in Pointe West, the oldest section of its Summertree system. A report of any deficiencies requiring repairs would be generated following the inspection. However, a separate capital project would be developed to address the deficiencies identified in the I&I investigation.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$27,000. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$378,227, which included \$28,620 for the initial cleaning and video inspection, as well as \$335,859 for capital improvements related to the I&I investigation. OPC witness Radigan testified that there were no plant addition costs associated with the Summertree I&I Investigation project. Instead, this project was CWIP and should not be considered plant-in-service. Furthermore, witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

Bids were obtained from three contractors for the cleaning and video inspection of the system, and the contractor with the lowest bid of \$28,620 was selected. As an exhibit to his rebuttal testimony, witness Flynn provided a bid for \$320,859 to address the pipe deficiencies that had been identified during the I&I investigation. The Utility stated it solicited bids from three contractors in total to address the pipe deficiencies; however, the selected contractor was the only one of the three that submitted a bid.

Witness Flynn provided documentation related to the I&I investigation totaling \$28,620. No additional documentation was provided to support the work to correct the deficiencies identified in the I&I investigation, aside from the single bid offered in witness Flynn's rebuttal testimony. For instance, UIF did not produce a signed contract or any documents supporting a completion date within the required 24 months for PCF-39. Witness Flynn testified that the Summertree I&I Investigation project was estimated to be completed in March 2021, and projected a cost of \$7,500 for cap time. Considering that witness Flynn's Exhibit PCF-39 indicated that any corrections related to the I&I investigation would be captured under a separate capital project, and that the Utility did not supply sufficient documentation to support the corrections, we find that those costs shall be included at this time. Regarding the concerns raised by witness Radigan, we agree that there were no plant addition costs associated with PCF-39. Based on the documentation provided by UIF, as well as witness testimony, we find that \$28,620 is reasonable for the project. The Utility recorded a cost of \$27,481 for PCF-39 in its MFRs as working capital; therefore, we find that an adjustment shall be made to increase the cost of PCF-39 by \$1,139. The appropriate working capital allowance is discussed further in Section XVI below.

40. PCF-40 UIF – Golden Hills Galvanized Pipe Replacement

UIF requested cost recovery to remove and replace approximately 2,000 linear feet of WMs and two fire hydrants. The WMs had been in service for over 50 years and had become

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tuberculated and prone to leaks. The two original fire hydrants had begun to leak, and repair parts were no longer available due to their age. Additionally, 18 service lines and some isolation valves would also be replaced as part of this project.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$75,160. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$80,004, which included IDC and cap time. OPC witness Radigan did not address the Golden Hills Galvanized Pipe Replacement project or the costs in his testimony. The Utility obtained multiple bids for the project from one contractor totaling \$75,160. UIF stated that bids were not solicited from additional contractors as the selected contractor was familiar with the Golden Hills system, had produced very satisfactory results for similar work, and was available to schedule the work. Furthermore, the Utility had not expected the total construction cost to exceed the \$75,000 threshold for soliciting multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases.

In response to discovery, UIF provided estimates and invoices for the project totaling \$75,160. Witness Flynn testified that the Golden Hills Galvanized Pipe Replacement project was completed in December 2020, and included a cost of \$4,393 for cap time. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$79,553 (\$75,160 + \$4,393) is reasonable for the project. UIF recorded a cost of \$77,743 for PCF-40 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-40 by \$1,810.

41. PCF-41 UIF – Golden Hills Water Main Relocation

In its filing, UIF requested cost recovery to replace 1,350 linear feet of a WM and one fire hydrant located in the Golden Hills service territory. The locations of the WM and fire hydrant were in conflict with a Marion County stormwater improvement project and required relocation. The facilities were located within the Marion County right-of-way and needed to be relocated under the terms and conditions of the existing right-of-way permit.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$154,764. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$170,810, which included IDC and cap time. OPC witness Radigan did not address the Golden Hills Water Main Relocation project or the costs in his testimony. In response to discovery, the Utility indicated that due to the time constraint imposed by Marion County, only one bid was solicited totaling \$141,913. UIF also stated that the "contractor's unit prices were in line with similar recent project costs with a similar scope of work."

The Utility provided invoices for a total project cost of \$156,764. This total also contained additional work that was completed and is related to PCF-41, including the costs for a main tap and road boring, as well as engineering services. Witness Flynn testified that the Golden Hills Water Main Relocation project was completed in January 2020, and included a cost of \$12,918 for cap time. Based on the documentation provided by the UIF, as well as witness testimony, we find that \$169,682 (\$156,764 + \$12,918) is reasonable for the project. The Utility

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recorded a cost of \$170,810 for PCF-41 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-41 by \$1,128.

42. PCF-42 UIF – Little Wekiva Generator

UIF requested cost recovery for an emergency generator and automatic transfer switch at the Little Wekiva WTP. The Little Wekiva system is not interconnected with any other water supply source; therefore, the Utility had placed a portable generator at the WTP as an interim solution in the event of a power outage. However, the portable generator required personnel to manually start the generator on-site and then transfer the load. The new 40 kW generator has an automatic transfer switch and is adequately sized to start and run the treatment plant in the event of a power outage. The new generator also offers a diesel fuel tank capable of 72 hours of continuous run time under load, along with a weatherproof, sound-reducing enclosure.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$94,437. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$100,618, which included IDC and cap time. OPC witness Radigan did not address the Little Wekiva Generator project or the costs in his testimony. The Utility obtained bids from two contractors for the new generator, and the lowest bid of \$86,837 was selected.

In response to discovery, UIF provided invoices for the generator totaling \$86,837. Additionally, invoices for engineering services related to the design and installation of the generator were provided at a cost of \$7,600. Witness Flynn testified that the Little Wekiva Generator project was completed in June 2020, and included a cost of \$2,616 for cap time. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$97,053 (\$86,837 + \$7,600 + \$2,616) is reasonable for the project. UIF recorded a cost of \$100,256 for PCF-42 in its MFRs; therefore, we find an adjustment shall be made to decrease the cost of PCF-42 by \$3,203.

43. PCF-43 UIF – Park Ridge Generator

Similar to PCF-42, UIF requested cost recovery for an emergency generator and automatic transfer switch at the Park Ridge WTP. As with Little Wekiva, the Park Ridge system is not interconnected with any other water supply source, and there was no existing permanent generator on-site to provide back-up power. The new generator has an automatic transfer switch and is adequately sized to start and run the treatment plant in the event of a power outage. The new 60 kW generator also has a diesel fuel tank capable of 72 hours of continuous run time under load, along with a weatherproof, sound reducing enclosure.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$99,137. In UIF witness Flynn's rebuttal testimony, he provided an updated project cost of \$103,489, which included IDC and cap time. OPC witness Radigan did not address the Park Ridge Generator project or the costs in his testimony. Bids from two contractors at a cost of \$91,537 and \$79,615 were obtained for a 60 kW generator, and the Utility indicated that it had selected the same contractor that was selected for the Little Wekiva project, which provided the higher bid at a cost of \$91,537.

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In response to discovery, UIF provided invoices for the generator totaling \$91,537. Additionally, invoices for engineering services related to the design and installation of the generator were provided at a cost of \$7,600. Witness Flynn testified that the Park Ridge Generator project was completed in June 2020, and included a cost of \$1,491 for cap time. We agree with the engineering costs included for PCF-43 but do not believe that the Utility provided adequate justification for selecting the higher generator bid at a cost of \$91,537. Therefore, we find that the cost of the generator shall be limited to the cost of the lower bid at \$79,615. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$88,706 (\$79,615 + \$7,600 + \$1,491) is reasonable for the project. UIF recorded a cost of \$104,292 for PCF-43 in its MFRs; therefore, we find that an adjustment shall be made to decrease the cost of PCF-43 by \$15,586.

44. PCF-44 Ravenna Park I&I Remediation

UIF requested cost recovery for the video inspection of 11,600 linear feet of a gravity wastewater main and manholes in the Ravenna Park and Lincoln Heights systems. The project also incorporated the costs to remediate the identified pipe deficiencies by utilizing cured-in-place pipes, sectional liners, and open cut methods. Also included in this project were the costs for reinstating 87 service laterals, root removal, and restoring sections of the gravity main at several locations in the system.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$651,568. In UIF witness Flynn's rebuttal testimony, he testified that the project budget was expanded to \$853,310 as additional failed pipes had been identified which required replacement. Therefore, the total project cost was updated to \$876,921, which included IDC and cap time. OPC witness Radigan did not address the Ravenna Park I&I Remediation project or the costs in his testimony. Bids were obtained from four contractors for the digging and repair of the mains, and the contractor with the lowest bid of \$409,137 was selected. Three bids were also solicited for the linings, and the contractor with the lowest bid of \$199,133 was selected.

In response to discovery, the Utility provided invoices for the project totaling \$810,012. This total included three change orders for multiple repairs, cleanouts, and pipe replacements totaling \$201,471. Witness Flynn testified that the Ravenna Park I&I Remediation project was completed in December 2020, and included a cost of \$11,348 for cap time. Based on the documentation provided by UIF, as well as witness testimony, we find that \$821,360 (\$810,012 + \$11,348) is reasonable for the project. The Utility recorded a cost of \$678,829 for PCF-44 in its MFRs; therefore, we find that an adjustment shall be made to increase the cost of PCF-44 by \$142,531.

45. PCF-45 Weathersfield Northwestern Bridge Crossing

UIF requested cost recovery for the design, permitting, and bidding services related to replacement of a WM in coordination with a Seminole County's bridge replacement project. The project initially involved the design and permit for an interconnect assembly, construction of the interconnect assembly, and removal and temporarily capping of the WM on the Northwestern

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Avenue bridge. Once the bridge replacement project was completed, a new WM would be installed across the bridge.

In witness Flynn's rebuttal testimony, he testified that Seminole County had informed the Utility in November 2020 that demolition of the bridge would begin in January 2021. Therefore, UIF opted to construct a temporary aerial river crossing to maintain water service to its customers and would forego the interconnect with the City of Altamonte Springs. Witness Flynn testified that DEP had issued a construction permit for the temporary bypass, and the contractor would mobilize at the beginning of January 2021 to construct the bypass. Once the new bridge was completed, the contractor would install a WM attached to the bridge and the temporary bypass would be removed.

In UIF witness Flynn's direct testimony, the requested amount for this project was \$22,000. In UIF witness Flynn's rebuttal testimony, he updated the project cost to include the costs for the engineering services, construction of the temporary bypass, and construction of the new WM totaling \$147,054, including cap time and IDC. OPC witness Radigan testified that there were no plant addition costs associated with the Weathersfield Northwestern Bridge Crossing project. Instead this project was CWIP and should not be considered plant-in-service. Furthermore, witness Radigan stated that once the project was complete, "the expenditures to date will be added to the construction costs and the project could then be eligible for inclusion in the calculation of revenue requirement at some future time."

The engineering services for this project were sole sourced to Kimley-Horn at a cost of \$7,065 for the initial temporary interconnection, and then \$6,000 for the temporary aerial river crossing main. The Utility stated that it only solicited bids from Kimley-Horn for engineering services because of "their comprehensive knowledge and familiarity with the Utility's system, facilities, processes, and requirements and at a quoted amount commensurate with similar previous work product." Additionally, the amount fell below the \$75,000 threshold that UIF utilizes for soliciting multiple bids. As referenced in project PCF-1, the Utility stated this policy has been an accepted practice in previous UIF rate cases.

A bid was also provided from a contractor at a cost of \$127,101 for the construction of the bridge bypass and reconnection of the WM once the bridge project was completed. The Utility stated that the construction portion of the project was sole sourced to the contractor due to the time constraints imposed by Seminole County. The change in schedule had required UIF to change the project scope and design, as well as re-evaluate the timing of the project. This had required the Utility to promptly design a solution to meet the County's schedule, obtain a DEP construction permit, and prepare for the construction of the temporary bypass.

In response to discovery, UIF provided invoices for the engineering services totaling \$12,005. Witness Flynn identified that the Weathersfield Northwestern Bridge Crossing project would be completed in August 2021, and projected a cost of \$1,140 for cap time. Regarding the concerns raised by witness Radigan, plant additions associated with PCF-45 were included in witness Flynn's rebuttal testimony, as well as documents supporting the plant additions and timing. Based on the documentation provided by the Utility, as well as witness testimony, we find that \$140,246 (\$127,101 + \$12,005, + \$1,140) is reasonable for the project. UIF recorded a

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cost of \$22,000 for PCF-45 in its MFRs; therefore, we find an adjustment shall be made to increase the cost of PCF-45 by \$118,246.

C. Conclusion

Pro forma plant additions shall be decreased by \$150,054 for water and \$1,276,038 for wastewater. Corresponding adjustments shall also be made to decrease accumulated depreciation and depreciation expense by \$1,861 for water and \$67,329 for wastewater. Additionally, property taxes shall be decreased by \$2,328 for water and \$7,778 for wastewater. Adjustments to pro forma plant retirements shall be made as set forth below in Section IV.

IV. Plant Retirements

A. Parties' Arguments

1. UIF

UIF stated that adjustments for plant retirements should be made based on the approved amounts for pro forma projects which were discussed in Section III.

2. OPC

OPC argued that pro forma projects PCF-14, PCF-17, PCF-18, PCF-23, PCF-28 and PCF-33 should be disallowed. OPC also stated that the appropriate plant retirements should be tied to pro forma projects that are approved by this Commission in Section III.

B. Analysis

In its initial filing, UIF reflected pro forma retirements to plant and accumulated depreciation of \$679,801 for water and \$8,212,442 for wastewater. The Utility also identified contributed plant included in the pro forma retirements and included adjustments to retire associated contributions in aid of construction (CIAC) in the amount of \$87,827 for water and \$753,220 for wastewater.

For its pro forma plant retirements, UIF stated the Handy Whitman Index was utilized to determine the retirement percentages for the pro forma projects in this proceeding. The current project cost was multiplied by the retirement percentages to calculate the retirement amount. OPC witness Crane did not dispute this method for determining the pro forma retirements in her testimony. Instead, OPC witness Crane testified that for each pro forma project that OPC witness Radigan identified for exclusion in his testimony, a retirement was not needed. UIF witness Crane stated that for those identified projects, retirements should not be made "since those retirements would presumably not take place until and unless the associated plant addition is completed and placed into service."

Taking into account the supporting documentation provided by the Utility and considering that OPC did not object to the methodology used, we find that UIF's utilization of

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the Handy Whitman Index to determine plant retirements is reasonable. We applied the retirement percentages from the Handy Whitman Index to our approved pro forma project costs, as discussed in Section III, to determine the appropriate plant retirements. Table 3 summarizes our adjustments to the pro forma plant retirements. In fact, if the original cost of retired plant is not known, but the year it is placed into service is known, the Handy Whitman Index has been approved by this Commission to determine the appropriate retirement percentage to apply to the cost of the replaced plant.²⁴

Table 3
 Pro Forma Plant Addition Retirements-Water

System	MFR – Pro Forma Plant Retirement	Commission Approved – Pro Forma Plant Retirement
PCF-2 Eagle Ridge - Wastewater	\$39,190	\$32,211
PCF-5 Eagle Ridge - Wastewater	\$247,401	\$211,230
PCF-10 LUSI - Water	\$27,307	\$24,714
PCF-12 LUSI - Wastewater	\$23,024	\$21,774
PCF-14 Mid-County - Wastewater	\$606,625	\$722,016
PCF-17 Mid-County - Wastewater	\$1,558,186	\$1,240,605
PCF-18 Mid-County - Wastewater	\$20,063	\$19,973
PCF-19 Pennbrooke - Wastewater	\$17,396	\$14,981
PCF-22 Sanlando - Water	\$21,781	\$21,948
PCF-22 Sanlando - Wastewater	\$2,876,520	\$3,052,611
PCF-23 Sanlando - Wastewater	\$1,406,998	\$1,416,631
PCF-24 Sanlando - Water	\$36,560	\$36,560
PCF-25 Sanlando - Water	\$354,033	\$382,828
PCF-25 Sanlando - Wastewater	\$691,829	\$685,241
PCF-28 Sanlando - Water	\$71,685	\$23,891
PCF-28 Sanlando - Wastewater	\$39,777	\$119,310
PCF-29 Sanlando - Wastewater	\$211,628	\$204,635
PCF-33 Tierra Verde - Wastewater	\$168,170	\$165,565
PCF-34 Tierra Verde - Wastewater	\$301,553	\$336,282
PCF-35 Buena Vista - Water	\$46,408	\$47,694
PCF-36 Orangewood - Water	\$63,394	\$66,955
PCF-40 Golden Hills - Water	\$16,142	\$16,176
PCF-41 Golden Hills - Water	\$33,309	\$33,739
PCF-45 Weathersfield - Water	\$4,735	\$29,939

²⁴ Order Nos. PSC-04-0363-PAA-SU, p. 11, issued April 5, 2004, in Docket No. 020408-SU, *In re: Application for rate increase in Seminole County by Alafaya Utilities, Inc.*; PSC-00-1528-PAA-WU, p. 9, issue August 23, 2000, in Docket No. 991437-WU, *In re: Application for increase in water rates in Orange County by Wedgefield Utilities, Inc.*; PSC-2017-0209-PAA-WU, issued May 30, 2017, in Docket No. 20160065-WU, *In re: Application for increase in water rates in Charlotte County by Bocilla Utilities, Inc.*; and PSC-2016-0169-PAA-WU, issued April 28, 2016, in Docket No. 20150166-WU, *In re: Application for transfer of water system and Certificate No. 654-W in Lake County from Black Bear Reserve Water Corporation to Black Bear Waterworks, Inc.*

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Based on our approved pro forma plant retirements, CIAC retirements shall be \$40,067 for water and \$858,004 for wastewater. To reflect our approved retirements, plant and accumulated depreciation shall be decreased by \$9,090 for water and \$34,706 for wastewater. CIAC and accumulated amortization of CIAC shall be increased by \$23,857 for water and decreased by \$104,784 for wastewater.

Additionally, UIF's initial filing reflected corresponding adjustments to remove depreciation expense and CIAC amortization associated with its proposed pro forma retirements. The Utility decreased depreciation expense by \$19,921 for water and \$397,889 for wastewater. It also decreased CIAC amortization by \$2,042 for water and \$42,818 for wastewater. Using Rule 25-30.140, F.A.C., we recalculated the corresponding adjustments to depreciation expense and CIAC amortization. Based on the approved pro forma retirements discussed above, depreciation expense shall be increased by \$976 for water and \$1,657 for wastewater. CIAC amortization shall be increased by \$1,111 for water and \$14,061 for wastewater. Although our approved retirements result in further reductions to plant, accumulated depreciation, wastewater CIAC, and wastewater accumulated amortization of CIAC, the corresponding adjustments to depreciation expense and wastewater CIAC amortization are an increase due to errors in UIF's calculation of its proposed adjustments to these components, causing them to be overstated.

C. Conclusion

We hereby approve plant retirements associated with pro forma additions in the amount of \$688,891 for water and \$8,247,148 for wastewater. As such, plant and accumulated depreciation shall be decreased by \$9,090 for water and \$34,706 for wastewater, along with the following corresponding adjustments. CIAC and accumulated amortization of CIAC shall be increased by \$976 for water and \$1,657 for wastewater. CIAC amortization shall be increased by \$1,111 for water and \$14,061 for wastewater.

V. STIPULATED—Excessive Unaccounted for Water

We approved a Type II stipulation addressing whether any water systems have excessive unaccounted for water and, if so, what systems and what adjustments are necessary, as follows:

Lake Placid – 10.00%; LUSI (Four Lakes) – 1.90%; Golden Hills – 8.80%; Sanlando 2.10% and Little Wekiva 5.50%. Adjustments shall be made to purchased power, chemicals and purchased water/wastewater as appropriate.

VI. STIPULATED—Excessive Infiltration and Inflow

We approved a Type II stipulation addressing whether any wastewater systems have excessive infiltration and/or inflow and, if so, what systems and what adjustments are necessary, as follows:

Summertree – 2.14%; Orangewood – 5.72% and Ravenna Park – 11.25%. Adjustments should be made to purchased power, chemicals and purchased water/wastewater as appropriate.

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VII. STIPULATED—Used and Useful (U&U) for Water Treatment

We approved a Type II stipulation addressing what the appropriate used and useful percentages for the water treatment and related facilities of each water system are, as follows:

All water treatment and related facilities are 100% used and useful.

VIII. STIPULATED—Used and Useful for Water Storage

We approved a Type II stipulation addressing what the appropriate used and useful percentages for the water storage and related facilities of each water system are, as follows:

All water storage and related facilities are 100% used and useful.

IX. Used and Useful for Wastewater Treatment

A. Parties' Arguments

1. UIF

With respect to Mid-County, UIF argued that OPC witness Radigan assumed that 2019 being a wet year is an anomaly, but data shows that heavy rainfall is common. UIF contended that UIF witness Seidman demonstrated that witness Radigan did not understand the consideration of I&I when calculating U&U, and that witness Radigan appeared to be in agreement with witness Seidman's calculations. UIF maintained that the Mid-County WWTP is clearly fully utilized and should be considered 100 percent U&U.

Regarding Labrador, UIF argued that the developer of the parcel that prevented a built out determination in the last rate case has signed an agreement with UIF that establishes that the parcel will be built to its full potential within the next five years. UIF affirmed that UIF witness Seidman rejected as unprecedented OPC witness Radigan's suggestion that this Commission should consider land outside of the certificated territory to determine U&U. UIF maintained that the plant is properly sized to serve the community and that the Labrador service area is built out. Therefore, UIF attested that the Labrador WWTP should be considered 100 percent U&U.

As it relates to Lake Placid, UIF argued that the system is built out due to a portion of the service area, originally intended for future development, being designated as a protected scrub jay habitat after construction, permanently eliminating future customer growth in that area. UIF asserted that we recognized that the system was built out in 1996 due to these environmental limitations. UIF contended that assigning the Lake Placid system the calculated WWTP U&U value severely hampers UIF's ability to earn on the improvements necessary to maintain the plant. Therefore, UIF maintained that the Lake Placid WWTP should be considered 100 percent U&U.

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With respect to LUSI Lake Groves, UIF contended that UIF witness Seidman addressed OPC witness Radigan's conclusion that the U&U for this system was overstated due to inclusion of future prepaid lots resulting in double counting. However, UIF asserted that following witness Radigan's criticisms, witness Seidman revised the U&U calculation for LUSI Lake Groves to account for the five percent per year growth limit for equivalent residential connections (ERCs) as required under Section 367.081(2)(a)2.b., F.S. With this revision, UIF contended that the LUSI Lake Groves WWTP should be considered 70 percent U&U. UIF averred that all other WWTP are 100 percent U&U.

2. OPC

OPC noted that the parties agree on the U&U percentage for UIF-Marion, but disagree with respect to Mid-County, Labrador, Lake Placid, and LUSI Lake Groves. With regard to Mid-County, OPC acknowledged that using test year flows results in a U&U over 100 percent for Mid-County, but argues that the system's test year flows were unusually high. OPC asserted that UIF witness Seidman acknowledged that the test year was a very wet year, and that UIF also indicated that "this facility had regulatory violations in 2019 related to excess I&I" as justification for certain pro forma projects for Mid-County. OPC argued that Mid-County should not be rewarded with a higher U&U nor punished with a lower U&U because rainfall did or did not favor the system in a particular year. OPC opined that we should evaluate average flows for Mid-County and use that data to calculate U&U, and that the WWTP U&U should remain at 93.67 percent, as set in the last rate case, until that is accomplished.

With respect to Labrador, OPC argued that UIF lacks sufficient proof with regard to the timing of completion of the parcel that is now being developed that prevented a built out determination for Labrador in the last rate case. Therefore, OPC asserted that UIF failed to support its claim, and that the WWTP U&U should remain at 79.94 percent as set in the previous rate case.

Regarding Lake Placid, OPC noted that although UIF mentioned that the system was determined to be built out in 1996 by this Commission, UIF failed to mention that in the 2016 rate case, and we agreed with OPC that the U&U for Lake Placid was 29.79 percent. OPC asserted that UIF made the same arguments about environmental regulation in that rate case, and that we rejected this due to the argument not being any different from the one made previously.²⁵ OPC argued that UIF has not presented any evidence that is any different than what was provided in the 2016 rate case, and that the WWTP U&U for Lake Placid should remain at 29.79 percent as set in that case.

Concerning LUSI Lake Groves, OPC noted that in the last rate case, we revised the U&U calculation for the system to remove prepaid connections as capacity devoted to prepaid connections does not qualify as property used and useful in the public service under Section 367.081(2)(a)2.b., F.S. Since the system has growth, OPC asserted that the WWTP U&U for LUSI Lake Groves is 65 percent.

²⁵ Order No. PSC-2017-0361-FOF-WS, pp. 93, 97.

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B. Analysis

Rules 25-30.431 and 25-30.432, F.A.C., is followed for evaluation of WWTP U&U. The rules set forth provisions for flow data and capacity to be used in the equation, and other factors for consideration such as I&I, growth, the extent to which the service area is built out, and decrease in flow due to conservation or reduction in customers.

1. U&U for WWTP

Table 4 is a summary of the WWTP U&U percentages as proposed by UIF and OPC, along with our approved values for UIF’s wastewater systems. As shown, OPC did not dispute UIF’s WWTP U&U values for Cypress Lakes, Eagle Ridge, Pennbrooke, Sandalhaven-Transmission, and Sanlando. As we previously determined the WWTP U&U to be 100 percent for these systems, and there is no dispute regarding the flow data, capacity, and other factors for consideration pursuant to Rules 25-30.431 and 25-30.432, F.A.C., for these systems. We find that the WWTP U&U for these systems is 100 percent.

Table 4
 UIF, OPC, and Commission Approved WWTP U&U Percent Value

WWTP System	UIF	OPC	Commission Approved
Cypress Lakes	100.00	No Dispute	100.00
Eagle Ridge	100.00	No Dispute	100.00
Labrador	100.00	79.94	100.00
Lake Placid	100.00	29.79	29.79
LUSI Barrington	100.00	No Dispute	100.00
LUSI Lake Groves	70.00	65.00	65.00
Mid-County	100.00	93.67	100.00
Pennbrooke	100.00	No Dispute	100.00
Sandalhaven-EWD	51.62	No Dispute	42.24
Sandalhaven-Transmission	100.00	No Dispute	100.00
Sanlando	100.00	No Dispute	100.00
UIF-Marion	78.44	No Dispute	74.78

Regarding the WWTP U&U of the three remaining systems that OPC does not dispute, LUSI Barrington, Sandalhaven-EWD, and UIF-Marion, we find the following. For LUSI Barrington, U&U values have not previously been established as this system was acquired by UIF in 2019.²⁶ UIF requested that the WWTP be considered 100 percent U&U for this system. We have reviewed the documentation provided for this system, and as the LUSI Barrington WWTP is serving all of the lots in its service area, thus using the WWTP to its current full

²⁶ Order No. PSC-2019-0071-PAA-SU, issued on February 25, 2019, in Docket No. 20170174-SU, *In re: Application for transfer of assets of exempt utility, amendment of Certificate No. 465-S, and petition for partial variance or waiver of Rule 25-30.030(5)(b), F.A.C., by Utilities, Inc. of Florida.*

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potential, we find that this system is built out. Therefore, we find that the LUSI Barrington WWTP is 100 percent U&U.

With respect to Sandalhaven-EWD, UIF requested that the WWTP U&U be considered 51.62 percent for this system. UIF calculated this value by imputing flows in addition to the 2019 test year flows in order to achieve flows experienced by the system in 2010. UIF explained that this was done because this Commission typically defaults to a U&U based on higher flows experienced in previous test years so as not to penalize a utility for providing capacity previously needed. While it is true that we do typically default to the previously approved U&U if the updated U&U calculation is lower, this is not done by inserting a previous test year's flow data in the calculation with the current test year's values, but by simply defaulting to the previously approved U&U. With that being said, we reevaluated the WWTP U&U for Sandalhaven-EWD, removing the additional flows associated with the 2010 test year and only accounting for the 2019 test year flows. This resulted in a WWTP U&U of 36.97 percent. As the WWTP U&U approved in the last rate case was 42.24 percent, we find that the WWTP U&U for Sandalhaven-EWD is 42.24 percent as is Commission practice.

As it refers to UIF-Marion, UIF and OPC agreed that the WWTP U&U for this system should be considered 78.44 percent. However, upon reviewing the provided documentation, we found that UIF used a simple average growth calculation due to a weak coefficient of determination instead of the traditional five-year growth per the regression equation as required by Rule 25-30.431(2)(b)-(c), F.A.C.²⁷ We are not aware of any cases where the regression equation was not used to calculate the five-year growth. Therefore, we reevaluated the WWTP U&U for UIF-Marion using the traditional five-year growth per the regression equation. This resulted in a WWTP U&U of 74.78 percent, which is our finding for the WWTP U&U for UIF-Marion. Of the remaining four systems in dispute, the differences can be attributed to the treatment of built out status, prepaid connections, and excessive test year flows.

a. System Built Out Status

UIF's position that the Labrador WWTP is 100 percent U&U is based on the contention that the 11.6 acre parcel that prevented a built out determination in the last rate case is now being developed for 36 manufactured homes which will use the whole parcel. OPC witness Radigan argued that it is an assumption that the vacant area will be built out as it has not occurred yet. Witness Radigan further argued that there is land adjacent to Labrador's service area and that Labrador could expand its service area to serve new customers. Thus, witness Radigan recommended that Labrador maintain the 79.94 percent U&U approved in the last rate case.

In response to discovery, UIF provided a signed agreement with the developer to support the claim that the parcel is being developed. UIF also provided an email from the developer stating that approximately seven lots per year could be expected to be developed over the next five years. In addition, UIF indicated that the parcel has already been cleared, and that construction of the underground water and sewer infrastructure was to begin in January 2021 or

²⁷ The coefficient of determination is the R squared value which describes how good of a fit the linear regression curve is to the variability of historic ERC growth.

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sooner. With regard to the service area, Labrador does not currently have any vacant lots, and there is only one lot it is unable to serve due to the lot being used for a park. We are not aware of any cases where we considered land outside of a utility's certificated service territory as part of its U&U consideration and thus, we do not believe that is appropriate. Therefore, because UIF has presented evidence that the parcel is being developed, and all lots capable of being served in Labrador's service territory are being served, we agree with UIF and hereby find that the Labrador WWTP is 100 percent U&U.

UIF's position that the Lake Placid WWTP is 100 percent U&U was initially based on the Utility's claim that growth was negative. Following a correction to Schedule F-10, growth was no longer negative for this system. OPC witness Radigan argued that UIF gave no firm evidence that the system is actually built out to use the design capacity of the plant, and that UIF indicated that there are still vacant lots in the service area in response to discovery. In his rebuttal, UIF witness Seidman expanded UIF's argument to include that the system is built out because of the designated scrub jay habitat located within the service area which has prevented customer growth. Witness Seidman further argued that we recognized Lake Placid's built out status due to environmental limitations in the 1996 rate case order (1996 Order).²⁸

We reviewed the 1996 Order referenced by UIF, discovery responses, and the calculated WWTP U&U for Lake Placid. With respect to the 1996 Order, we found that the water distribution and wastewater collection systems were built out. We did not make a similar finding for the WWTP in the 1996 Order. In response to discovery, UIF indicated that there were 12 vacant lots in the Lake Placid service area, but also indicated that these lots were not located in the protected scrub jay habitat. The calculated WWTP U&U for Lake Placid was 15.83 percent. Because UIF has not provided evidence that the built out argument for Lake Placid is any different than that considered by us in previous orders, we agree with OPC and hereby find that the Lake Placid WWTP is 29.79 percent U&U, as approved in the last rate case.

b. Prepaid Connections

UIF requested that the LUSI Lake Groves WWTP be considered 70 percent U&U which includes future prepaid connections, as well as consideration of the five percent per year growth limit for ERCs as mandated by the statute. UIF argued that 967 prepaid lots had not been connected at the end of 2019; therefore, the regression analyses did not accurately reflect new growth. UIF stated that LUSI Lake Groves averaged 30 new taps per month in 2020, which is consistent with the past year's growth. Thus, UIF updated its growth calculation to account for future prepaid connections.

OPC witness Radigan argued that UIF's addition of prepaid connections on top of historic growth results in double counting, and recommended that the prepaid connections be removed. This resulted in a recommendation of 65 percent WWTP U&U for LUSI Lake Groves by OPC. UIF witness Seidman rebutted this argument by indicating that the additional

²⁸ Order No. PSC 96-0910-FOF-WS, issued July 15, 1996, in Docket No. 951027-WS, *In re: Application for a rate increase in Highland County by Lake Placid Utilities, Inc.*

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connections are from a new area that had not previously been served; therefore, these connections could not result in double counting as they were not connected during the test year.

Prepaid connections for LUSI Lake Groves had been specifically disallowed in the amended order following the appeal in the last rate case because these connections did not qualify as property that was used and useful in the public service, as required under Section 367.081(2)(a)2.b., F.S.²⁹ For property to be considered used and useful in the public service under the statute, it must be shown to be “needed to serve customers five years after the end of the test year.” As in that case, UIF has not provided evidence that these prepaid connections will be made within the next five years. Therefore, we removed these future prepaid connections and reevaluated the WWTP U&U. This resulted in a WWTP U&U of 65 percent which is our finding for the LUSI Lake Groves WWTP, consistent with OPC’s recommendation.

c. Excessive Test Year Flows

While the UIF WWTP U&U calculation for Mid-County was 105.42 percent, OPC witness Radigan argued that high test year flows and I&I are the reason for this calculation. Witness Radigan opined that in dry years, the U&U equation would unreasonably penalize a utility, and in wet years, it would reward a utility. He recommended that we consider and adjust the WWTP U&U calculation for the effects of I&I for Mid-County, and that until this was done, Mid-County’s WWTP U&U should remain at 93.67 percent as approved in the last rate case.

UIF witness Seidman rebutted OPC witness Radigan’s argument by stating that experiencing high flows is not uncommon for the Mid-County system, and that we already consider the impact of I&I and have done so for many years. Witness Seidman argued that his analysis shows that Mid-County’s I&I is not excessive for the test year, and that witness Radigan has reviewed and agreed with witness Seidman’s calculations. Thus, witness Seidman concluded that the Mid-County WWTP is clearly fully utilized and should be considered 100 percent U&U.

We agree with UIF and note that I&I has been and continues to be considered in the calculation of WWTP U&U. We have reviewed the documentation provided for Mid-County and as stated by UIF witness Seidman, Mid-County does not have any excessive I&I for the test year, regardless of the high test year flows experienced by the system as contemplated by OPC witness Radigan. Therefore, we agree with UIF and hereby find that the Mid-County WWTP is 100 percent U&U.

C. Conclusion

In its filing, UIF made non-U&U adjustments to decrease rate base by \$928,928, depreciation expense by \$83,244, and property tax expense by \$21,302. The appropriate used and useful percentages for UIF’s wastewater systems are shown in the table below. To reflect the appropriate non-U&U percentages applied to all components of rate base, we find that a further decrease of \$284,620 to rate base, \$28,459 to depreciation expense, and \$9,743 to property tax expense shall be made.

²⁹ Order No. PSC-2019-0363-PAA-WS.

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Table 5
 Appropriate Used and Useful Percentages for UIF’s Wastewater Systems

System	Facilities	U&U (Percent)
Cypress Lakes	WWTP	100.00
Eagle Ridge	WWTP	100.00
Labrador	WWTP	100.00
Lake Placid	WWTP	29.79
LUSI Barrington	WWTP	100.00
LUSI Lake Groves	WWTP	65.00
Mid-County	WWTP	100.00
Pennbrooke	WWTP	100.00
Sandalhaven	EWD Capacity	42.24
Sandalhaven	Transmission	100.00
Sanlando	WWTP	100.00
UIF-Marion	WWTP	74.78

X. STIPULATED—Used and Useful for Water Distribution

We approved a Type II Stipulation addressing what are the appropriate U&U percentages for the water distribution and related facilities of each water system, as follows:

All water distribution and related facilities are 100% used and useful.

XI. STIPULATED—Used and Useful for Collection Lines

We approved a Type II Stipulation addressing what the appropriate U&U percentages are for the collection lines and related facilities of each wastewater system, as follows:

All collection lines are 100% used and useful.

XII. Test Year Accumulated Depreciation Adjustments

A. Parties’ Arguments

1. UIF

In its brief, the Utility stated that the adjustments to test year accumulated depreciation were due to the allocation of common plant between water and wastewater and to correct the over-amortization of Sandalhaven intangible plant. In addition, UIF made adjustments to annualize accumulated depreciation for test year additions. The Utility asserted that OPC did not dispute any test year changes.

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2. OPC

In its brief, OPC discussed adjustments related to pro forma plant projects; these are discussed in Section III.

B. Analysis

UIF witness Swain made test year adjustments to the accumulated depreciation balance to correct the allocation of common plant between water and wastewater and to correct the over-amortization of Sandalhaven intangible plant. The Utility also made adjustments to annualize accumulated depreciation for test year plant additions. Although it addressed adjustments corresponding to pro forma plant, OPC did not dispute these adjustments. Further, Commission staff witness Dobiac's testimony did not reflect any audit adjustments to the test year accumulated depreciation balances.

C. Conclusion

Based on the above, we hereby find no further adjustments are appropriate to the adjusted test year accumulated depreciation balances. All necessary adjustments to accumulated depreciation associated with pro forma additions shall be made as set forth and discussed in Sections III and IV above.

XIII. Test Year CIAC Adjustments

A. Parties' Arguments

1. UIF

In its brief, UIF stated this issue is a fall out from the determination of Section III.

2. OPC

In its brief, OPC discussed adjustments related to pro forma retirements; these are discussed in Section IV. OPC maintained that these adjustments should be made to adjust the CIAC balance for projected plant retirements based on its recommended adjustments to pro forma plant.

B. Analysis

In its initial filing, the Utility's only adjustments to CIAC are retirements associated with certain pro forma plant projects. Further, Commission staff witness Dobiac's testimony did not reflect any audit adjustments to test year CIAC balances. Pro forma adjustments to accumulated amortization of CIAC are addressed in Section IV.

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C. Conclusion

Based on the above, we hereby find no further adjustments are appropriate to the adjusted test year CIAC balances. All necessary adjustments to CIAC associated with pro forma additions shall be made as set forth and discussed in Section IV above.

XIV. Test Year Accumulated Amortization of CIAC Adjustments

A. Parties' Arguments

1. UIF

In its brief, UIF stated that this is a fallout from the determination of Section III.

2. OPC

In its brief, OPC stated adjustments should be made consistent with the adjustment of CIAC balances discussed in Section XIII.

B. Analysis

In its initial filing, the Utility's only test year adjustment to the accumulated amortization of CIAC balance was to correct the over amortization of CIAC. This adjustment was made to the same three systems in UIF's last rate case.³⁰ Further, Commission staff witness Dobiac's testimony did not reflect any adjustments to test year accumulated amortization of CIAC balances. The remaining adjustments to accumulated amortization of CIAC in UIF's initial filing are related to retirements associated with pro forma plant projects.

C. Conclusion

Based on the above, we hereby approve no further adjustments to the adjusted test year accumulated amortization of CIAC balances. All necessary adjustments to accumulated amortization of CIAC associated with pro forma additions shall be made as set forth and discussed in Section IV.

XV. DROPPED³¹

³⁰ Order No. PSC-2017-0361-FOF-WS, issued September 25, 2017, in Docket No. 20160101-WS, *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*

³¹ The parties agreed to drop this issue prior to the prehearing.

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XVI. Working Capital Allowance

A. Parties' Arguments

1. UIF

In its brief, UIF stated that the presumed cash balance included in working capital is a reasonable substitute for actual intercompany receivables and payables. The cash balance of 2 percent of rate base proposed by UIF witness Swain was based upon the ratio of allowed cash to gross plant allowed in our prior cases. Witness Swain explained that UIF could have included the full intercompany receivable and payable balances in working capital since they meet the requirements of inclusion in working capital, as they are not interest bearing, and not otherwise included in rate base. Instead, UIF proposed a more conservative approach by estimating what it presumed to be a reasonable cash balance. Lastly, UIF stated in its brief that it should be clear that for a company the size of UIF, with substantial ongoing capital projects, that a reasonable cash requirement would be greater than the \$3,000 of petty cash currently included on UIF's books.

UIF also stated in its brief that the studies related to pro forma projects should be included as adjustments to working capital. Further, UIF maintained that OPC witness Crane's recommendation to remove the studies from working capital and classify the studies as CWIP is not consistent with our practice. UIF stated that in its last rate case, all pro forma studies were included in rate base after adjustments to update costs, with OPC agreeing to the accounting treatment.³² UIF witness Flynn suggested that another alternative to including the studies in working capital would be to amortize the expense over a reasonable time frame, such as five years.

2. OPC

In its brief, OPC asserted that UIF failed to meet its burden to support its requested level of cash, specifically how its requested level of cash is necessary for the provision of safe and reliable utility service. While acknowledging cash can be a component in determining rate base, OPC witness Crane also specified that a valid basis is necessary for supporting the level of cash. OPC further argued that the two Commission orders UIF used to develop its imputed cash value are not applicable, as this Commission did not use a ratio of gross plant as a methodology for deciding the appropriate level of cash. OPC maintained that the estimate UIF proposed in this case is arbitrary and not reasonably related to the company's day-to-day operational requirements.

B. Analysis

Rule 25-30.433(2), F.A.C., requires that Class A Utilities use the balance sheet method to calculate the working capital allowance. In its MFRs, UIF requested a total working capital

³² Order No. PSC-2017-0361-FOF-WS.

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allowance of \$4,151,132 for water and \$5,551,167 for wastewater. We hereby find that additional adjustments are necessary.

1. Imputed Cash Balance

In her direct testimony, UIF witness Swain stated that UIF does not maintain its own unique bank accounts, but instead records cash transactions through intercompany accounts. Witness Swain stated that the overall magnitude of the balance in these accounts as compared to rate base was very large and that she was not able to isolate a specific account that would be appropriate to include in working capital. As an alternative, she reviewed other utilities and cases to develop a presumed cash balance. To derive the presumed cash value, witness Swain used the Commission-approved cash and rate base balances from KW Resorts Utilities Corp.'s (KWRU) 2015 and 2017 rate cases to calculate a percentage representing the ratio of working capital to rate base.³³ In the KWRU 2015 rate case, the cash balance represented approximately two percent of approved rate base, and in the KWRU 2017 rate case, the cash balance represented approximately 1.65 percent of approved rate base. Based on those percentages of gross plant, witness Swain made an adjustment to impute UIF's cash balance based on two percent of requested rate base, resulting in a pro forma increase of \$2,355,199 and \$3,061,123 to water and wastewater working capital, respectively.

OPC witness Crane recommended completely removing the Utility's adjustment to its cash balance. In her direct testimony, she outlined several reasons to support her assertion that UIF has not demonstrated a valid basis or need for the level of cash requested, specifically as it pertains to the provision of safe and reliable utility service. She first highlighted and questioned the applicability of the KWRU rate cases due to the large difference in levels of actual cash maintained by the two utilities, with KWRU reflecting a cash balance of nearly \$900,000 in its 2017 Rate Case prior to us approving nearly a third of that amount. Witness Crane also expressed her concern with witness Swain's inability to identify specific intercompany accounts to attribute to working capital, though she relied on the accounts as a basis to impute presumed cash. She further stated that the total balance of working capital allowances for water and wastewater, excluding the Utility's adjustments to cash, are in line with the Commission-approved balances, \$1,130,422 for water and \$3,030,342 for wastewater, from UIF's last rate case.

In response to witness Crane, witness Swain stated that under the balance sheet method of working capital, the entire net balance of intercompany accounts is eligible for inclusion in working capital, as it is not interest bearing or included in rate base or capital structure. She explained that she proposed her methodology to develop a reasonable cash balance in lieu of the large intercompany account balances and chose the KWRU rate cases because we considered and determined the appropriate level of cash in both cases. Witness Swain also pointed out that the working capital balances approved in UIF's last case are comparable because they did not include a cash balance or intercompany accounts as well.

³³ Order No. PSC-17-0091-FOF-SU, issued March 13, 2017, in Docket No. 150071-SU, *In re: Application for increase in wastewater rates in Monroe County by K W Resort Utilities Corp.*; Order No. PSC-2018-0446-FOF-SU, issued September 4, 2018, in Docket No. 20170141-SU, *In re: Application for increase in wastewater rates in Monroe County by K W Resort Utilities Corp.*

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We agree with OPC and hereby find that removing the Utility's adjustment to increase cash in working capital. In so finding, "it is the [Commission's] prerogative to evaluate the testimony of competing experts and accord whatever weight to the conflicting opinions it deems necessary."³⁴ Ultimately, it is a utility's burden of proof to support its requested rate increase before this Commission.³⁵ UIF has not provided a sound basis for imputing its requested cash balance, or a sound basis for the methodology it proposed.

In regards to the Utility's proposed methodology, the KWRU rate cases used by witness Swain to derive a cash value are not applicable to this case. In the KWRU 2015 rate case, there was one specific adjustment to cash to reflect a more recent 13-month average cash balance for the Utility, as the test year represented an anomaly.³⁶ In the KWRU 2017 rate case, the cash balance was adjusted to equal the balance in the previous rate case. However, this adjustment was made after we identified a specific account lending to the excessive balance that was more representative of capital expenditures, not day-to-day operations. Upon consideration of the remaining balance left after excluding the account, we decided it was reasonable to hold the balance to the amount approved in the previous case. We did not use any percent of rate base to determine a reasonable level of cash for either of these cases.³⁷ Witness Swain's methodology does not line up with our basis for making adjustments in either case. Nor did she provide any further support for using KWRU as a proxy to develop the level of cash to impute for UIF. Thus, we hereby find that using two percent of rate base is an arbitrary methodology.

When asked if she thought the ratio of cash to rate base was an appropriate indicator to derive a presumed cash balance, witness Crane stated she did not think a ratio of cash to rate base was appropriate, and that a ratio of operating expenses would be more appropriate. As further explained by witness Crane, working capital represents the short-term liabilities and assets that are needed to operate. In the KWRU 2017 rate case, we agreed that the working capital allowance should reflect day-to-day operations. This concept is further supported by Rule 25-30.433(2), F.A.C., which requires Class B and C utilities to use the formula method to calculate working capital by taking one eighth of operation and maintenance (O&M) expense. When asked to explain how the ratio of cash to total rate base was an appropriate indicator of an appropriate level of cash, the Utility brought up the fact that other components of working capital can be allocated between water and wastewater based on various factors that include gross plant. Although that is true, deriving an allocation of a known value in working capital is not comparable to estimating the appropriate level of a component of working capital.

When asked if the Utility considered other alternatives to calculate a presumed cash balance, witness Swain stated that it considered including the net balance of all intercompany receivables and payables in their entirety. UIF's initial basis for making an adjustment to increase cash in working capital stems from the Utility's intercompany accounts that are used for cash transactions in lieu of specific bank accounts and therefore not reflected in its cash balance. However, the details provided about the intercompany accounts were sparse and not entirely

³⁴ See *Gulf Power Co. v. FPSC*, 453 So. 2d 799, 805 (Fla. 1984).

³⁵ See *Florida Power Corp. v. Cresse*, 412 So. 2d 1187 (Fla. 1982).

³⁶ Order No. PSC-17-0091-FOF-SU.

³⁷ Order No. PSC-2018-0446-FOF-SU.

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clear. This made it difficult to assess the Utility's original request and basis for imputing cash, as well as to evaluate the reasonableness of the requested level of cash. Of the various accounts that comprise the net balance, specific account detail was not available for the Utility's witness to determine if a particular intercompany receivable or payable could be included in the working capital calculation prior to developing her alternative methodology. The balances were characterized as significant in size. However, in response to our staff's discovery requests, the Utility never quantified or provided support for the accounts. One of the responses stated that "it is not possible to determine the amount of cash included in the intercompany accounts. Over many years the intercompany accounts have been used to record obligations to and from the related companies." Other discovery responses stated that the accounts are only representative of UIF transactions.

UIF maintained that the accounts are not interest bearing or reflected in rate base or capital structure, thus making them eligible to be included in working capital under the balance sheet method. The lack of clear detail and support documentation provided in relation to the accounts made it difficult to evaluate the Utility's original request, much less support the inclusion of the entire balance. Further, even if we were able to ascertain the magnitude of the net balance, the level of the balance would still be evaluated and subject to adjustments, just as we did in the KWRU rate cases cited. While the Utility's proposal is not altogether unreasonable, it ultimately failed to support its request. As such, we hereby approve a decrease in working capital of \$2,355,199 for water and \$3,061,123 for wastewater to remove the Utility's requested presumed cash balance.

2. Pilot Studies and Investigations

In its initial filing, UIF included an adjustment to increase working capital for wastewater to reflect studies and preliminary investigations for pro forma projects yet to be completed. The Utility's MFRs listed a Chlorine Dioxide Pilot Study for Summertree and two separate investigations related to I&I and smoke testing for Cypress Lakes. As explained by witness Crane, the Chlorine Dioxide Pilot Study relates to the water system instead of wastewater, and one of the Smoke Testing/I&I Investigations labelled as Cypress Lakes, in the amount of \$89,328, should actually reflect two separate investigations—one for Sandalhaven in the amount of \$61,847 and one for Summertree in the amount of \$27,481. Additionally, the Utility's "Total Pro Forma Adjustments to Working Capital" in the amount of \$3,202,451 for wastewater, Line 17, does not include the \$45,000 listed for Cypress Lakes' I&I Investigation. Before making corrections for the errors listed above, we evaluated each pro forma project using the same process used to evaluate costs and the prudence of pro forma plant projects.

Additionally, we evaluated the circumstances of each project to determine if it was appropriate to include in working capital. We, in Order No. PSC-01-1374-PAA-WS, cited the NARUC USOA accounting instructions for Account 183 – Preliminary Survey and Investigation, as stated below:³⁸

³⁸ Order No. PSC-01-1374-PAA-WS, issued June 27, 2001, in Docket No. 010518-WS, *In re: Notice of intent to increase water and wastewater rates in Pasco County, based upon application of provisions of Section 367.081(4)(a) & (b), F.S., by Aloha Utilities, Inc.*

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This account shall be charged with all expenditures for preliminary surveys, plans, investigations, etc., made for the purpose of determining the feasibility of projects under contemplation. If construction results, this account shall be credited and the appropriate utility plant account charged. If the work is abandoned, the charge shall be to account 426 - Miscellaneous Nonutility Expenses, or to the appropriate operating expense account unless otherwise ordered by the Commission (See account 675 - Miscellaneous Expenses).³⁹

Our order further explained that because the results of the pilot project in question were not yet completed, it was appropriate to recognize the costs in working capital in that rate proceeding and address the appropriate final treatment for the costs in a future rate proceeding. According to the Utility, as referenced in Table 6 below, future projects stemming from the results of the I&I investigations are probable. Therefore, we hereby find that inclusion of the updated total amount for each project in working capital. As discussed in Section III, the Chlorine Dioxide Pilot Study has already resulted in a capital project, and we find that those costs shall be capitalized to plant. As such, the costs associated with the study shall be removed from working capital. In total, we hereby approve a decrease to wastewater working capital of \$4,453 to reflect the appropriate amount of pro forma studies and preliminary investigations, as shown in Table 6 below.

Table 6
 Working Capital Adjustments for Pilot Study and I&I Investigations

PCF No.	Description	Status	MFR Amt	Commission Approved Total	Adjustment
1	I&I Investigation-Cypress Lakes	Future project probable.	\$0	\$42,500	\$42,500
21	I&I Investigation-Sandalhaven	Future project probable.	61,847	58,255	(3,592)
38	Chlorine Dioxide Pilot Study	Capitalizing to completed capital project.	52,000	0	(52,000)
39	I&I Investigation-Summertree	Project commencing.*	<u>27,481</u>	<u>36,120</u>	<u>8,639</u>
Total			<u>\$141,328</u>	<u>\$136,875</u>	<u>\$4,453</u>

*Not being recovered in the instant docket.

3. Miscellaneous Deferred Debits

The final adjustment to working capital is a corresponding adjustment to miscellaneous deferred debits. Based on our findings to amortize pro forma O&M expenses discussed in Sections III and XXVI, miscellaneous deferred debits shall be increased to reflect the

³⁹ Pursuant to Rule 25-30.115, F.A.C., water and wastewater utilities must maintain their accounts and records in conformity with the 1996 NARUC USOA.

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unamortized portion of each expense. As such, wastewater working capital shall be increased by \$91,863 to reflect the unamortized balance, total expense less a year of amortization, of the amortized expenses associated with WWTP permitting in PCF-8 and I&I inspection in PCF-32.

C. Conclusion

The appropriate working capital balance is \$1,795,933 for water and \$2,577,454 for wastewater. Thus we hereby approve a decrease in working capital of \$2,355,199 for water and \$2,973,713 (-\$3,061,123 - \$4,453 + \$91,863) for wastewater.

XVII. Test Year Rate Base

A. Parties' Arguments

1. UIF

In its brief, UIF stated this is a fallout determination.

2. OPC

In its brief, OPC stated the appropriate rate base for the December 31, 2019 test year is \$54,066,409 for water and \$75,375,380 for wastewater.

B. Analysis

This is a fallout issue. Based upon the Utility's adjusted 13-month average test year balances and our approved adjustments, the appropriate 13-month average rate base is \$54,410,589 for water and \$85,280,139 for wastewater. Schedule Nos. 1-A and 1-B reflect our approved rate base calculations for each system. Our approved adjustments to rate base for each system are shown on Schedule No. 1-C.

XVIII. Accumulated Deferred Taxes

A. Parties' Arguments

1. UIF

The appropriate amount of accumulated deferred income taxes is presented in MFR Schedule D-1. The amount includes \$7,156,450 of regular accumulated deferred income taxes, and \$5,353,825 of protected accumulated deferred income taxes as a result of the TCJA, for a total of \$12,510,275.

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2. OPC

The capital structure should reflect 4.88 percent accumulated deferred income taxes, which is the percentage of accumulated deferred taxes reflected in the capital structure proposed by UIF.

B. Analysis

The appropriate amount of accumulated deferred income taxes (ADITs) was not a disputed issue in this case. UIF proposed a capital structure that included an accumulated deferred income tax ratio of 4.88 percent, not including the protected amounts as a result of the TCJA. OPC agreed that the capital structure should reflect 4.88 percent of ADITs. OPC witness Crane explained that deferred income taxes are taxes that have been collected from ratepayers but have not yet been paid by the utility due to differences in the tax treatment utilized by regulatory commissions and taxing authorities, including the Internal Revenue Service (IRS).

The ADITs balance for the historic test year ended December 31, 2019, as reflected on MFR Schedule D-1, was \$7,156,450. UIF also included an additional amount of \$5,353,825 to reflect the protected ADITs that were created as a result of the TCJA. Witness Crane explained the TCJA reduced the federal income tax rate from 35 percent to 21 percent thereby creating excess deferred income taxes on the Utility's books. The protected excess ADITs are associated with plant-related balances primarily related to accelerated depreciation methodologies (including bonus depreciation) that were permissible for tax purposes, but which were not reflected for ratemaking purposes. Protected excess deferred income taxes are required to be returned to ratepayers using the Average Rate Assumption Method (ARAM) or an alternate method such as the Reverse South Georgia Method (RSGM), which generally provides that the excess deferred income taxes cannot be flowed-through to ratepayers more rapidly than the average remaining life of the underlying property that gave rise to the deferred taxes. Witness Swain explained that UIF performed an analysis to record an adjustment to the deferred tax balance as a result of the reduced tax rate as required by the TCJA, creating a new liability account of protected ADITs. The protected ADIT balance of \$5,353,825 would be amortized over a 21.51-year period reflecting the remaining depreciation life of the associated assets.

C. Conclusion

Based on record evidence, the appropriate amount of accumulated deferred income taxes to include in the capital structure is \$12,510,275. This amount includes \$7,156,450 shown on UIF's balance sheet, as well as \$5,353,825 related to the flow back of protected accumulated deferred income taxes associated with the Tax Cut and Jobs Act, amortized over 21.51 years.

XIX. STIPULATED—Customer Deposits

We approved a Type II Stipulation addressing the appropriate amount of customer deposits to include in the capital structure:

\$248,501 (0.18% of the capital structure).

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XX. STIPULATED—Cost Rate for Short-Term Debt

We approved a Type II Stipulation addressing the appropriate cost rate for short-term debt for the test year:

4.04%.

XXI. STIPULATED—Cost Rate of Long-Term Debt

We approved a Type II Stipulation addressing the appropriate cost rate for long-term debt for the test year:

5.78%.

XXII. Return on Equity

A. Parties' Arguments

1. UIF

UIF argued that the return on equity of 9.69 percent produced by this Commission's leverage formula understates the investor required return on equity for UIF. Witness D'Ascendis argued the indicated common equity cost rate for UIF is 10.75 percent based on the results of multiple financial models applied to a Utility Proxy Group. Witness D'Ascendis argued this cost rate must be adjusted upward by 100 basis points to reflect UIF's unique business and financial risks relative to his Utility Proxy Group. Witness D'Ascendis contended that his recommended authorized ROE of 11.75 percent is consistent with the *Hope* and *Bluefield* standard of just and reasonable rates of return and balances the interests of both customers and UIF. UIF argued that an ROE of 11.75 percent would provide UIF with sufficient earnings to enable the Company to attract necessary new capital efficiently and at a reasonable cost.

2. OPC

OPC argued that UIF's requested 11.75 percent ROE is excessive and unreasonable. OPC argued that the awarded ROE should be based on the cost of equity capital as set forth in the *Hope* and *Bluefield* Supreme Court Decisions. Witness Garrett contended that UIF's awarded ROE should be based on its estimated cost of equity of 6.00 percent. OPC argued that witness Garrett's ROE analysis properly took into account the historically low interest rates and that utility stocks are less risky than average stocks in the marketplace, and thus, have a lower cost of equity. OPC argued that consistent with the U.S. Supreme Court finding in the *Federal Power Commission v. Hope Natural Gas Co.* case,⁴⁰ the awarded ROE should also be fair and reasonable. Witness Garrett opined that while an ROE of 6.00 percent is accurate from a technical analysis standpoint, he recommended this Commission award an ROE of 9.50 percent.

⁴⁰ See *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

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Witness Garrett argued that an awarded ROE of 9.50 percent represents a good balance between the Supreme Court's decision in the *Hope* case that awarded ROEs should be based on cost, while recognizing the end result must be reasonable. OPC argued that OPC witness Garrett's recommended ROE of 9.50 percent is closest to the result of 9.69 percent from this Commission's leverage formula.

B. Analysis

1. Cost of Equity Models

The ROE is the allowed cost of common equity included in a utility's regulatory capital structure to determine the overall rate of return used to establish a revenue requirement. UIF's common equity is not publicly traded, and as such, a market-based cost rate for the Utility cannot be directly observed. Consequently, both OPC witness Garrett and UIF witness D'Ascendis applied cost of equity financial models to a proxy group of publicly traded companies with similar risk to UIF to derive approximations of the required ROE. OPC witness Garrett used the same proxy group of publicly traded water utilities as that of UIF witness D'Ascendis.

Both OPC and UIF witnesses used the Discounted Cash Flow (DCF) model and the Capital Asset Pricing Model (CAPM) to estimate the cost of equity. In addition, UIF witness D'Ascendis employed two risk premium methods, the PRPM (predicted risk premium model) and the adjusted total market approach RPM (risk premium model) to estimate the cost of equity. Neither OPC witness Garrett nor UIF witness D'Ascendis believe our Leverage Formula approved by Order No. PSC-2020-0222-PAA-WS⁴¹ is appropriate for setting the allowed ROE in this case. Witness Garrett argued the result from our Leverage Formula is too high and doesn't have an input for market risk and witness D'Ascendis contended it is too low and doesn't meet the *Hope* and *Bluefield*⁴² standard.

The DCF model is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its basic form, the DCF model is expressed as the dividend yield of a stock plus the expected long-term growth rate.

$$\text{ROE} = (\text{dividend} \div \text{stock price}) + \text{growth rate}$$

The CAPM is a risk premium method that estimates the cost of equity for a stock as a function of a risk-free return plus a risk premium. The market risk premium is defined as the incremental return of the stock market as a whole less the risk-free rate multiplied by the beta for the individual security. The beta is expressed as the volatility or expected return of an individual security compared against the stock market as a whole. A beta value of 1.0 indicates the individual security has the same volatility or expected return as the stock market. A beta value of

⁴¹ Order No. PSC-2020-0222-PAA-WS, Issued June 29, 2020, in Docket No. 20200006-WS, *In re: Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f), F.S.*

⁴² See *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-93 (1923), and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

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less than 1.0 is considered less risky than the stock market as a whole and a beta value greater than 1.0 is considered more risky.

$$\text{ROE} = \text{risk-free rate} + \text{Beta (expected market return} - \text{risk-free rate)}$$

The risk premium approach is based on the principle that an investment in equity securities is more risky than an investment in bond securities and equity investors require a higher return than debt investors to compensate equity investors for bearing greater risk. In the risk premium approach, the cost of equity is derived from the sum of the estimated equity risk premium and the expected yield on a particular class of bonds.

$$\text{ROE} = \text{risk premium} + \text{bond yield}$$

2. UIF

Witness D’Ascendis recommended that we authorize a return on common equity of 11.75 percent. In support of his recommendation, witness D’Ascendis applied several cost of equity models to a proxy group of regulated water companies and a second proxy group of non-regulated companies. Those models included the DCF, CAPM, and two Risk Premium Models; a Predictive RPM and a RPM using an adjusted total market approach. In addition, witness D’Ascendis argued that an upward adjustment of 100 basis points is necessary to compensate UIF for its unique business risk and smaller size as compared to his Utility Proxy Group. Table 7 summarizes the results from witness D’Ascendis’ cost of equity models and recommendation.

Table 7
 UIF Witness D’Ascendis’ ROE Model Results

Common Equity Cost Rate Model	Results
Discounted Cash Flow Model (DCF)	9.07%
Risk Premium Model (RPM)	10.91%
Capital Asset Pricing Model (CAPM)	10.90%
Cost of Equity Models Applied to Non-Price Regulated Proxy Group	11.48%
Indicated ROE from model results	10.75% (Avg. of Mean and Median)
Business Risk Adjustment	1.00%
Recommended ROE	11.75% (10.75% + 1.00%)

Witness D’Ascendis selected seven publicly traded water companies for his Utility Proxy Group. The most recent five-year average common equity ratio (including short-term debt) for the Utility Proxy Group is 51.09 percent. That is comparable to UIF’s common equity ratio of 49.39 percent. The seven companies are listed below.

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- American States Water Company
- American Water Works Co., Inc.
- California Water Service Corp.
- Essential Utilities, Inc.
- Middlesex Water Co.
- SJW Corporation
- York Water Co.

Witness D'Ascendis applied the single-stage constant growth DCF model to his Utility Proxy Group as one method to estimate the ROE. He adjusted the dividend yield in the formula to account for quarterly dividend payments to reflect the actual payout frequency of the companies. Witness D'Ascendis relied on security analysts' five-year forecasts of earnings per share for the growth estimate in his application of the DCF. The average result of the DCF analyses of the seven water companies in the proxy group was 8.70 percent. The median result was 9.44 percent. Witness D'Ascendis then averaged the mean and median results to arrive at his recommended DCF result of 9.07 percent for the Utility Proxy Group.

Witness D'Ascendis applied both the traditional CAPM and the Empirical CAPM (ECAPM) to the companies in his Utility Proxy Group. The ECAPM, unlike the traditional CAPM, includes an algebraic adjustment to increase the Beta value in the equation to reflect the assumption that empirical studies demonstrate low beta securities earn returns somewhat higher than the traditional CAPM predicts. The CAPM and ECAPM require three inputs, the Beta coefficient, the risk-free rate, and the return on the stock market. For the Beta coefficient, witness D'Ascendis relied on an average of the adjusted Beta coefficient published by Value Line and provided by Bloomberg Professional Services. For the risk-free interest rate, witness D'Ascendis used the Blue Chip Financial Forecast (Blue Chip) to estimate the projected 30-year U.S. Treasury Bond Yield rate. He used the consensus forecast from the most future six annual quarters ending with the third quarter in 2021 as published in the May 1, 2020 Blue Chip. He averaged the more recent forecast with the long-range five-year forecasts for 2021 – 2025 and 2026 – 2030, as published in the December 1, 2019 Blue Chip. Witness D'Ascendis did not calculate an implied market return, but instead determined the expected equity risk premium for the market using six estimated market returns from three different sources: three from Ibbotson historical data, two from Value Line, and one from Bloomberg. In his CAPM, witness D'Ascendis used a risk-free rate of 2.03 percent, an estimated equity risk premium of 11.94 percent (indicating the expected return on the market is 14 percent), and an average beta for the Utility Proxy Group of 0.71. The CAPM results are summarized in Table 8.

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Table 8
 Summary of Witness D’Ascendis’ CAPM Results

	Average Beta	Risk-Free Rate	Market Equity Risk Premium	Traditional CAPM	Empirical CAPM	Average of CAPM and ECAPM
Mean	0.69	2.03%	11.94%	10.29%	11.21%	10.75%
Median	0.72	2.03%	11.94%	10.63%	11.46%	11.05%
Average of Mean and Median	0.71	2.03%	11.94%	10.46%	11.34%	10.90%

Witness D’Ascendis also relied on two risk premium methods to support his recommended ROE for UIF. The first method is a Predictive Risk Premium Model (PRPM) and the second method is a risk premium method (RPM) using an adjusted total market approach. Witness D’Ascendis obtained a result of 11.31 percent and 10.50 percent, respectively, for his PRPM and RPM approaches. Witness D’Ascendis averaged the results of his two risk premium methods to arrive at an overall result of 10.91 percent for his risk premium models.

Witness D’Ascendis explained the PRPM estimates the risk/return relationship directly as the predicted equity risk premium is generated by the predictability of volatility using autoregressive conditional heteroskedasticity (ARCH). The inputs to the models are the historical returns on the common equity of each company in the Utility Proxy Group, minus the monthly yield on long-term U.S. Treasury securities through April 2020. Witness D’Ascendis used a generalized form of ARCH (or GARCH) to determine each utility’s projected equity risk premium using Eviews statistical software. The mean and median results from witness D’Ascendis application of his PRPM to the Utility Proxy Group were 11.66 percent and 10.96 percent, respectively. Witness D’Ascendis then averaged the mean and median results to arrive at his final result of 11.31 percent for the PRPM.

Witness D’Ascendis’ second RPM, an adjusted total market approach, added a prospective public utility bond yield to the average of an equity risk premium derived from a beta-adjusted total market equity risk premium and an equity risk premium based on the S&P Utility Index. First, witness D’Ascendis calculated a prospective Moody’s A-rated public utility bond yield of 3.82 percent for the Utility Proxy Group based on the group’s average Moody’s issuer rating of A2/A3. Next, witness D’Ascendis used a derivation of a beta-derived RPM by determining a market risk premium of 10.71 percent based on an average result from six different methodologies, and multiplying the result by an adjusted beta of 0.71. The forecasted equity risk premium from witness D’Ascendis’ beta-adjusted derivation was 7.60 percent ($10.71\% \times 0.71 = 7.60\%$). The results are summarized in Table 9.

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Table 9
 Witness D'Ascendis' Beta-Adjusted RPM Derivation Results

	Equity Risk Premium Methodology	Utility Proxy Group
1.	Ibbotson Equity Risk Premium	5.78%
2.	Regression on Ibbotson RPM data	9.12%
3.	Ibbotson Equity Risk Premium based on PRPM	11.95%
4.	Equity Risk Premium based on Value Line Summary and Index	15.50%
5.	Equity Risk Premium based on Value Line S&P 500 Companies	11.58%
6.	Equity Risk Premium based on Bloomberg S&P 500 Companies	10.32%
	Average of RPM results	10.71%
	Adjusted Beta	0.71
	Forecasted Equity Risk Premium	7.60%

Witness D'Ascendis also derived the equity risk premium based on three RPMs using the S&P Utility Index holding period returns, and two RPMs using expected returns of the S&P Utility Index using Value Line and Bloomberg data. For the three RPMs using historical returns, witness D'Ascendis relied on a traditional RPM, a regression based RPM, and the PRPM. For the two RPMs using expected returns, witness D'Ascendis relied on the expected total returns on the S&P Utility Index using forecasted data from Value Line and Bloomberg Professional Services. Witness D'Ascendis averaged the results for an Implied Equity Risk Premium of 5.76 percent. Witness D'Ascendis' results using RPM on the S&P Utility Index is summarized in Table 10.

Table 10
 Witness D'Ascendis' RPM results for the S&P Utility Index

RPM Methodology	S&P Utility Index Total	A-rated public utility bonds	Implied Equity Risk
Historical Equity Risk Premium	10.74%	6.53%	4.21%
Regression of Historical Equity Risk Premium	6.68%	n/a	6.68%
Forecasted Equity Risk Premium using PRPM	5.95%	n/a	5.95%
Forecasted Equity Risk Premium using Value Line Data	10.50%	3.74%	6.76%
Forecasted Equity Risk Premium using Bloomberg Data	8.97%	3.74%	5.23%
Average Equity Risk Premium			5.76%

Witness D'Ascendis averaged the results from his RPM based on the total market using his beta adjusted approach (7.60 percent) with the results using the holding period returns of the

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S&P Utility Index with A-rated utility bonds (5.76 percent). The equity risk premium applicable to the Utility Proxy Group was 6.68 percent. Witness D’Ascendis then added his RPM result of 6.68 percent to his adjusted prospective bond yield of 3.82 percent to derive the final result of 10.50 percent for his estimate of an equity risk premium through the use of an adjusted total market approach.

Witness D’Ascendis also applied cost of equity models to a proxy group of domestic, non-price regulated companies. Witness D’Ascendis explained that the Supreme Court, in the *Hope* and *Bluefield*⁴³ cases, did not specify that comparable risk companies had to be utilities. He argued that non-price regulated companies make an excellent proxy if they are comparable in total risk to the Utility Proxy Group and are appropriate because all of the companies compete for capital in the same markets. Witness D’Ascendis selected twelve companies comparable in total risk to the Utility Proxy Group. Witness D’Ascendis explained the total risk can be determined by the measurement of the variance of returns as measured by the companies’ beta coefficients. Companies that have similar betas and standard errors of regression are similar in total risk. The twelve non-price regulated companies selected by witness D’Ascendis are Casey’s General Stores, Cboe Global Markets, Cracker Barrel, Campbell Soup, Dunkin’ Brands Group, Darden Restaurants, Hormel Foods, Lancaster Colony, Eli Lilly, Lamb Weston Holdings, Altria Group, and Valvoline Inc.

Witness D’Ascendis applied the DCF, RPM, and CAPM to the non-price regulated proxy group in an identical manner as he did the Utility Proxy Group except for the PRPM. The average of the mean and median of his results were 11.48 percent for the twelve company non-price regulated proxy group. The results are summarized in Table 11.

Table 11
 Witness D’Ascendis’ ROE estimate for a
 non-price regulated proxy group of companies

Cost of Equity Models	Indicated ROE
DCF	8.41%
RPM	13.12%
CAPM	11.83%
Mean	11.12%
Median	11.83%
Average of Mean and Median	11.48%

Witness D’Ascendis contended that due to its small size relative to the companies in the Utility Proxy Group, UIF has greater business risk which should be reflected in its awarded ROE. As such, witness D’Ascendis opined that 100 basis points should be added to his ROE

⁴³ See *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-93 (1923), and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

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estimate of 10.75 percent for a final recommended ROE of 11.75 percent. Witness D'Ascendis explained that smaller companies are less able to cope with risk exposure to negative business cycles and economic downturns. Investors require higher returns from riskier companies to compensate for less marketability and liquidity of small company stocks. Witness D'Ascendis cited several well-known articles in support of his testimony. Witness D'Ascendis argued that consistent with financial principles of risk and return, increased risk due to small size must be considered in the allowed rate of return on common equity. UIF's market capitalization is \$196 million as compared to the \$5.66 billion average market capitalization of the Utility Proxy Group; a difference of almost 29 times that of UIF. Witness D'Ascendis also testified that our leverage formula recognizes a size adjustment by adding a 50-basis point private placement premium and a 50-basis point small utility risk premium to the results of cost of capital models used in its derivation of the annual leverage formula. Additionally, the long-term debt of UIF's parent company, Corix Regulated Utilities (US), Inc. (CRU-US), is privately placed debt. Therefore, witness D'Ascendis argued, a size premium is necessary to reflect UIF's greater risk due to their smaller size relative to the Utility Proxy Group.

3. OPC

OPC witness Garrett also used versions of the CAPM and DCF model to calculate the cost of equity and determined the market cost of equity derived from his models indicated an ROE of 6.00 percent. Nonetheless, witness Garrett recognized that in the *Hope*⁴⁴ case, the U.S. Supreme Court found that although the awarded ROE should be based on the utility's cost of capital, the Supreme Court also indicated that the end result should be just and reasonable. Therefore, witness Garrett recommended UIF's allowed mid-point ROE should be 9.50 percent. Witness Garrett opined that while an awarded ROE of 6.00 percent would be technically accurate, an allowed ROE of 9.50 percent is a good balance between the Supreme Court's "end result" doctrine that the awarded ROE be based on the actual cost of equity and be reasonable.

Witness Garrett argued that allowed ROEs for utilities have been above the average required market return for two decades. Witness Garrett contended that because utility stocks are less risky than the average stock in the market, the cost of equity for utilities is below the market cost of equity. Witness Garrett recognized that an awarded ROE of 6.00 percent would be a substantial change from prior awarded ROEs and suggested the ratemaking concept of gradualism, which is usually applied to ratepayers to avoid rate shock, could be applied to shareholders and slowly reduce awarded ROEs towards their true market-based cost of equity. Witness Garrett explained if we suddenly changed the awarded ROE anticipated by regulatory stakeholders, it could have the undesirable effect of increasing the utility's risk profile and would be at odds with the Supreme Court's "end result" doctrine. Witness Garrett argued that an awarded ROE of 9.50 percent represents a gradual move toward UIF's market-based cost of equity, and would be fair to UIF's shareholders because 9.50 percent is over 300 basis points above the Company's market-based cost of equity.

OPC witness Garrett testified that the cost of capital should be evaluated objectively and closely tied to economic realities based on stock prices, dividends, growth rates and, most

⁴⁴ See *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

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importantly, risk. Witness Garrett opined that utility stocks are less risky than the average stock in the market and the cost of equity for utilities is below that of the market cost of equity. Witness Garrett opined that like regulated electric and gas utilities, water utilities' risk can be objectively measured through beta coefficients. Witness Garrett explained:

Beta represents the sensitivity of a given security to the market as a whole. The market portfolio of all stocks has a beta equal to one. Stocks with betas greater than one are relatively more sensitive to market risk than the average stock. For example, if the market increases (decreases) by 1.0%, a stock with a beta of 1.5 will, on average, increase (decrease) by 1.5%. In contrast, stocks with betas of less than one are less sensitive to market risk, such that if the market increases (decreases) by 1.0%, a stock with a beta of 0.5 will, on average, only increase (decrease) by 0.5%. Thus, stocks with low betas are relatively insulated from market conditions.

Witness Garrett opined that firms with high betas are affected more than firms with low betas, which is why firms with high betas are riskier. Stocks with betas greater than one are generally known as cyclical stocks. Firms in cyclical industries are sensitive to recurring patterns of recession and recovery known as the business cycle. Thus, cyclical firms are exposed to a greater level of market risk. Securities with betas less than one, on the other hand, are known as defensive stocks. Companies in defensive industries, such as public utility companies, will have low betas and performance that is comparatively unaffected by overall market conditions. Therefore, witness Garrett argued, since utilities are defensive firms that experience little market risk and are relatively insulated from market conditions, that fact should be appropriately reflected in UIF's awarded ROE.

Witness Garrett applied the single stage quarterly compounding DCF model and the CAPM to the same Utility Proxy Group used by witness D'Ascendis. In his DCF application, witness Garrett obtained the current 30-day average of reported dividend and stock prices for the Utility Proxy Group to determine the dividend yield, then added a long-term terminal growth rate representing the U.S. nominal gross domestic product (GDP) of 3.90 percent. The result of his DCF model was 6.00 percent. Witness Garrett argued that the terminal growth rate used in the DCF model should not exceed the aggregate economic growth rate. According to the Congressional Budget Office, the U.S. GDP is 3.90 percent which includes an inflation rate of 2.0 percent. Witness Garrett argued that utilities are in the maturity stage of the business life cycle and their real growth opportunities are limited to the population growth within their defined service territory. For mature companies such as regulated utilities, witness Garrett argued, the terminal growth rate will likely fall between the expected rate of inflation and the expected nominal GDP.

Applying the CAPM to the Utility Proxy Group, witness Garrett obtained a result of 6.00 percent. In his CAPM derivation, witness Garrett used a risk-free rate of 1.51 percent which was based on the then current 30-day average of daily 30-year U.S. Treasury Bond Yield rate. Witness Garrett used the Utility Proxy Group average beta of 0.76 as published by Value Line Investment Survey even though there is evidence suggesting that betas published by sources like Value Line may overestimate the risk of utilities. For his equity risk premium (ERP), witness

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Garrett relied primarily on the ERP reported in published expert surveys, and an implied ERP which he calculated. Witness Garrett explained his implied ERP relied on the Gordon Growth Model version of the DCF model to calculate the implied market return using the companies in the S&P 500. Witness Garrett obtained a result of 7.50 percent for the S&P 500 market return and subtracted the risk-free rate of 1.51 percent to obtain an ERP result of 6.00 percent. For his final ERP estimate, witness Garrett considered six ERP results ranging from 4.40 percent to 6.00 percent and conservatively selected the highest estimate of 6.00 percent. The final result of witness Garrett's CAPM yielded a result of 6.00 percent. The CAPM equation is presented here: $K = R_f + B(ERP)$ or $6.07\% = 1.51\% + 0.76(6.00\%)$.

To test the reasonableness of his cost of equity estimate, witness Garrett used the same methods as he did to derive the ERP and risk-free rate in his CAPM. Witness Garrett opined that the risk-free rate plus the ERP is equal to the required return on the stock market. Witness Garrett contended that the cost of equity of utility stocks must be less than the total market cost of equity as indicated by the average utility company beta of less than 1.0. Using the same expert surveys and implied ERP calculations, witness Garrett concluded that the average market cost of equity is 7.00 percent which provides an upper limit to UIF's actual cost of equity.

Witness Garrett also recommended we increase the long-term debt ratio in UIF's capital structure used for setting rates from approximately 45 percent to 50 percent. Witness Garrett opined that UIF's proposed capital structure consists of an insufficient amount of debt, especially since UIF's awarded ROE will certainly be above the market-based cost of equity. Witness Garrett explained that equity capital has a higher cost than debt capital and companies can reduce their weighted average cost of capital (WACC) by increasing their debt financing. Witness Garrett argued that while competitive firms maximize their value by minimizing their WACC, regulated utilities can increase their revenue requirement by increasing their WACC. Comparatively, the Utility Proxy Group has an average debt ratio of 50 percent. The higher proportion of debt in the capital structure, the higher the financial risk which must be factored into the common equity cost rate.

4. OPC Critique of UIF Testimony

Witness Garrett testified to four main disagreements with and critiques of witness D'Ascendis' ROE testimony and quantitative analyses. First, witness Garrett argued that witness D'Ascendis used short-term, quantitative growth estimates published by analysts that resulted in high long-term growth rates in his DCF model analysis. Second, that witness D'Ascendis' market equity risk premium estimate of 11.94 percent used in his CAPM derivation was overstated and unsupported. Third, witness D'Ascendis' use of a non-price regulated proxy group is unnecessary, and the risk inherent in the non-regulated proxy group is greater than that of the Utility Proxy Group. Fourth, witness Garrett disagreed with witness D'Ascendis that a 100-basis point upward adjustment to the ROE is necessary to account for UIF's small-size risk.

a. DCF

Witness D'Ascendis used short-term growth rate estimates from analysts as high as 14 percent in his DCF model analysis. Witness Garrett explained that analysts' growth rates are

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based on short-term projections of earnings growth rates published by institutional research analysts such as Value Line and Bloomberg. Analysts' earnings growth rate estimates range from three to ten years and many ROE analysts inappropriately use them as long-term growth projections in the single-stage constant growth DCF model as witness D'Ascendis did in his analysis. Witness Garrett argued that a growth rate of 14 percent for one of the companies in witness D'Ascendis' DCF model is more than three times the projected U.S. GDP growth rate of 3.9 percent, which makes the results of witness D'Ascendis' DCF model upwardly biased and not reflective of current market conditions.

b. CAPM

Witness Garrett argued that witness D'Ascendis' market equity risk premium estimate of 11.94 percent used in his CAPM derivation was overstated and unsupported. Witness Garrett pointed out that witness D'Ascendis' market equity risk premium estimate of 11.94 percent is significantly higher than the average estimates reported by 2,156 responses from people and entities in the U.S.A. to a 2020 IESE Business School survey. The average estimates for the market risk premium as reported by the 2020 IESE Business School survey was 5.60 percent with a maximum estimate of 13.40 percent. Witness Garrett compared witness D'Ascendis' equity risk premium estimate with three other independent sources ranging from 4.40 percent to 6.00 percent. Witness D'Ascendis' equity risk premium is twice that of the other independent sources for the ERP and clearly not within the range of reasonableness.

c. Non-Price Regulated Proxy Group

Witness Garrett argued that there is no marginal benefit from applying the same CAPM and DCF model to a group of non-price regulated, non-utility companies in this case. Witness Garrett contended that using a group of non-regulated, non-utility companies will not indicate a required return commensurate with returns of investments of corresponding risk. Also, witness D'Ascendis' application of CAPM suffers from the same overestimated equity risk premium used in the analysis of the Utility Proxy Group.

d. Small Size Premium

Witness Garrett disagreed with witness D'Ascendis that a 100-basis point upward adjustment to the ROE is necessary to account for UIF's small size risk. Witness Garrett argued that small-cap stocks do not consistently outperform large-cap stocks. Witness Garrett testified that the small size premium was short-lived from 1936-1975, and more recent studies demonstrated that after 1983, U.S. small-cap stocks underperformed relative to large-cap stocks. Witness Garrett opined that in a 2002 study by Elroy Dimson, Paul Marsh & Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns*, the authors found that after the size effect phenomenon was discovered in 1981, it disappeared in a few years. Witness Garrett argued that utility witnesses often use the term "size effect" to imply there should be a small-size premium to artificially inflate the cost of equity.

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5. Business Risk

Business risk refers to the viability of a business and the ability to generate sufficient revenue to cover its operational expenses and cost of capital. Some examples of business risk facing water companies are the legal and regulatory environment, customer growth, declining customer water consumption, water supply restrictions, and significant water quality requirements. Witness D'Ascendis opined that because water utility companies have the obligation to provide safe, adequate, and reliable water service at all times, they do not have the option to delay capital-intensive investments in infrastructure. Witness D'Ascendis testified that increasingly stringent environmental standards from regulatory agencies such as the U.S. Environmental Protection Agency, state and county health agencies, and water management districts require additional investment in infrastructure to comply with new health and consumption standards. Because water utilities invest in capital-intensive long-lived assets, long-term business risks are of considerable concern to investors. Witness D'Ascendis testified that the capital intensity of the water utility industry, that is, the capital investment required to produce one dollar of revenue, is greater than in other industries including gas and electric utilities. Witness D'Ascendis explained that in 2019, it required \$4.70 of net water utility plant to produce \$1.00 in operating revenue, while for the Gas and Electric Industries, it required net plant of \$2.33 and \$2.93, respectively. Witness D'Ascendis also mentioned water utility companies have risk associated with their long-lived assets through low depreciation rates. Lower depreciation rates mean water utilities have lower depreciation expense and cannot rely on depreciation as a source of cash flow as much as other regulated industries. For example, witness D'Ascendis testified that water utilities' average depreciation rates in 2019 were 2.59 percent as compared to the natural gas and electric utilities that averaged depreciation rates of 3.35 percent and 3.64 percent, respectively. Witness D'Ascendis concluded that, ". . . the water utility industry's high degree of capital intensity and low depreciation rates, coupled with the need for capital spending to replace aging and failing water infrastructure, makes the need to maintain financial integrity and the ability to attract needed new capital through the allowance of a sufficient rate of return, increasingly important in order for water utilities to be able to successfully meet the challenges and investment needs they face."

6. Financial Risk

Financial risk is the additional risk that a company may not have sufficient cash flow to meet its financial obligations. The higher proportion of debt in the capital structure, the higher the financial risk which must be factored into the ROE. Witness Garrett explained the more risk an investor assumes the larger return the investor will demand. UIF proposed to use a capital structure consisting of 50.61 percent debt and 49.39 percent equity. The range of equity ratios for the Utility Proxy Group is between 38.48 percent and 57.05 percent, with an average of 49.34 percent. Witness Garrett argued that because regulated utilities have large amounts of fixed assets, stable earnings, and low risk relative to other industries, they can afford to have relatively higher debt ratios for leverage. Competitive firms can minimize their cost of capital by including a sufficient amount of debt in their capital structures. Witness Garrett opined that the average debt ratios of a utility proxy group will likely be lower than what would be observed in a pure competitive environment.

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7. UIF Critique of OPC Testimony

Witness D'Ascendis disagreed with seven recommendations and assumptions in witness Garrett's testimony. First, witness Garrett's recommendation to increase the debt ratio in the capital structure from 50 percent to 55 percent is unreasonable because it is based on the debt ratios of non-utility industries. Second, witness Garrett's recommended ROE of 9.50 percent was not supported by the results of his cost of equity models. Third, witness Garrett confused the relationship between the allowed ROE, the required ROE, the expected return, and the cost of equity. Fourth, witness Garrett incorrectly concluded that allowed returns for utility companies exceed the required return on the market. Fifth, witness Garrett did not apply the DCF model appropriately. Sixth, witness Garrett did not apply the CAPM appropriately. Seventh, witness Garrett did not consider using a small size premium for UIF in his ROE recommendation.

a. Capital Structure

Witness D'Ascendis rebutted witness Garrett's recommendation to increase UIF's debt ratio in its capital structure from 50 percent to 55 percent and explained the CRRRA (Certified Rate of Return Analyst) Guide recommends using a hypothetical capital structure when 1.) the utility's capital structure is deemed to be substantially different from the typical or proper capital structure, or 2.) the utility's capital structure is funded as part of a diversified organization whose overall capital structure reflects its diversified nature rather than its utility operations only.⁴⁵ Further, witness D'Ascendis pointed out that UIF's parent capital structure is in line with the capital structures of the companies in the Utility Proxy Group and UIF's parent, Corix Regulated Utilities, Inc., which solely operates regulated water utilities and is not diversified. UIF's proposed capital structure consisting of a common equity ratio of 49.39 percent compares very closely with that of the Utility Proxy Group's average capital structure consisting of 49.34 percent.

b. Lack of Empirical Basis for 9.50 percent ROE

Witness D'Ascendis argued that witness Garrett's recommended ROE of 9.50 percent is fundamentally disconnected from his analytical model results of 6.00 percent and far removed from observable and relevant data. Witness D'Ascendis disagreed with witness Garrett's application of the concept of gradualism to this case and pointed out that gradualism is usually applied from the ratepayers' viewpoint as a method to avoid rate shock and is not applicable to the awarded ROE. In rebuttal, witness D'Ascendis stated, "Given that Mr. Garrett's analyses in this case point to a lower return of 6.00%, but he recommended a 9.50% return, it is unclear to the extent that Mr. Garrett finds the analyses he presents to be reliable, as they clearly have no correlation with his recommendation." Witness D'Ascendis opined that witness Garrett's recommendation is without merit or empirical support, and should be given no weight by this Commission.

⁴⁵ See, David C. Parcell, *The Cost of Capital – A Practitioner's Guide*, Prepared for the Society of Utility and Regulatory Financial Analysts, 2010 Edition, at 47.

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c. Relationship between various types of returns and ROE

In his rebuttal testimony, witness D'Ascendis opined that witness Garrett's explanation of the relationship between the allowed ROE and investor-required ROE changed throughout his testimony. On page 5 of his testimony, witness Garrett stated, "While cost of equity, required ROE, earned ROE and awarded ROE are interrelated factors and concepts, they are all technically different from each other." Witness D'Ascendis then claimed witness Garrett contradicted his prior statement on page 14 by stating that awarded ROEs and cost of equity are very different concepts. Witness D'Ascendis contended that witness Garrett continued to change his position regarding the equivalency, or non-equivalency of the allowed and required ROE. Witness D'Ascendis rebutted witness Garrett by explaining "For regulated utilities, the ROE equals the investor-required return on equity which equals the allowed ROE, as reflected in the *Hope* and *Bluefield* Supreme Court decisions cited in both my Direct Testimony and Mr. Garrett's testimony."

d. Allowed ROEs Exceed the Investor-required return on the market

Witness D'Ascendis argued that witness Garrett's conclusion that allowed ROEs have exceeded the investor-required return on the market is his own opinion and misplaced. Witness D'Ascendis disagreed with witness Garrett's methodology used to calculate the market cost of equity which ranged from a high of 11.96 percent in 1990 to 7.12 percent in 2019, with the lowest result of 6.91 percent in 1998. In rebuttal, witness D'Ascendis calculated the market cost of equity for the same period using his PRPM methodology which ranged from approximately 19 percent in 1990 to 13.50 percent in 2019. Witness D'Ascendis opined that his results made intuitive sense as the ratio of allowed ROEs versus the required market return averages about 0.70, which is consistent with utility betas over the same period.

e. Misapplication of the DCF Model

Witness D'Ascendis argued that witness Garrett's use of a 3.90 percent growth rate in his DCF model is not based on any measure of company-specific growth. Witness Garrett's assumption that one growth rate applies to all companies in the Utility Proxy Group has no basis in theory or practice. Further, GDP is not an upper limit for terminal growth in the DCF model as witness Garrett contends. GDP is not a market measure, but rather a measure of the value of the total output of goods and services, excluding inflation, in an economy. Witness D'Ascendis argued that while projected growth in earnings per share (EPS) is not a market measure, it is well established in financial literature that EPS is the superior measure of dividend growth in a DCF model. Since the utility industry is in its mature phase of the company life cycle, which is characterized by limited investment opportunities and steady earnings growth, the company-specific projected EPS growth rate, not the projected GDP growth rate, is the appropriate measure for growth in the DCF model.

f. Misapplication of the CAPM

Witness D'Ascendis disagreed with witness Garrett's use of the average 30-year U.S. Treasury Yields to estimate his risk-free rate and the various methods he used to estimate the

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MRP (market return less the risk-free rate). Witness Garrett's risk-free rate is not based on prospective estimates in contradiction to his testimony that a forward looking risk premium should be used in the CAPM. The MRP surveys used by witness Garrett, such as the Duff and Phelps survey, are based on an expected return on the market which has no relevance to the investor-required return. Further, the Graham and Harvey survey did not provide a reasonable prospective market return estimate. Witness D'Ascendis demonstrated that the Graham and Harvey survey respondents have provided forecasts that significantly underestimated actual market returns. From 2012 through 2019 the Graham and Harvey Survey averaged an expected market return of 5.30 percent while the actual average market return was 15.55 percent. Witness D'Ascendis opined witness Garrett's implied MRP using the Constant Growth DCF methodology is based on a series of questionable assumptions, to which a small set of very reasonable adjustments produces a higher market return estimate. Witness Garrett argued witness Garrett's growth rate of 5.37 percent is too low and he should have used the arithmetic mean which would have equated to a growth rate of 7.35 percent and an estimated market return of 7.98 percent. Witness Garrett's CAPM analysis is flawed because it uses a historical risk-free rate and MRPs based on expected returns.

g. Lack of a Small Size Premium

Witness D'Ascendis took issue with witness Garrett's position that a small size premium is not necessary as studies have shown that small-cap stocks do not consistently outperform large-cap stocks, and therefore, a small size premium is not appropriate. Witness D'Ascendis argued that witness Garrett's position focuses only on the returns of small companies versus large companies. Smaller companies face greater risk than larger companies as they are less able to overcome significant events that affect business operations. As quoted by witness D'Ascendis, Duff & Phelps indicated that the size of a company is one of the most important risk elements to consider when developing cost of equity estimates. Duff & Phelps' *2017 Valuation Handbook – U.S. Guide to Cost of Capital: Cost of Capital Navigator* states:

The size of a company is one of the most important risk elements to consider when developing cost of equity estimates for use in valuing a firm. Traditionally, researchers have used market value of equity (i.e., "market capitalization" or simply "market cap") as a measure of size in conducting historical rate of return research. For example, the Center for Research in Security Prices (CRSP) "deciles" are developed by sorting U.S. companies by market capitalization. Another example is the Fama-French "Small minus Big" (SMB) series, which is the difference in return of "small" stocks minus "big" (i.e., large) stocks, as defined by market capitalization.

Witness D'Ascendis pointed to additional articles supporting the applicability of a size premium making clear that size is a risk factor that must be taken into account when setting the cost of capital. Further, our annual leverage formula allows for a 0.50 percent private placement premium and a 0.50 percent small size premium to recognize smaller companies are considered by investors to be more risky than larger companies.

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8. Commission's Leverage Formula

Both witness D'Ascendis and witness Garrett discussed our leverage formula in their respective testimonies. Using UIF's equity ratio in our leverage formula yielded a result of 9.69 percent. UIF witness D'Ascendis argued that the leverage formula result of 9.69 percent underestimated the current investor-required return for UIF. OPC witness Garrett testified that his results from the CAPM and DCF model indicate UIF's cost of equity is much lower than our leverage formula result of 9.69 percent. Witness Garrett further testified that he believed our leverage formula did not add any marginal value to the analytical process beyond the CAPM and DCF Model. Further, witness Garrett questioned whether our leverage formula met the Supreme Court's *Hope* and *Bluefield* standard because the leverage formula did not measure the cost of equity and there is no input to account for market risk, or the effect of market risk on UIF. In deposition, witness Garrett admitted he was not intimately familiar with the theory behind our leverage formula and was not sure how the formula is calculated or derived. Neither witness provided convincing testimony that our annual leverage formula was inaccurate or inappropriate for setting a ROE for small Florida water and wastewater utilities.

9. Declining Authorized ROEs

As presented in witness Garrett's testimony, according to Regulatory Research Associates (RRA) the average authorized ROEs for water utilities in the U.S. have declined from approximately 10.25 percent in 2006 to approximately 9.40 percent in 2017. In his deposition, witness D'Ascendis confirmed that according to RRA the annual average allowed return on equity for water utilities has been below 10 percent since 2012; however, he also stated that the below 10 percent rate was the average and not all of the allowed ROEs were below 10 percent, and a few were 10.50 percent.

10. Summary

In general, UIF witness D'Ascendis used cost of equity models and assumptions that produced a high ROE estimate, while OPC witness Garrett used cost of equity models and assumptions that produced a low ROE estimate. The appropriate ROE is greater than OPC's recommended ROE of 9.50 percent and lower than UIF's recommended ROE of 11.75 percent. The range of results of the witnesses' cost of equity models is 6.00 percent to 11.66 percent.

The only cost of equity model analysis that supports a 10.75 percent ROE is UIF witness D'Ascendis' Predictive Risk Premium Model (PRPM) with an average result of 11.66 percent. However, the record showed that the PRPM is based on the GARCH model, which used Eviews statistical software to derive a predictive equity risk premium, which is added to a projected risk-free rate. This method is akin to a black box calculation where the inputs were entered and a result was produced using statistical software. Witness D'Ascendis and his colleagues developed the PRPM method and admitted that it is used primarily by himself and other colleagues familiar with the methodology. The record failed to support that witness D'Ascendis' PRPM methodology is widely accepted by other jurisdictions as a method to estimate the equity risk premium. Therefore, we find that the cost of equity models using the PRPM shall be discounted in this case.

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Witness D'Ascendis also used a proxy group of twelve competitive unregulated companies of statistically equal risk to the Utility Proxy Group to derive a cost of equity of 11.48 percent. Witness D'Ascendis included the derived cost of equity of 11.48 percent for his non-price regulated company proxy group in his overall average for the individual cost of equity models for the Utility Proxy Group. This practice inflated the overall results of witness D'Ascendis' cost of equity models by 30 basis points. We agree with OPC witness Garrett that there is no marginal benefit in this case from applying the same CAPM and DCF models to a group of non-price regulated, non-utility companies.

We agrees with UIF witness D'Ascendis that OPC witness Garrett's cost of equity model results of 6.00 percent has no correlation to, and does not provide any empirical support for, his recommended ROE of 9.50 percent. Further, a cost of equity of 6.00 percent is unreasonable considering that investors require a higher return on equity over debt and the cost of long-term debt for UIF is 5.78 percent. Therefore, witness D'Ascendis' traditional forms of the CAPM and DCF models shall be given more weight than witness Garrett's CAPM and DCF models.

We place greater weight on the traditional forms of the CAPM and DCF models applied to a comparable Utility Proxy Group. Witness D'Ascendis' DCF model average result for the Utility Proxy Group was 8.70 percent using an average growth estimate of approximately 6.88 percent. In comparison, OPC witness Garrett's DCF model result was 6.00 percent, using a growth rate of 3.90 percent. We agree with witness D'Ascendis that using an estimate for GDP of 3.90 percent as the growth rate in the DCF model for calculating the cost of equity using the Utility Proxy Group is inappropriate because it is not based on any measure of growth in the utility industry.

Witness D'Ascendis routinely used assumptions and estimates towards the high end of the range of reasonableness in his cost of equity models. In his CAPM and ECAPM analyses, witness D'Ascendis used estimates for the return on the total market of 18.71 percent, 14.79 percent, and 13.53 percent, which translated into equity risk premiums of 15.50 percent, 11.95 percent, and 11.58 percent. Additionally, in one of his risk premium derivations, witness D'Ascendis calculated an average equity risk premium of 6.68 percent using a total market approach and added the result to an adjusted prospective bond yield for the Utility Proxy Group of 3.82 percent. The result was 10.50 percent. This result is higher than UIF's current allowed ROE of 10.40 percent.

In his deposition, witness D'Ascendis confirmed that his cost of equity models reflect a return on the total market of approximately 14 percent. However, witness D'Ascendis admitted that the historical return on the U.S. stock market has averaged 12.10 percent. Witness D'Ascendis opined that, statistically, the difference between 12 and 14 percent is indistinguishable. However, by using the higher estimated return on the market, witness D'Ascendis' results from his cost of equity models were inflated.

In his traditional CAPM derivation, witness D'Ascendis obtained a result for the Utility Proxy Group of 10.46 percent using a return on the market of approximately 14 percent. However, if witness D'Ascendis used the average market return of 12.10 percent in his

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traditional CAPM derivation, along with his estimated average Beta coefficient of 0.69 and his projected risk-free rate of 2.00 percent, the result would be 9.17 percent [$12.10\% = 2.00\% + 0.71(12.10\% - 2.00\%)$]. Consequently, using a bullish estimated market return of 14 percent yielded an estimated cost of equity 136 basis points. The higher ROE estimate, based on the highest market return projection, is significant when applying the result to the overall cost of capital used to set the rates UIF charges to its ratepayers.

Averaging the result of 8.70 percent from UIF witness D'Ascendis' DCF model with the result of 9.17 percent from his traditional CAPM model using an average market return of 12.10 percent, yields an estimated cost of equity of 8.94 percent. Recognizing that UIF's small size relative to the companies included in the Utility Proxy Group contributes to additional business and financial risk for UIF as compared to the companies in the Utility Proxy Group, we hereby find that the record reasonably supports an ROE of 9.90 percent.

C. Conclusion

Based on the aforementioned, the record does not reliably support an ROE of 11.75 percent. The traditional CAPM and DCF models presented in the record, when simplified, more reliably support an indicated cost of equity of 8.94 percent. Recognizing UIF's smaller size as compared to the companies in the Utility Proxy Group contributes to additional risk, we find that the record reasonably supports an ROE of 9.90 percent. UIF's current allowed ROE is 10.40 percent. The record indicates that allowed ROEs across the country have been trending downward to an average of below 10.00 percent. Further, our annual leverage formula reflected an estimated allowed ROE of 9.70 percent based on UIF's equity ratio of 49.39 percent. Moreover, we determined that UIF's quality of service is unsatisfactory and imposed a 15 basis point reduction to the ROE as a penalty. Therefore, we find that the appropriate ROE for UIF is 9.75 percent, which includes a 15 basis point penalty for unsatisfactory service quality, with a range of plus or minus 100 basis points.

XXIII. Weighted Average Cost of Capital

A. Parties' Arguments

1. UIF

UIF argued that the weighted average cost of capital (WACC) is a fallout from the determinations of Sections XVIII through XXI. Witness D'Ascendis argued that UIF's proposed capital structure is reasonable as compared with the range of equity ratios maintained by the Utility Proxy Group from which he derived his recommended common equity cost rate in Section XXII. Witness D'Ascendis also argued that UIF's proposed capital structure consisting of a common equity ratio of 49.39 percent compares very closely with that of the Utility Proxy Group's average capital structure consisting of 49.34 percent.

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2. OPC

OPC argued the appropriate WACC based on OPC's proposed capital structure is 6.73 percent. Witness Garrett recommended we increase the long-term debt ratio in UIF's capital structure used for setting rates from approximately 45 percent to 50 percent. Witness Garrett opined that, comparatively, the Utility Proxy Group has an average debt ratio of 50 percent. Witness Garrett argued that UIF's proposed capital structure consists of an insufficient amount of debt, especially since UIF's awarded ROE will certainly be above its market-based cost of equity. Witness Garrett explained that equity capital has a higher cost than debt capital and companies can reduce their weighted average cost of capital (WACC) by increasing their debt financing. Witness Garrett argued that while competitive firms maximize their value by minimizing their WACC, regulated utilities increase their revenue requirement by increasing their WACC.

B. Analysis

In its MFRs, UIF requested a capital structure based on a 13-month average as of December 31, 2019, consisting of common equity in the amount of \$66,098,114 (49.39 percent), long-term debt in the amount of \$60,999,232 (45.58 percent) and short-term debt in the amount of \$6,731,596 (5.03 percent) as a percentage of investor supplied capital. The ratios of UIF's investor supplied capital is based on the actual capital structure of the Utility's parent company, Corix Regulated Utilities, Inc. The Utility appropriately used the 13-month average to determine the capital structure for Class A utilities as required by Rule 25-30.433(4), F.A.C. UIF reconciled the capital structure to the UIF rate base using only its investor sources of capital. When reconciled to the UIF rate base, the ratios are reduced to 44.85 percent for common equity, 41.39 percent for long-term debt, and 4.57 percent for short-term debt.

1. UIF

Witness D'Ascendis argued that UIF's common equity ratio of 49.39 percent is reasonable and consistent with the range of common equity ratios maintained by the companies in the Utility Proxy Group. The range of common equity ratios for the Utility Proxy Group is between 38.48 percent and 57.05 percent, with an average of 49.34 percent. Witness D'Ascendis maintained that a long-term debt cost rate of 5.78 percent and a short-term debt cost rate of 4.04 percent are appropriate as they are the actual 13-month average debt cost rates for UIF's parent company.

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Table 12
 UIF Requested Weighted Average Cost of Capital

Capital Component	Amount	Percentage	Cost Rate	Weighted Cost
Long-Term Debt	\$60,999,232	41.59%	5.78%	2.40%
Short-Term Debt	\$6,731,596	4.59%	4.04%	0.19%
Common Equity	\$66,098,114	45.07%	11.75%	5.30%
Customer Deposits	\$248,501	0.17%	2.00%	0.003%
Tax Credits – Zero Cost	\$73,443	0.05%		
ADITs	\$7,156,450	4.88%		
ADITs - TCJA	\$5,353,825	3.65%		
Total Weighted Average Cost of Capital		100%		7.89%

2. OPC

Witness Garrett argued that UIF’s proposed capital structure consists of an insufficient amount of debt, especially since UIF’s awarded ROE will certainly be above its market-based cost of equity. Accordingly, witness Garrett recommended we apply a capital structure consisting of 45 percent common equity, 50 percent long-term debt, and 5 percent short-term debt. Witness Garrett argued that under the rate base rate of return model, a higher WACC results in higher rates, all else held constant. Witness Garrett argued UIF’s proposed debt ratio is far too low, and if adopted, would result in a reasonably high WACC for shareholders. OPC witness Crane testified to the WACC recommended by OPC as presented in Table 13.

Table 13
 OPC Recommended Weighted Average Cost of Capital

Capital Component	Amount	Percentage	Cost Rate	Weighted Cost
Long-Term Debt		45.63%	5.78%	2.64%
Short-Term Debt		4.56%	4.04%	0.184%
Common Equity		41.06%	9.50%	3.90%
Customer Deposits		0.17%	2.00%	0.003%
Tax Credits – Zero Cost		0.05%		
ADITs		4.88%		
ADITs - TCJA		3.65%		
Total Weighted Average Cost of Capital		100%		6.73%

The weighted average cost of capital is a fallout issue that combines the cost rates and amounts of the capital components into a final rate of return. As discussed in Issue 18, the appropriate total amount of ADITs is \$12,510,275. For Section XIX through XXI, the cost rates for long-term debt (5.78 percent), short-term debt (4.04 percent), and customer deposits (2.00 percent) are stipulated. As we found in Section XXII, the appropriate ROE is 9.75 percent. Record evidence indicates that using the capital structure of UIF’s parent, Corix Regulated Utilities, Inc., is reasonable and is comparable with the equity ratios of other regulated water utility companies in the Utility Proxy Group. Therefore, we agree with UIF that appropriate capital structure consists of 49.39 percent common equity, 45.58 percent long-term debt, and

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5.03 percent short-term debt as a percentage of investor sources. The appropriate WACC is presented in Schedule No. 2 and in Table 14.

Table 14
 Commission Approved Weighted Average Cost of Capital

Capital Component	Amount	Percentage	Cost Rate	Weighted Cost
Long-Term Debt	\$57,822,168	41.39%	5.78%	2.39%
Short-Term Debt	\$6,382,518	4.57%	4.04%	0.18%
Common Equity	\$62,653,823	44.85%	9.75%	4.37%
Customer Deposits	\$248,501	0.17%	2.00%	0.00%
Tax Credits – Zero Cost	\$73,443	0.05%		
ADITs	\$7,156,450	5.12%		
ADITs - TCJA	\$5,353,825	3.83%		
Total Weighted Average Cost of Capital		100%		6.95%

C. Conclusion

The appropriate capital structure consists of 49.39 percent common equity, 45.58 percent long-term debt, and 5.03 percent short-term debt as a percentage of investor sources. Based on the proper components, amounts, and cost rates associated with the capital structure for the 13-month average test year ended December 31, 2019, as discussed in Sections XVIII through XXII, the appropriate weighted average cost of capital for UIF for purposes of setting rates in this proceeding is 6.95 percent.

XXIV. Test Year Revenues

A. Parties' Arguments

1. UIF

UIF argued the appropriate test year revenues are \$16,603,928 for water and \$20,305,882 for wastewater, as set forth in the Utility's MFRs.

2. OPC

OPC did not propose any adjustments to the Utility's adjusted test year revenues. However, OPC argued there should be adjustments of \$1,693,982 to UIF's claimed water revenue deficiency of \$2,823,848, as shown on Exhibit ACC-2, Schedule 1, which results in an overall water revenue increase of no more than approximately 6.8 percent. For wastewater, OPC argued that the adjustments indicate a revenue deficiency of no more than \$2,720,043, which reflects revenue requirements of \$3,809,340 to the Utility's revenue deficiency of \$6,529,383. This would result in an overall wastewater increase of no more than approximately 13.4 percent.

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B. Analysis

In its MFRs, the Utility reflected test year revenues of \$16,603,928 for water and \$20,305,882 for wastewater. UIF contended that its MFR schedules reflect the appropriate amount of test year revenues. The test year revenues consist of service revenues of \$16,243,430 and miscellaneous revenues of \$360,497 for water. For wastewater, test year revenues consist of service revenues of \$19,974,976 and miscellaneous revenues of \$330,906. Pursuant to the audit report, the Utility understated the number of water residential bills by 1,323 in its MFR Schedule E-2, which results in the understatement of water test year revenues by \$14,923.

In addition, the Utility had a price index adjustment during the test year resulting in an increase to service rates and miscellaneous service charges. However, in its MFRs, the Utility annualized services revenues, but it did not annualize miscellaneous revenues. Annualizing for the increase in miscellaneous service charges results in miscellaneous revenues of \$363,563 for water and \$333,719 for wastewater. As a result, test year revenues shall be increased by \$3,066 (\$363,563 - \$360,497) for water and \$2,813 (\$333,719 - \$330,906) for wastewater. OPC's arguments pertain to UIF's requested revenue increase rather than the test year revenues.

Based on the above, the appropriate test year revenues for UIF's water and wastewater systems are \$16,621,916 and \$20,308,695, respectively. UIF's test year revenues shall be increased by \$17,989 (\$14,923 + \$3,066) for water and \$2,813 for wastewater.

XXV. STIPULATED—Rate Case Expense

We approved a Type II Stipulation addressing the appropriate amount of rate case expense, as follows:

The appropriate amount of rate case expense is \$743,084. This shall be amortized over four years for an annual expense of \$185,771. Based on the Utility's original request for amortization of rate case expense of \$197,144, annual amortization of rate case expense shall be decreased by \$11,373. Pursuant to Order No. PSC-2019-0363-PAA-WS, \$39,727 of the total rate case expense is appellate and remand rate case expense related to Docket No. 20160101-WS.

XXVI. Pro Forma Expense

A. Parties' Arguments

1. UIF

UIF argued that adjustments to chemical expense related to its Lake Groves facilities were needed, as well as adjustments to telephone expense related to the new employees requested in this proceeding. However, no adjustment to telephone expense was required for the full-time position that UIF had requested be converted from a current part-time position to full-time. The Utility stated that two adjustments should be made to salaries, consisting of annualizing the three-percent salary increase so that a full year of salary expense was included, and to increase the salaries another three percent for the annualized salary increase that would

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take place in 2020. UIF stated that OPC witness Crane testified that it was not appropriate to include new post-test year employees; however, the Utility argued that witness Crane “overlooked the fact that the Commission approved new but not yet hired employees as a pro forma adjustment in UIF’s last rate case.”

2. OPC

OPC argued that it was the Utility’s burden to prove that the additional employees it requested were needed. OPC also stated that UIF had admitted that it had not yet hired any of the additional employees; therefore, O&M expense should be reduced by \$107,421 for water and \$98,602 for wastewater.

B. Analysis

UIF requested several pro forma expense adjustments in its MFRs. OPC witness Crane testified that for the requested pro forma expense adjustments, the Utility had not provided a description of the adjustments or why the adjustments were necessary. Witness Crane stated supporting workpapers and calculations were requested from UIF for these adjustments; however, the information provided was inadequate in many cases. Witness Crane only included adjustments to the Utility’s requested salaries and benefits, telephone, and truck fleet expenses as she recommended denial of the new employees. Witness Crane did not recommend an adjustment to any other pro forma expense discussed in this issue.

1. Amortized O&M Expense

As discussed in Section III, we approved the reclassification of costs associated with two pro forma plant projects (PCF-8, PCF-32) as amortized O&M expense. As such, wastewater miscellaneous expense shall be increased by \$10,250 to amortize the WWTP permitting expenses in PCF-8 and \$15,278 to amortize the I&I inspection expenses in PCF-32.

2. Capitalized Labor

In response to discovery, UIF indicated that capitalized labor expense was recorded for many of the pro forma projects as of October 1, 2020. The capitalized labor is included in our approved pro forma plant additions in Section III. As the labor expense is being recovered through the pro forma plant projects, a corresponding adjustment shall be made to reduce test year salaries and wages expense. Although the Utility did not make this corresponding adjustment to its instant filing, capitalized Water Services Corporation (WSC) labor has been an issue previously addressed in several rate cases involving the former sister companies prior to its reorganization. We allowed the inclusion of capitalized WSC labor expenses in rate case expense as long as the utility demonstrated that a corresponding reduction was made to test year salaries to remove the capitalized labor.⁴⁶ Our decision was based on the principal of avoiding double

⁴⁶ Order Nos. PSC-14-0025-PAA-WS, issued January 10, 2014, in Docket No. 120209-WS, *In re: Application for increase in water and wastewater rates in Marion, Orange, Pasco, Pinellas, and Seminole Counties by Utilities, Inc. of Florida*; and PSC-14-0283-PAA-WS, issued May 30, 2014, in Docket No. 130212-WS, *In re: Application for increase in water and wastewater rates in Polk County by Cypress Lakes Utilities, Inc.*

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recovery. We have also previously approved this adjustment to capitalize labor associated with plant projects.⁴⁷ As such, we hereby decrease salaries and wages expense by \$61,245 for water and \$353,675 for wastewater. A corresponding adjustment shall be made to decrease payroll tax expense by \$4,685 for water and \$27,056 for wastewater.

3. New Employee Positions

UIF requested the addition of four new employee positions as pro forma expense adjustments. The Utility also requested adjustments to telephone expense and truck fleet expense related to the new employees, which will be discussed in more detail below. The four requested positions included a meter reader, a meter technician, a full-time water/wastewater operator, and a part-time water/wastewater operator being converted to full-time. For the requested meter reader position, UIF did not provide any description or information supporting the need for the position in its MFRs, witness testimony, or through discovery. The Utility also stated that none of the additional employees it requested had been hired.

Table 15
UIF Requested Salary Adjustments for New Employees

Position	Requested Salary Adjustment
Meter Reader	\$29,000
Meter Technician	\$40,956
Water/Wastewater Operator	\$52,000
Water/Wastewater Operator	\$18,400

In response to discovery, UIF stated that the meter technician would test, calibrate, repair, and/or replace water meters in the Sanlando system. During the test year, Sanlando had experienced excessive unaccounted for water and the Utility indicated additional support was needed to flow test the large meters in the system. Sanlando has over 300 large meters in use which, due to the age of the meters, may be under-recording water use. UIF also stated that the current field staff was barely able to test ten percent of its meters annually, as required by this Commission, as well as fulfill the meter tests requested by customers and required by the water management district. The Utility listed that a single meter technician was employed by UIF; however, it also staffed nearly 30 field technicians, who also perform some meter related tasks.

An additional full-time water/wastewater operator was requested primarily in support of the Lake Groves WTP and WWTP, and occasionally for the Barrington WWTP. The Utility stated that this new full-time operator was needed to operate, maintain, manage, and monitor the Lake Groves WTP following the addition of chlorine dioxide to its treatment process. The position would also provide additional support at the Lake Groves WWTP, where plant flows

⁴⁷ Order Nos. PSC-99-1399-PAA-WU, issued July 21, 1999, in Docket No. 981663-WU, *In re: Application for staff-assisted rate case in Orange County by Tangerine Water Company, Inc.*; PSC-17-0209-PAA-WU, issued May 30, 2017, in Docket No. 160065-WU, *In re: Application for increase in water rates in Charlotte County by Bocilla Utilities, Inc.*

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have continued to increase due to customer growth in the service area, and the employee would help with the daily reclaimed water volume delivered to reuse customers. When needed, the new employee would also assist with monitoring, operating, and managing of the Barrington WWTP, which was acquired in 2019, and provide additional support during preparation and recovery from storms. As with the Eagle Ridge and Cross Creek WWTPs discussed below, the Lake Groves WWTP must be staffed by a certified operator for a minimum of six hours per day, seven days a week. For Barrington and Lake Groves, UIF indicated it had a combined total of five water/wastewater operators assigned to the two systems.

The conversion of a part-time water/wastewater operator position to a full-time position would be in support of the Eagle Ridge, Cross Creek, Sandalhaven, and Lake Placid systems. The Utility stated that the Eagle Ridge and Cross Creek WWTPs must be staffed a minimum of six hours per day, seven days a week to meet DEP Part III public access reclaimed water requirements. The conversion to a full-time position would provide an increase of 16 hours per week of available man-hours to staff the Cross Creek WWTP, particularly on weekends. Furthermore, the full-time position would allow for staffing at either of the Eagle Ridge or Cross Creek WWTPs in the event one of the other three plant operators was on leave or in training. UIF stated that based on recent storm events, additional manpower was needed to prepare for and recover from storms impacting its systems. For the Eagle Ridge, Cross Creek, and Lake Placid WWTPs, UIF specified that it had a combined total of four operators assigned to the three systems.

OPC witness Crane testified that it was inappropriate to include additional employees unless other corresponding adjustments were also made. Witness Crane argued that the costs the Utility incurred during the test year were the costs required to provide water and wastewater service, which included its employee base at the time. UIF's request for additional employees did not also include an adjustment to its water or wastewater sales to reflect post-test year growth. Witness Crane testified that the Utility had experienced customer growth over the period from December 2016 to the end of the test year, which included approximately 4 percent for water and 4.6 percent for wastewater. Specific to the test year, witness Crane stated that UIF experienced growth "of approximately 1.7 percent in the water utility and of 2.3 percent in the sewer utility." Therefore, witness Crane recommended that if the costs for the additional employees were included, a corresponding adjustment should be made to reflect additional revenues related to customer growth or, at a minimum, the actual growth that occurred during the test year should be annualized.

For the new meter technician and the part-time position moving to full-time, UIF did not indicate customer growth as a factor in the need for the additional employees. Instead, the two new positions would be to support existing operations, which require additional manpower to meet the necessary meter testing and DEP staffing requirements. For the new full-time operator position, the Utility stated that in addition to increased plant flows, an additional operator was needed due to the treatment change at Lake Groves and due to the recent acquisition of the Barrington system. Taking into account the information provided by UIF for the additional employees and the argument presented by witness Crane, customer growth does not appear to be the primary driver for the requested positions.

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Considering the size of the Sanlando system, that only one meter technician is currently employed, and the Utility is attempting to address the issue of unaccounted for water, the addition of a new meter technician position for Sanlando appears reasonable. We find that moving a part-time operator position to full-time is reasonable in order to ensure DEP staffing requirements are met for the Eagle Ridge, Cross Creek, Sandalhaven, and Lake Placid systems. Furthermore, accounting for the recent addition of the Barrington WWTP and the new treatment system at the Lake Groves WTP, we find that the addition of a new operator position to support those systems is also reasonable. Finally, due to a lack of support, we do not approve of the meter reader position requested by UIF.

UIF allocated salary and wages and pensions and benefits expense for the requested meter reader based on ERCs. As such, we approve decreasing UIF's requested salary and wages expense by \$15,121 ($\$29,000 \times 52.14\%$) for water and \$13,879 ($\$29,000 \times 47.86\%$) for wastewater. Additionally, we approve a corresponding adjustment to decrease UIF's requested pensions and benefits expense by \$7,830 ($\$15,017 \times 52.14\%$) for water and \$7,187 ($\$15,017 \times 47.86\%$) for wastewater. There shall also be a corresponding adjustment to decrease payroll tax expense by \$1,287 for water and \$1,181 for wastewater.

4. Labor Escalator

The Utility requested an adjustment to increase salary and wages and pensions and benefits expense by 3.75 percent. This includes two parts: (1) a 3.00 percent pro forma increase for the year after the test year, and (2) a 0.75 percent increase to annualize test year salaries that were increased by three percent in April of the test year. OPC witness Crane recommended limiting this adjustment to 3.0 percent due to her belief that any further increase would essentially reflect costs in 2021. However, as UIF witness Swain indicated in her rebuttal testimony, the extra 0.75 percent increase is used to annualized the test year increase, not to move the increase beyond 2020. Further, the same 3.75 percent labor escalator was allowed in UIF's prior rate case in Order No. PSC-2017-0361-FOF-WS.⁴⁸ Therefore, we approve no adjustment.

5. Chemicals Expense

UIF requested a \$71,653 adjustment to chemicals expense for the Lake Groves and Summertree systems. For the Lake Groves system, UIF requested an increase of \$66,653 to annualize hydrochloric acid and sulfuric acid chemical costs. The Utility stated the Lake Groves water treatment process was upgraded in June 2019, which uses hydrochloric acid to maintain the level of disinfection byproducts below the required amount. For its Lake Groves system, UIF indicated that a six-month supply of hydrochloric acid is \$1,121, which results in an annual cost of \$2,242.

Further, the Utility stated that sulfuric acid is used to pretreat the raw water from Lake Groves Well 3. However, Well 3 could not be used for the first six months of 2019 while

⁴⁸ Order No. PSC-2017-0361-FOF-WS, issued September 25, 2017, in Docket No. 20160101-WS, *In re: Application for rate increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*

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upgrades were being completed; therefore, no sulfuric acid was purchased during those months. In response to discovery, UIF indicated that a six-month supply of sulfuric acid is \$37,205, which results in an annual cost of \$74,410. This results in an annual chemical cost of \$76,652 (\$74,410 + \$2,242) for hydrochloric acid and sulfuric acid for the Lake Groves system. However, UIF included \$38,914 for sulfuric acid and hydrochloric acid chemicals in its MFRs for the test year. Therefore, we find that an adjustment be made to reduce pro forma chemicals expense for Lake Groves by \$28,914 (\$76,652 - \$38,914 - \$66,653).

For the Summertree system, UIF requested a \$5,000 adjustment for chlorine dioxide chemicals as part of a pilot study performed under project PCF-38. The Utility stated that the study was initiated to reduce chlorine demand in the piping system. Witness Flynn stated that DEP approved the pilot study on August 8, 2020, and the pilot study will continue at least through January 19, 2021 or longer. In addition, witness Flynn stated the required amount of chlorine dioxide is expected to decrease over time as the system reaches equilibrium over the course of the study. Therefore, we find that the \$5,000 adjustment for chlorine dioxide shall be removed, as the study is still ongoing, and the required amount of chlorine dioxide is unknown. Based on the above, we hereby find that a total reduction of \$33,914 (\$28,914 + \$5,000) shall be made to chemicals expense.

6. Contractual Services - Testing Expense

UIF requested a \$24,500 adjustment to Contractual Services – Testing, indicating that the adjustment was related to polyfluoroalkyl substances (PFAS) testing for the Summertree system. In response to discovery, the Utility stated that in 2020, it had “sampled and analyzed each water system’s point of entry for the presence of PFAS constituents, specifically PFAS and PFOA (Perfluorooctanoic acid).” We requested documentation supporting the amount of \$24,500, and UIF provided an invoice totaling \$2,850 for testing related to its Orangewood system. However, the invoice provided was billed to the Utility’s parent company and no specific system name was indicated on the document. No other documentation or justification was provided to support the \$24,500 adjustment. Therefore, we hereby remove \$24,500 from Contractual Services - Testing due to a lack of documentation and justification to support the adjustment.

7. Contractual Services - Other Expense

UIF requested an increase of \$33,600 to Contractual Services - Other, indicating that the adjustment was related to increased ground maintenance costs for the Sandalhaven and Eagle Ridge systems. For the Eagle Ridge system, UIF requested a \$22,800 adjustment for the increased cost to maintain new sod and native plant species. As part of project PCF-5, the Utility stated these items were required to be installed by Lee County to establish a visual buffer for a new field office and surge tank. In response to discovery, UIF provided a monthly contract price for the groundwork totaling \$2,500. This results in an annual contract service cost of \$30,000 for the Eagle Ridge system. Therefore, we find that an adjustment shall be made to increase contract services by \$7,200 (\$30,000 - \$22,800) for the Eagle Ridge system.

For the Sandalhaven system, UIF requested a \$10,800 adjustment for ground maintenance costs. In response to discovery, the Utility indicated it replaced the previous ground

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maintenance contractor for the Sandalhaven system because they did not adequately maintain the property or provide maintenance at any of the 13 lift stations. In response to discovery, UIF provided a monthly contract for the new ground maintenance contractor totaling \$900. This results in an annual contract service cost of \$10,800 for the Sandalhaven system. However, since the contract started in July 2019, UIF included \$5,400 in its MFRs for the test year. Therefore, we find that an adjustment shall be made to decrease contractual services by \$5,400 (\$10,800 - \$5,400) for the Sandalhaven system to account for the six months of the annual contract service already included. Based on the above, we hereby find that a total adjustment shall be made to increase Contractual Services - Other by \$1,800 (\$7,200 - \$5,400).

8. Telephone Expense

As discussed above, UIF requested the addition of four new employees and the costs associated with those positions. One of the requested adjustments related to the new employees was an increase to telephone expense of \$1,917 for water and \$1,759 for wastewater. In response to discovery, the Utility indicated that these adjustments were originally for four new employees; however, the new positions included a current part-time employee moving to full-time. Therefore, only three of the new positions would require a phone and UIF decreased its requested adjustments to \$1,437 for water and \$1,320 for wastewater. As discussed above, we hereby approve three of the requested employees, including the conversion of the part-time position to full-time. Based on the documentation and justification provided by the Utility, we find that the appropriate telephone expense shall be \$958 for water and \$880 for wastewater for the two new positions requiring phones. Therefore, we hereby decrease UIF's requested telephone expense adjustments by \$959 for water and \$879 for wastewater.

9. Truck Fleet Expense

UIF requested an adjustment to truck fleet expense of \$6,931 for water and \$6,362 for wastewater. The Utility indicated that these adjustments were for three new vehicles, which would be needed for the new employees. UIF stated that it currently has "79 vehicles assigned to Utility employees. The adjustment in fleet expense reflects the increase to 82 assigned vehicles and thus a pro rata increase of 3.8 percent in fleet expense in the test year." We updated the requested truck fleet expense amounts to \$4,615 for water and \$4,236 for wastewater to reflect our disallowance of one new employee. Therefore, we hereby decrease UIF's requested truck fleet expense adjustments by \$2,316 for water and \$2,126 for wastewater.

C. Conclusion

Based on the above, we hereby find that pro forma expense shall be decreased by \$145,884 for water and \$350,418 for wastewater.

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XXVII. Test Year O&M Expense Adjustments

A. Parties' Arguments

1. UIF

In its brief, UIF argued that we should allow for the recovery of lobbying expenses that are for the benefit of customers through rates. UIF claimed that lobbying activities related to Fair Market Value (FMV) legislation would reduce the cost for current customers "by allowing UIF to spread individual system costs over a larger customer base" and would benefit new customers by "achieving economies of scale for the systems acquired." Given the "unique nature" of the lobbying, UIF stated that it is appropriate for these costs to be recovered through rates.

Additionally, UIF argued that we have frequently approved the recovery of costs associated with Incentive Compensation Plans (ICP) through rates. UIF contended that OPC witness Crane's recommendation to disallow 50-percent of the expense was arbitrary. UIF further stated that arbitrary action, such as that recommended by OPC, has previously been struck down in court.⁴⁹ UIF also stated that unlike the Florida Power & Light Company (FPL) case that OPC relied upon in its argument to disallow, witness Crane made no attempt to evaluate whether total compensation to employees was unnecessary or unreasonable, nor did the witness argue such.⁵⁰ UIF further highlighted the testimony of UIF witness Elicegui which presented results of a study in order to demonstrate that total compensation is reasonable and concluded that "compensation amounts compared favorably to the market."

In its brief, UIF also argued that we recognize that "a utility may legitimately include severance payments to employees as part of its base rate calculation."⁵¹ UIF contended that OPC witness Crane's testimony stating that UIF did not provide detail for this expense was false and that details were provided in a discovery request response. UIF also stated that while this Commission usually adopts the three-year average when determining the appropriate amount for variable expenses, the Utility did not request an adjustment to the test year, as the test year amount was less than the three-year average approach.

2. OPC

In its brief, OPC asserted that this Commission has a policy of disallowing lobbying expenses. OPC argued that UIF did not present evidence of any benefit received by customers for its lobbying related to its Fair Market Value (FMV) legislation and as such any recovery through rates would be inappropriate. Furthermore, OPC claimed that the bill would have benefited shareholders instead of customers. Additionally, OPC stated that while UIF claimed both customers and shareholders would have benefited from the legislation, this Commission should disallow the entire cost because the Utility failed to present evidence that it attempted to

⁴⁹ *Florida Bridge Company v. Bevis*, 363 So. 2d 799 (Fla. 1978).

⁵⁰ Order No. PSC-10-0153-FOF-EI, issued March 17, 2010, in Docket No. 080677-EI, *In re: Petition for increase in rates by Florida Power & Light Company*.

⁵¹ Order No. PSC-92-0708-FOC-TL, issued July 24, 1992, in Docket No. 910980-TL, *In re: Application for a rate increase by United Telephone Company of Florida*.

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quantify the actual benefit to customers or apportion the costs between customers and shareholders. OPC concluded that since UIF's FMV bill did not pass the 2020 legislature it could not have benefited the Utility's customers and is therefore reason alone to disallow the recovery of related expenses through rates.

In its brief, OPC argued that the recovery of costs through rates related to the Employee Deferred Incentive Compensation Program (EIP) should be disallowed, as it was designed to primarily benefit shareholders. OPC maintained that all costs of the EIP that are tied to financial metrics should be recovered from shareholders and not customers as the recovery of costs through rates would be inconsistent with a utility's mandate to provide safe and reliable utility service at the lowest reasonable cost. OPC reiterated this point by contending that this Commission has frequently disallowed the recovery of costs associated with EIPs that are determined by financial metrics. OPC further stated that UIF failed to perform a study comparing its EIP to other EIPs in which this Commission allowed for the recovery of costs through rates. Additionally, OPC stated that this Commission has found that incentive compensation tied to earning per share could have consequences contrary to customer welfare and safety. While witness Crane recommended only a 50-percent disallowance of costs associated with incentive compensation in her testimony, OPC contended that because UIF failed to meet its burden of proof to justify the costs of the Long-Term Incentive Plan (LTIP), this Commission should disallow 100 percent of costs related specifically to the LTIP.

In its brief, OPC argued that non-qualified retirement benefit plans should not receive favorable treatment by this Commission, just like they do not receive favorable treatment by the Internal Revenue Service (IRS). OPC stated that these expenses are not under the same scrutiny as qualified retirement benefit plans. Under the Employee Retirement Income Security Act (ERISA), OPC claimed, qualified plans must adhere to strict requirements including a \$285,000 compensation cap and the prohibition of discrimination among employees regarding retirement benefits. OPC continued that non-qualified plans do not fall under the purview of ERISA and by offering these plans, a company is able to provide additional benefits to highly paid officers and executives. OPC contended that shareholders, not ratepayers, should fund these benefits.

In its brief, OPC argued that all of UIF's parent company's severance costs should be disallowed because UIF did not show that these costs are necessary to provide safe and reliable utility service. OPC stated that UIF failed to meet its burden of proof by providing details regarding the reason for the costs, the recurring nature of the costs, the number of employees involved, and the underlying factors that resulted in these severance payments. OPC also added that while the needed detail was not provided, including any non-recurring costs in ongoing rates by itself would be inappropriate.

B. Analysis

1. Incentive Compensation

UIF witness Deason testified that the Utility's EIP is a short-term incentive plan for the executive management team and select senior leaders at the parent company level. The only person in Florida who is subject to the EIP is the president of UIF, Gary Rudkin. All other

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employees under this plan are at the parent company level. The largest weighting factor in this plan is financial performance.

OPC witness Crane testified that in order for any award to be made under the EIP, the company must achieve a targeted level of return on investment and must be free from any code red safety or environmental incidents. Seventy percent of the company performance metric is based on financial performance measures. OPC witness Crane is recommending that the incentive compensation award costs that are tied to financial metrics be recovered from the Utility's shareholders, and denied for recovery in this case. Given the overall EIP's objective to maximize shareholder value and the overall requirement that certain financial metrics must be achieved prior to any awards being made, OPC witness Crane recommended an adjustment to eliminate 50 percent of the incentive compensation costs identified by UIF.

In rebuttal testimony, UIF witness Deason argued that OPC witness Crane made no allegations or presented any evidence that the total compensation paid to employees at UIF, or its parent company CORIX, is unnecessary or unreasonable. UIF witness Deason referenced past Commission orders that allowed recovery for incentive plans tied to the achievement of corporate goals because they provide an incentive to control costs.⁵² We also allowed incentive compensation when a utility's total compensation package was set near the median level of benchmarked compensation. UIF witness Elicegui testified that charges included in the revenue requirement reflect shared and Corporate Services provided from the parent company at cost with no mark-up or profit. To compare with outside providers, adjusted shared and Corporate Service costs were reduced to an hourly rate and compared to market benchmarks. According to these benchmarks for Management Consultants, UIF's costs were less than half of what the costs would have been from an outside provider.

As referenced in earlier orders, our practice has been to allow incentive compensation in rates if the total compensation is at or below median market benchmarks. All of the employees included in the EIP, with the exception of the President of UIF, are at the parent company level. Based on UIF witness Elicegui's analysis of corporate service costs, we find that the total compensation package of employees at the parent company level are reasonable for recovery. Therefore, we make no adjustment. In so finding, "it is the [Commission's] prerogative to evaluate the testimony of competing experts and accord whatever weight to the conflicting opinions it deems necessary."⁵³

2. Severance Pay

During the test year, UIF incurred approximately \$57,000 in severance expense, all of which was allocated down from the parent company level which totaled \$748,552, in Canadian dollars, prior to allocation. OPC witness Crane recommended removing this expense for two reasons. First, OPC witness Crane asserted that UIF provided no details regarding these severance costs and, therefore, has not met its burden of proof to demonstrate that these costs are

⁵² Order Nos. PSC-92-1197-FOF-EI, issued October 22, 1992, in Docket No. 910890-EI, *In re: Petition for a rate increase by Florida Power Corporation*; PSC-09-0283-FOF-EI, issued April 30, 2009, in Docket No. 20080317-EI, *In re: Petition for rate increase by Tampa Electric Company*.

⁵³ See *Gulf Power Co. v. FPSC*, 453 So. 2d 799, 805 (Fla. 1984)

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necessary to the provision of safe and reliable utility service. Second, she pointed out that we do not know if these are recurring costs.

In rebuttal testimony, UIF witness Deason argued that OPC witness Crane was mistaken in both of her arguments. He first explained that detail for the test year was in fact provided in response to OPC discovery. He also stated that the amount of severance expense is recurring, but varies from year to year. He pointed to recent fluctuations in the expense to illustrate his point. In 2017, the parent company recorded \$0 in severance expense, but then recorded \$4,415,800, in Canadian dollars, in 2018. For variable expenses such as this, UIF witness Deason argued that it is common regulatory practice to take a three-year average for rate setting purposes. In this case, UIF reflected the test year amount, which is significantly less than the three-year average.

All of the severance expense incurred in this case comes from the parent company level. As discussed above, for incentive compensation, the overall compensation package for employees at the parent company level is well below the level UIF would incur if they outsourced management services. We find that, although severance pay is a variable expense, it is reasonable to expect some level of severance expense in any given year. Therefore, we shall make no adjustment.

3. Non-Qualified Retirement Benefits

OPC witness Crane testified that UIF included non-qualified retirement benefits to its employees in the test year and recommended the removal of this expense. These non-qualified plans provide supplemental retirement benefits for key executives that are in addition to the normal retirement programs provided by the Utility. “Qualified” plans limit the amount of compensation that can be considered for purposes of determining pension benefits. In addition, non-qualified plans allow a company to avoid rules and regulations that apply to qualified plans, such as requirements of the Employee Retirement Income Security Act. Non-qualified plans also do not qualify for the more favorable tax treatment that is available to qualified retirement plans under the Internal Revenue Service (IRS) Tax Code. These benefits are available to a very small group of officers and other executives that also receive the normal retirement plan benefits offered by UIF.

UIF witness Deason argued that OPC witness Crane’s recommended adjustment to remove non-qualified retirement expense from the test year is inconsistent with prudent regulatory policy. He once again maintained that her analysis focused entirely on how certain employees are compensated, not on how much they are compensated, and that she provided no analysis demonstrating that the total amount of compensation is excessive to the marketplace for these employees. He asserted that UIF and CORIX have designed its compensation packages in order to be competitive in attracting and retaining well qualified and effective employees, so that it will achieve its mandate of providing safe and reliable service.

Although we agree with UIF’s focus on evaluating total compensation, we find that the distinguishing factor that requires further consideration is OPC’s point that non-qualified plans allow a utility to avoid certain rules and regulations, while also receiving less favorable tax treatment from the IRS. We agree that these expenses shall not be borne by the customers. UIF

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directly incurred non-qualified retirement plan costs of \$26,853 in the test year. The Utility was also allocated approximately 22 percent of WSC's total costs, resulting in an allocation of \$27,985 ($\$127,203 \times 22\%$). The total amount of the expense, \$54,838 ($\$26,853 + \$27,985$), was allocated to water and wastewater based on ERCs. Therefore, we hereby decrease pensions and benefits expense by \$28,592 ($\$54,837 \times 52.14\%$) for water and \$26,245 ($\$54,837 \times 47.86\%$) for wastewater.

4. Lobbying Expense

In OPC's first set of interrogatories to UIF, OPC asked for expenses included in the filing that were directed toward lobbying activities by the organization. In response to OPC's discovery, UIF provided a spreadsheet showing about \$76,000 included in expense paid to several companies for lobbying. In response to follow up discovery from OPC, UIF indicated \$45,827 paid to Gunster was to monitor legislative activity on the issue of Fair Market Valuation (FMV) with respect to water and wastewater acquisitions. The remaining expenses were utilized for regulatory assistance. UIF witness Snow suggested that passage of the FMV legislation would not only benefit UIF but also the customers due to increasing UIF's ability to acquire underfunded systems and offer robust financial and operational resources as well as allowing the Utility to spread individual system costs across an even larger customer base thus achieving economies of scale. OPC witness Crane testified that lobbying costs are not necessary for the provision of safe and adequate utility service and that lobbying activities of a regulated utility may be focused on policies and positions that enhance shareholders but may not benefit, and may even harm, ratepayers. It was indicated in UIF witness Snow's testimony that the FMV legislation that Gunster was monitoring for UIF did not pass the Legislature. We agree with witness Crane that it has been our practice to disallow lobbying expense.⁵⁴ Therefore, we hereby decrease O&M expenses by \$23,894 ($\$45,827 \times 52.14\%$) for water and \$21,933 ($\$45,827 \times 47.86\%$) for wastewater.

5. Holiday Party

In response to OPC's discovery, UIF indicated that the Utility has one office holiday social event each year. During the test year, the event was held at a restaurant in Orlando at a cost of \$5,079. This amount was allocated between water and wastewater based on ERCs or \$2,648 for water and \$2,431 for wastewater. OPC witness Crane recommended that costs for the annual holiday social event be borne by shareholders instead of ratepayers. UIF provided no testimony opposing OPC witness Crane's recommendation to remove these costs from expenses. We agree that these social costs shall not be borne by ratepayers and shall be removed. Therefore, we hereby decrease O&M expense by \$2,648 for water and \$2,431 for wastewater.

⁵⁴ Order Nos. PSC-11-05470-FOF-EI, issued November 23, 2011, in Docket No. 110009-EI, *In re: Nuclear cost recovery clause*; and PSC-14-0025-PAA-WS, issued January 10, 2014, in Docket No. 120209-WS, *In re: Application for increase in water and wastewater rates in Marion, Orange, Pasco, Pinellas, and Seminole Counties by Utilities, Inc. of Florida.*; and PSC-14-07140-FOF-EI, issued December 31, 2014, in Docket No. 140007-EI, *In re: Environmental cost recovery clause.*

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6. Infiltration & Inflow

This is a fall out to Section VI, which is a Type II stipulated issue. In its original filing, UIF included O&M expense adjustments to reflect I&I in Lincoln Heights and Orangewood. However, the Utility's filing should have also included O&M adjustments to reflect I&I in Summertree. UIF witness Swain provided these corrections to her testimony. As such, we hereby decrease purchased wastewater expense by \$4,901 and purchased power expense by \$107 for wastewater to reflect her corrections.

7. Sludge Removal Expense

The Utility recorded sludge removal expense of \$639,081 for wastewater. This is an increase of \$199,434 from the prior rate case test year. UIF stated that DEP has severely restricted the volume of biosolids that can be land applied to agricultural properties located in the Lake Okeechobee basin. This has caused an increase in prices for sludge hauling contractors. We make no adjustments, and therefore approve sludge removal expense of \$639,081 for wastewater. OPC did not made a recommendation on sludge removal expense.

8. Chemicals

The Utility recorded chemical expense of \$457,621 for water and \$420,056 for wastewater for a total of \$877,677. We reviewed UIF's chemical expenses from the prior rate case test year which were \$367,915 for water and \$453,080 for wastewater for a total of \$820,995. We calculated an increase in chemical expense of \$56,682 from the prior rate case test year. The Utility made a negative \$40,974 adjustment to water chemicals expense and a positive \$102,121 adjustment to wastewater chemical expense. These adjustments include the annualization of test year chemical expenses, due to DEP regulations, as well as corrections to allocations made at some facilities. We make no additional adjustments, and therefore approve a chemicals expense of \$416,646 for water and \$522,177 for wastewater. OPC did not made a recommendation on either water or wastewater chemical expenses.

C. Conclusion

Based on the above, we find that test year O&M expenses shall be decreased by \$55,135 (-\$28,592 - \$23,894 - \$2,648) for water and \$55,617 (-\$26,245 - \$21,933 - \$2,431 - \$4,901 - \$107) for wastewater.

XXVIII. STIPULATED—Operating Expense Amortization

We approved a Type II stipulation addressing whether any adjustments should be made to operating expense amortizations, as follows:

Pursuant to Order No. PSC-2017-0361-FOF-WS, the amortization expense associated with early retirements is \$46,750 for the Summertree water system, \$193,294 for the Longwood wastewater system, and \$30,511 for the Sandalhaven wastewater system. Therefore, amortization expense shall be increased by \$46 and \$121,916 for water and wastewater, respectively.

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XXIX. Taxes Other Than Income (TOTI)

A. Parties' Arguments

1. UIF

UIF argued that TOTI is a fallout adjustment determined by Sections III, XVI, and XXVII.

2. OPC

OPC reflected adjustments related to pro forma plant projects; these are discussed in Sections III, IX, XXVI, and XXVII. OPC argued that a fallout adjustment should be made to payroll tax expense to reflect the impact of OPC's recommended adjustments to eliminate cost for new employee positions, reduce the annual labor cost escalator, eliminate severance costs, and reduce incentive compensation award costs. OPC also stated that fallout adjustments should be made to property tax expense to reflect reductions associated with its recommended adjustments to pro forma plant projects and non-U&U adjustments to rate base for wastewater.

B. Analysis

This is a fall out issue. Based on our approved adjustments to test year revenues and to remove the Utility's requested increase, regulatory assessment fees (RAFs) shall be reduced by \$125,751 for water and \$293,349 for wastewater. To reflect our approved adjustment to remove capitalized labor from salaries and wages expenses, payroll taxes shall be reduced by \$4,685 for water and \$27,056 for wastewater. To reflect our approved adjustment to pro forma salaries, payroll taxes shall be reduced by \$1,287 for water and \$1,181 for wastewater. To reflect our approved adjustments to pro forma plant, property taxes shall be reduced by \$2,328 for water and \$7,778 for wastewater. Lastly, to reflect our approved non-U&U adjustment to rate base, property taxes shall be reduced by \$9,743 for wastewater. In total, test year TOTI shall be decreased by \$134,050 ($-\$125,751 - \$4,685 - \$1,287 - \$2,328$) for water and \$339,107 ($-\$293,349 - \$27,056 - \$1,181 - \$7,778 + \$9,743$) for wastewater.

XXX. Test Year Depreciation Expense

A. Parties' Arguments

1. UIF

UIF argued that the test year depreciation expense is a fall out adjustment from determinations made in Sections II, III, and XVI.

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2. OPC

In its brief, OPC reflected adjustments related to pro forma plant projects; these are discussed in Sections III, IV, and IX. OPC argued that a reduction should be made to water and wastewater depreciation expense of \$11,914 and \$300,001, respectively, based on its pro forma plant recommendations. OPC also stated that a reduction of \$101,214 should be made to wastewater to reflect non-U&U rate base adjustments.

B. Analysis

UIF witness Swain made test year adjustments to reclassify the amortization of early retirements and to correct the over-amortization of Sandalhaven intangible plant. The Utility also made adjustments to annualize depreciation expense for test year plant additions. Although it addressed adjustments corresponding to pro forma plant and non-U&U rate base, OPC did not dispute the Utility's other adjustments to depreciation expense. Further, Commission staff witness Dobiac's testimony did not reflect any audit adjustments to the test year depreciation expense. As such, we find that the Utility's adjustments are appropriate.

The remaining adjustments to depreciation expense in UIF's initial filing are related to a non-U&U adjustment to rate base and pro forma plant projects. Pro forma and non-U&U adjustments to depreciation expense are addressed in Sections III, IV, and IX.

C. Conclusion

We hereby make no further adjustments to the adjusted test year depreciation expense. All necessary adjustments to depreciation expense shall be made as set forth and discussed in Sections III, IV, and IX.

XXXI. Test Year CIAC Amortization Expense

A. Parties' Arguments

1. UIF

In its brief, UIF stated that this is a fall out issue from the determination of Section III.

2. OPC

In its brief, OPC reflected adjustments related to pro forma plant projects; these are discussed in Sections III, IV, and IX. OPC stated that water and wastewater CIAC amortization expense should be reduced by \$1,667 and \$6,555, respectively, in relation to its adjustments to plant additions. OPC also stated that CIAC amortization expense should be increased by \$24,123 should be made to reflect non-U&U rate base adjustments.

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B. Analysis

In its initial filing, the Utility's only test year adjustment to CIAC amortization was to correct the over-amortization of CIAC. This adjustment was made to the same three systems in UIF's last rate case.⁵⁵ Further, Commission staff witness Dobiac's testimony did not reflect any audit adjustments to test year amortization of CIAC expense. The remaining adjustments to CIAC amortization in UIF's initial filing are related to a non-U&U adjustment to rate base and retirements associated with pro forma plant projects. Pro forma and non-U&U adjustments to CIAC amortization are addressed in Sections IV and IX. As such, we hereby make no further adjustments to the adjusted test year CIAC amortization. All necessary adjustments to CIAC amortization shall be made as set forth and discussed in Sections IV and IX.

C. Conclusion

We hereby make no further adjustments to the adjusted test year CIAC amortization. All necessary adjustments to CIAC amortization shall be made as set forth and discussed in Sections IV and IX.

XXXII. Test Year Income Taxes

A. Parties' Arguments

1. UIF

Income tax expense is a fallout of the specific revenues and expenses requested. Regarding the amortization of unprotected excess deferred income taxes, UIF argued they should be flowed back to customers over ten years, consistent with our prior decisions. Regarding the state corporate income tax rate, the rate will revert back to 5.5 percent on January 1, 2022. UIF argued this is a known and measurable change and as such should be applied to UIF's income in this case.

2. OPC

Income taxes depend on the specific level of revenues authorized by this Commission. Regarding the flow back of unprotected excess deferred income taxes, OPC argued UIF should return unprotected excess deferred income taxes to customers over five years. OPC witness Crane testified that, given the pandemic and financial difficulties of Floridians, a five-year versus ten-year amortization will provide needed relief to customers. Regarding the state corporate income tax rate, OPC argued that income taxes should reflect a rate of 4.458 percent. OPC argued that on September 12, 2019, the Florida Department of Revenue announced a reduction in the rate from 5.5 percent to 4.458 percent for tax years 2019, 2020, and 2021. For the historical test year of 2019, the rate was 4.458 percent. OPC argued that we should set rates to collect the

⁵⁵ Order No. PSC-2017-0361-FOF-WS, issued September 25, 2017, in Docket No. 20160101-WS, *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties by Utilities, Inc. of Florida.*

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rate in effect at the time of setting rates and during the test year, as this is the only equitable, known and measurable tax rate.

B. Analysis

1. Income Taxes

As a result of our approved adjustments, the appropriate amount of test year income taxes is \$375,393 for water and \$111,993 for wastewater. In addition, as discussed in Section XXXIII below, we have calculated a revenue increase of \$1,696,108 for water and \$4,635,151 for wastewater. As a result, income taxes shall be increased by \$408,589 for water and \$1,116,599 for wastewater to reflect the change in revenues.

2. Amortization of Unprotected Excess Deferred Income Taxes

We have discretion regarding the period over which to amortize unprotected excess deferred income taxes. In the recent past, we have approved amortization periods of as much as 10 years and in one instance, a settlement agreement, an amortization period of 1 year.

As pointed out by OPC witness Crane, unprotected excess deferred income taxes represent money that is owed to customers. We find that it is appropriate to return excess deferred income taxes to customers as quickly as possible as long as it does not create a cash flow problem for the Utility, i.e. a liquidity problem with regard to operations. OPC witness Crane testified that UIF has not provided any evidence that a five-year amortization period would create a cash flow problem for UIF. When UIF witness Deason was asked at hearing if he could provide any analysis that indicated a five-year amortization would cause a cash flow problem for UIF, he could not. Consequently, we find that a five-year amortization period is reasonable and hereby approve a five-year amortization for unprotected excess deferred income taxes.

3. State Corporate Income Tax Rate

In 2019, the Florida Department of Revenue announced a reduction in the state corporate income tax rate from 5.5 percent to 4.458 percent for tax years 2019, 2020, and 2021. As shown on Exhibit 186, the state corporate income tax rate is expected to revert to 5.5 percent on January 1, 2022. UIF argued that this is a known and measurable change and as such should be applied to UIF's income in this case. However, that change will occur seven months after UIF's rates are to go into effect.

OPC argued that the rate for the historical test year was 4.458 percent and that rate should be applied. Furthermore, OPC argued, that UIF witness Deason agreed that if the rate is set at 5.5 percent, there would be a period of over-collection throughout 2021.

At hearing, our staff asked UIF witnesses Deason and Swain if a composite state corporate income tax rate was developed, using a four-year period that incorporated a 4.458 percent rate for the seven months of 2021 and a 5.5 percent rate for the remainder of the 4-year

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period, whether that would allow UIF the opportunity to earn its expected amount of state corporate income taxes over the 4-year period. Both witnesses answered yes, it would. However, both witnesses qualified their answers by indicating that if UIF did not seek a rate case for new rates becoming effective by the beginning of year five, that the allowance for income tax expense would be insufficient after year four.

A composite state corporate tax rate that incorporates a 4.458 percent rate for the seven months of 2021 and a 5.5 percent rate for the remainder of the four-year period will allow UIF the opportunity to earn its expected amount of state corporate income taxes over the next four years. UIF has filed rate cases in 2012, 2016, and 2020. Consequently, we find that using a four-year period to develop a composite rate is reasonable. It should be noted, when asked about how long UIF would agree to stay-out if the Sewer and Water Infrastructure Mechanism (SWIM) program were approved, witness Deason indicated two years. Using a four-year composite tax rate, and all other things being equal, if UIF were to file a rate case for new rates becoming effective by the beginning of year five, UIF would actually recover more than its expected income tax expense. That is because 5.5 percent would represent a greater percent of actual income tax expense than the percentage of 4.458 percent used in the composite rate.

C. Conclusion

As a result of our approved adjustments, the appropriate amount of test year income taxes is \$375,393 for water and \$111,993 for wastewater. In addition, as discussed in Section XXXIII below, we have calculated a revenue increase of \$1,696,108 for water and \$4,635,151 for wastewater. As a result, income taxes shall be increased by \$408,589 for water and \$1,116,599 for wastewater to reflect the change in revenues.

We have discretion regarding the period over which to amortize unprotected excess deferred income taxes. We find that a five-year amortization period is reasonable and hereby approve a five-year amortization.

We find that a composite state corporate income tax rate of 5.348 percent, as opposed to 4.458 percent or 5.5 percent, is reasonable and represents an equitable balancing of interests between customers and shareholders. Consequently, we hereby approve a state corporate income tax rate of 5.348 percent.

XXXIII. Revenue Requirement

A. Parties' Arguments

In its brief, UIF argued that this issue is a fall out based on the determination of all other issues. In its brief, OPC argued that the appropriate revenue requirement should be calculated using a base revenue increase of \$1,129,866 and \$2,720,043 for water and wastewater, respectively.

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B. Analysis

This is a fall out issue. In its filing, UIF requested a revenue requirement to generate annual revenue of \$19,416,372, representing a revenue increase of \$2,812,445, or 16.94 percent, for water and \$26,827,568, representing a revenue increase of \$6,521,686, or 32.12 percent, for wastewater. Consistent with our findings regarding rate base, cost of capital, and operating income issues, the appropriate revenue requirement is \$18,318,024 for water and \$24,943,846 for wastewater. Our approved revenue requirement for water is \$1,696,108 greater than our approved test year revenues of \$16,621,916, or an increase of 10.20 percent. Our approved revenue requirement for wastewater is \$4,635,151 greater than our approved test year revenues of \$20,308,695, or an increase of 22.82 percent. Our approved revenue requirement will allow the Utility the opportunity to recover its expenses and earn a 6.95 percent return on its investment in rate base. Schedule Nos. 3-A and 3-B reflect our approved net operating income and resulting revenue requirement. Our approved adjustments to net operating income are shown on Schedule No. 3-C.

XXXIV. STIPULATED (FALLOUT)—Rate Structures and Rates

We approved a Type II Stipulation addressing the appropriate rate structures and rates for the water systems, as follows:

The appropriate rate structure is a continuation of the existing rate structure and the percentage increase shall be applied as an across-the-board increase to service rates at the time of filing. To determine the appropriate percentage increase to apply to the service rates, miscellaneous revenues of \$363,563 shall be removed from the test year revenues.

The fall out percentage increase to service rates is as follows:

Table 16
 Percentage Service Rate Increase – Water

	<u>Water</u>
1 Total Test Year Revenues	\$16,621,916
2 Less: Miscellaneous Revenues	<u>\$363,563</u>
3 Test Year Revenues from Service Rates	\$16,258,353
4 Revenue Increase	<u>\$1,696,108</u>
5 Percentage Service Rate Increase (Line 4 / Line 3)	10.43%

XXXV. STIPULATED—Private Fire Protection Charges

We approved a Type II Stipulation addressing the appropriate private fire protection charges, as follows:

The appropriate private fire protection charges for UIF shall be calculated based on one-twelfth of the respective base facility charge pursuant to Rule 25-30.465, F.A.C.

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XXXVI. STIPULATED (FALL OUT)—Wastewater Rates and Rate Structures

We approved a Type II Stipulation addressing the appropriate rate structures and rates for the wastewater systems, as follows:

The appropriate rate structure is a continuation of the existing rate structure and the percentage increase shall be applied as an across-the-board increase to service rates at the time of filing. To determine the appropriate percentage increase to apply to the service rates, miscellaneous revenues of \$333,719 shall be removed from the test year revenues.

The fall out percentage increase to service rates is as follows:

Table 17
 Percentage Service Rate Increase – Wastewater

	<u>Wastewater</u>
1 Total Test Year Revenues	\$20,308,695
2 Less: Miscellaneous Revenues	<u>\$333,719</u>
3 Test Year Revenues from Service Rates	\$19,974,976
4 Revenue Increase	<u>\$4,635,151</u>
5 Percentage Service Rate Increase (Line 4 / Line 3)	23.20%

XXXVII. STIPULATED (FALL OUT)—Reuse Rates

We approved a Type II Stipulation addressing the appropriate reuse rates, as follows:

The appropriate rate structure is a continuation of the existing rate structure and the percentage increase shall be applied as an across-the-board increase to service rates at the time of filing. To determine the appropriate percentage increase to apply to the service rates, miscellaneous revenues of \$333,719 shall be removed from the test year revenues.

The fall out percentage increase to service rates is as follows:

Table 18
 Percentage Service Rate Increase – Wastewater

	<u>Wastewater</u>
1 Total Test Year Revenues	\$20,308,695
2 Less: Miscellaneous Revenues	<u>\$333,719</u>
3 Test Year Revenues from Service Rates	\$19,974,976
4 Revenue Increase	<u>\$4,635,151</u>
5 Percentage Service Rate Increase (Line 4 / Line 3)	23.20%

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XXXVIII. STIPULATED—Customer Deposits

We approved a Type II Stipulation addressing the appropriate customer deposits, as follows:

The appropriate customer deposits for UIF shall reflect an average of two months service for residential customers with a 5/8" x 3/4" meter and two times the average customer bill for all other meter sizes.

XXXIX. STIPULATED—Guaranteed Revenue Charges

We approved a Type II Stipulation addressing the appropriate guaranteed revenue charges, as follows:

The guaranteed revenue charges shall remain unchanged.

XL. Allowance for Funds Used During Construction

A. Parties' Arguments

1. UIF

UIF argued that over the years the cost of capital, which is used to establish the AFUDC rate, has varied above and below the current AFUDC rate. Since the cost of capital varies from year-to-year, UIF contends it is not necessary to change the AFUDC rate. UIF witness Swain argued that UIF's current AFUDC rate of 9.03 percent is in compliance with Commission Order No. PSC-2004-0262-PAA-WS, when the Utility previously petitioned this Commission for an AFUDC rate. UIF argued that if the AFUDC rate is changed, it must be based on a cost of capital rate of 7.889 percent.

2. OPC

OPC argued UIF has not updated its AFUDC rate since 2004, despite the fact that interest rates have declined since 2004. OPC argued that UIF's current AFUDC rate of 9.03 percent is excessive, has been in place for 18 years, and negatively impacts Florida customers by unduly causing current customers to pay higher rates than necessary. OPC witness Crane argued that this Commission should authorize a prospective AFUDC rate of 6.73 percent.

B. Analysis

UIF did not request to revise its AFUDC rate in this proceeding and proposed to maintain its current AFUDC rate of 9.03 percent. OPC witness Crane proposed this Commission authorize a prospective AFUDC rate of 6.73 percent. UIF's current AFUDC rate of 9.03 percent is based on the cost of capital for the 12-month period ended December 31, 2002, which includes an ROE of 11.32 percent. Since that time, UIF's cost of capital has decreased by 201 basis points. Witness Crane testified that the debt rate reflected in the 9.03 percent AFUDC rate is based on a

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long-term debt of 7.82 percent and zero short-term debt. Witness Crane opined that in spite of the significant decline in capital costs, UIF has continued to accrue AFUDC at the same rate of 9.03 percent. Based on the record evidence, UIF's current AFUDC rate no longer reflects its current cost of capital and should be revised to reflect UIF's most recent 12-month embedded cost of capital.

Pursuant to Rule 25-30.116(3), F.A.C., the applicable AFUDC rate shall be determined as follows:

(a) The most recent 12-month average embedded cost of capital, except as noted below, shall be derived using all sources of capital and adjusted using adjustments consistent with those used by the Commission in the Company's last rate case.

(b) The cost rates for the components in the capital structure shall be the midpoint of the last allowed return on common equity, the most recent 12-month average cost of short-term debt and customer deposits and a zero cost rate for deferred taxes and all investment tax credits. The cost of long-term debt and preferred stock shall be based on end of period cost. The annual percentage rate shall be calculated to two decimal places.

(c) A company that has not had its equity return set in a rate case must calculate its return on common equity by applying the most recent water and wastewater equity leverage formula.

The embedded cost of capital in the record does not comport with the requirements of Rule 25-30.116, F.A.C. The record does not include the most recent 12-month embedded cost of capital since the approved test year in this case is the 13-month average test year ended December 31, 2019. Further, the cost rates of short-term debt and customer deposits in this case are based on a 13-month average whereas the AFUDC rule requires the use the most recent 12-month average. In addition, the AFUDC rate requires the cost of long-term debt be based on end of period cost, which is not the case in this docket. Because the cost rates and methods to determine the embedded cost of capital filed in the instant docket do not comport with Rule 25-30.116, F.A.C., we find it is more appropriate to determine the AFUDC rate in a separate docket at the conclusion of the instant rate case proceeding. Further, the AFUDC rate established in a new docket would be based on a more recent test year ended December 31, 2020, and be effective January 1, 2021.

C. Conclusion

UIF's AFUDC rate shall not be revised in this proceeding. UIF shall be required to file with this Commission a request to revise its AFUDC rate pursuant to Rule 25-30.116, F.A.C., within 30 days after the issuance of this Final Order in this docket.

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XLI. Sewer and Water Improvement Mechanism

A. UIF's Swim Proposal

As part of its request in this proceeding, UIF petitioned this Commission for approval of a Sewer and Water Improvement Mechanism (SWIM), to allow UIF to recover the revenue requirement on capital expenditures for the replacement of aging infrastructure through an annual increase to base rates. UIF's initial plan for the recovery of SWIM-related costs was described in witness Deason's direct testimony, to be recovered through an annual filing in conjunction with UIF's annual index and pass through filings. The testimony provided an outline of how the SWIM program might work, but provided very little substantive detail.

UIF first altered its initial SWIM proposal in response to our staff's discovery, when UIF stated that it was acceptable for the filing to be handled as a docketed case before this Commission, such as a tariff filing. UIF went further in witness Deason's rebuttal testimony and explained that it would be amenable to a process that allows for our review of the costs for prudence and agreed to apply SWIM only to linear infrastructure. He further proffered that UIF would be willing to cap the annual SWIM-related increase in base rates, provided the rate increase was reasonable. He further testified that if SWIM were approved, UIF would agree to a stay-out provision, provided the stay-out timeframe was reasonable. The witness did not provide any testimony as to what would constitute a "reasonable" cap or stay-out timeframe, however. Witness Deason also analogized UIF's proposed SWIM program to the Commission-approved Gas Reliability Infrastructure Program (GRIP), which was initially approved by Order No. PSC-2012-0490-TRF-GU, discussed briefly below.⁵⁶

On cross examination, UIF further modified its proposal to gravitate toward and then to embrace GRIP, with witness Deason testifying that UIF's SWIM proposal was like GRIP; that UIF was not opposed to handling recovery as a separate tariff filing; that UIF would agree to a \$10 million dollar annual cap on expenditures; that GRIP is valid precedent for UIF's SWIM proposal; and UIF would further limit the replacement of linear assets to those that were at or beyond useful life. In its post-hearing brief, UIF further refined its proposal and offered to limit the SWIM program to coincide with UIF's 5-year planning horizon for capital improvements.

As discussed above, UIF witness Deason discussed the natural gas GRIP program as precedent and support for UIF's SWIM proposal. GRIP was designed to accelerate the replacement of cast iron and bare steel pipelines, in order to proactively respond to public concerns regarding aging gas infrastructure reliability and safety. The natural gas utilities who sought approval for GRIP cited to the Pipeline and Hazardous Safety Administration's (PHMSA) amended Federal Pipeline Safety Regulations that required natural gas distribution pipeline operators to develop and implement Distribution Integrity Management Plans (DIMPs). Changes to the Natural Gas Pipeline Safety Act required the Secretary of the Department of

⁵⁶ Issued September 24, 2012, in Docket No. 20120036-GU, *In re: Joint petition for approval of Gas Reliability Infrastructure Program (GRIP) by Florida Public Utilities Company and the Florida Division of Chesapeake Utilities Corporation*. There are three different Commission-approved natural gas utility programs that address the replacement of cast iron and bare steel pipelines, all of which all have a similar process for truing-up the costs associated with those programs. For ease of reference, the term "GRIP" is used throughout this issue.

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Transportation (DOT) to review the DIMPs to evaluate the continuing priority to enhance protections for public safety and to reduce risk in high consequence areas. At the time we considered the initial GRIP petition, twenty-four states had established programs for the replacement of cast iron and bare steel pipelines, and several other states had pending programs.

B. Parties' Arguments

1. UIF

a. Justifications for SWIM

UIF asserted that the objective of the SWIM program is the same as that of the GRIP program: to proactively respond to concerns over the reliability and safety of aging infrastructure. Witness Deason testified as to the benefits that would accrue from UIF's proposal, which he asserted would reduce the need for costlier rate proceedings, have positive impacts on economic development, help prioritize capital replacements, and provide improved opportunity for oversight.

UIF argued that the proposed SWIM program is designed to reduce the regulatory lag associated with traditional base rate proceedings through the inclusion of Commission-approved capital expenditures in rates on an annual basis, thus also reducing the Utility's need and frequency for filing rate cases. He stated that this mechanism would benefit customers in the form of reduced rate case expense passed on to the customers, less rate shock, better unit pricing for the investments reflected in rates, along with fewer impacts to UIF's customers and communities through the anticipated replacement schedule. The Utility added that, although the majority of the SWIM projects are related to operational assets (including buildings and other structures for treating and pumping water and wastewater), it would be willing to limit the scope of the projects to the replacement of linear infrastructure (mains and pipes for water and wastewater), if this Commission believes this will optimize the value to the customers.

UIF also stated that not only is SWIM modeled after GRIP, but like GRIP, the SWIM program is authorized pursuant to this Commission's broad ratemaking authority. The Utility maintained that Sections 367.011(2) & (3), 367.081, and 367.121(1)(a) & (d) provide a legal basis for implementing the SWIM program. UIF highlighted in particular Section 367.121(1)(d), F.S., which authorizes this Commission to require repairs and improvements if reasonably necessary to provide adequate and proper service. UIF stated that the objective of the SWIM program is to replace aging water and wastewater infrastructure, and that this Commission addressed much the same need within the gas industry through its approval of the GRIP programs.

As further precedent for its SWIM proposal, UIF relied on our broad ratemaking powers in Sections 366.04, 366.05, and 366.06, F.S. For example, in *Action Group v. Deason*, 615 So. 2d 683 (Fla. 1993), the Florida Supreme Court upheld approval of a 15-year rate rider charged to customers in a specific service area to retire the existing debt of a financially distressed system that Florida Power Corporation had purchased. The Court stated that this Commission had authority under Section 366.04(1), F.S., to fix "just, reasonable, and compensatory rates, charges,

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fares, tolls, or rentals” and under Section 366.05(1), F.S., to prescribe “fair and reasonable rates and charges [and] classifications.” The Court stated this authority was to be construed liberally. See also Section 366.041(2), F.S., which provides that the “power and authority herein conferred upon the commission shall . . . be construed liberally to further the legislative intent that adequate service be rendered by public utilities.” UIF also relied on this Commission’s broad ratemaking authority in approving surcharges for Florida Power & Light Company (FPL)⁵⁷ and Progress Energy Florida, Inc. (Progress)⁵⁸ for the recovery of costs incurred after an unusually heavy series of storms. In response to OPC’s arguments, detailed below, UIF argued that a full rate case is not required to change base rates, citing to other “analogous” investment recovery mechanisms approved by this Commission, such as the GRIP and storm surcharges.

b. SWIM’s Cost Recovery Method

UIF’s initial plan for recovery of SWIM related costs was to establish an administrative mechanism similar to the Utility’s annual index and pass through filings pursuant to Section 367.081(4), F.S. Witness Deason explained that under an annual administrative SWIM program, the additional revenue collected would be limited to the return on the investment using the equity and debt components of the weighted average cost of capital from UIF’s prior rate case along with the corresponding depreciation expense pursuant to Rule 25.30-140, F.A.C., grossed up for income taxes. He stated that the Utility was also proposing to combine the recovery of the additional SWIM revenue with its annual index filing, thus merging the two revenue requirements to calculate a combined percentage increase in base rates. As described by witness Deason, the annual administrative SWIM filing would detail this calculation along with the corresponding investments. The filing would also have a projection of scheduled investments for the subsequent two years, along with the estimated corresponding revenue requirements. After the first year of implementation, the Utility would annually file a true-up prior to April 30th for the previous 12-month historical period ending December 31 demonstrating the actual replacement costs, actual index revenue, and any resulting over or under recovery. The timing of the true-up would be such that any over or under recovery amounts could be included in the current year’s SWIM calculation.

Beginning first with responses to discovery requests and then with its rebuttal testimony, UIF modified its initial recovery proposal to adopt a GRIP-like annual tariff filing and to accept a cap of the amount of the annual increase in base rates associated with SWIM projects. UIF also suggested a prudence and cost review process, and to limit recovery under SWIM only to linear infrastructure projects. Witness Deason stated that UIF was not opposed to handling recovery as a separate tariff filing as is done with GRIP. Witness Deason also stated that UIF would agree to a \$10 million annual cap on capital expenditures, and that SWIM projects could be limited to those linear assets at or beyond their useful life. Finally, in its post-hearing brief, UIF discussed all of the above, and concluded by agreeing to a limited initial implementation period of 5 years, which was consistent with UIF’s planning horizon.

⁵⁷ Docket No. 041291-EI, *In re: Petition for authority to recover prudently incurred storm restoration costs related to 2004 storm season that exceed storm reserve balance*, by Florida Power & Light Co.

⁵⁸ Docket No. 041272-EI, *In re: Petition for approval of storm cost recovery clause for recovery of extraordinary expenditures related to Hurricanes Charley, Frances, Jeanne, and Ivan*, by Progress Energy Florida, Inc.

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2. OPC

OPC described UIF's proposal for a new sewer and water cost recovery mechanism as unnecessary and stated that the ratemaking process already provides ample opportunities for utilities to conduct prudent maintenance. OPC identified what it deemed as the "fundamental drawback" of UIF's proposal—the lack of substance provided in its initial proposal and the shortcomings of its subsequent efforts to supplement information in rebuttal. OPC argued that this left the Utility's proposal deficient in several aspects, and that UIF has failed to provide support for our approval of the SWIM concept. OPC also objected to UIF's shifting position on how SWIM would be implemented: first in its initial filing as being taken up administratively along with UIF's annual index and pass-through filing, then evolving into a GRIP-like annual filing. OPC objected to the evolution of UIF's proposal taking place so late in the course of the litigation, such that the final approach UIF ultimately endorsed first appeared in UIF's rebuttal testimony and "ad hoc colloquies on re-direct."

OPC further argued that Section 367.081, F.S., was the exclusive means by which Class A water and wastewater utilities could fix or change their rates outside of annual index and pass-through filings. OPC argued that this Commission lacks the authority to create alternative ratemaking methods for Class A water and wastewater utilities based on the specific and limited authority set forth in Section 367.081, F.S. To support its assertion, OPC cited Section 367.0814, F.S., which addresses Commission staff assistance in setting rates for primarily Class C utilities. It explained that the statute contains a specific provision granting this Commission the authority to establish criteria and procedures, by rule, that deviate from the rate setting requirements of Section 367.081, F.S. OPC concluded with the assertion that the elements of due process and protection of the customers' substantial interests are preserved in rate cases, which are required to be conducted pursuant to traditional ratemaking procedures (specifically, pursuant to Sections 367.081, 120.57, and 120.569, F.S.). OPC argued that UIF expects to be given an exemption from statutory requirements, due process requirements, and long-standing Commission prudence-determination policy, supporting such deviation through the filing of a mere eight sentences of direct testimony.

OPC also asserted that SWIM, if adopted, would be subject to reversal "...due to a clear lack of authority to depart from the mandatory statutory method for establishing the prudence of, and method for recovering the cost of, plant additions, and the Commission has no record basis to explain such a departure." OPC argued that UIF failed to meet its burden of proof, provided vague responses on cross-examination, and provided a number of bold claims (including the assertion that SWIM would save customers money on rate case expense) with absolutely no support.

Significantly, according to OPC, GRIP cannot be relied upon to provide precedent for SWIM. OPC pointed out that GRIP is a highly specific, unique approach to a highly specific and well documented problem. Unlike UIF's SWIM proposal, the cast iron and bare steel rider and GRIP cost recovery mechanisms were a specific response to an imminent safety risk in the transportation of a highly combustible product that was subject to a concrete federal requirement and program DIMP. No such circumstances exist or were demonstrated in evidence by UIF. OPC criticized UIF's late attempt to shore up its SWIM proposal by offering to limit recovery to

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“linear infrastructure,” noting that the term lacked specifics other than “linear infrastructure” referring to a catch-all generalization encompassing “things that are below ground.”

OPC cited to UIF witness Deason’s rebuttal, in which he noted that in the GRIP order we said, “[h]ere we are approving a similar surcharge, for a *discreet period*, due to *unusual circumstances*.”⁵⁹ OPC also noted that we emphasized in the GRIP order that “[i]t is clear that we have the authority under our broad ratemaking powers found in Sections 366.04, 366.05 and 366.06, F.S., to establish this type of surcharge to recover a discreet set of costs incurred in response to unusual urgent circumstances.”⁶⁰ OPC stated that the terms “surcharge,” “unusual,” and “urgent” are each materially significant in GRIP and do not apply to SWIM. OPC also argued that in approving the GRIP surcharge, we expressly noted the “urgency related to deaths and explosions and the exigency behind the actions of the Federal regulators.” OPC concluded that “For SWIM, there is neither urgency nor regulation nor a regulatory agency that has identified an imminent harm or risk of immediate death or injury if so-called linear facilities are not modernized at UIF’s unbridled whim. GRIP does not justify SWIM.”

OPC also took exception to the reference by witness Deason, made for the first time in rebuttal, to recent sewage spills in Ft. Lauderdale (unrelated to a UIF system), in order to promote the idea that SWIM could proactively prevent such events. On cross-examination, OPC pointed out that witness Deason was unable to identify the cause of the Ft. Lauderdale wastewater spills, or draw a connection between these coastal spills and UIF’s freshwater wastewater systems, or with UIF’s own experience with spills beyond the statement that wastewater spills present health hazards. OPC asserted that in contrast to the detailed, specific projects discussed in the GRIP proposal, UIF would be “looking into” the useful life of facilities that would be subject to SWIM, and later stated that such a process has been ongoing “for several years.” OPC stated that it views UIF’s claim, that SWIM would support economic development at a time when the State is recovering from the economic fallout of the pandemic, as not nearly enough to remedy the complete absence of evidence to support approval of SWIM. OPC concluded that for all these reasons, SWIM is unlawful, unsubstantiated, and should be denied.

C. Analysis

UIF’s initial proposal, briefly outlined in witness Deason’s direct testimony, was to recover SWIM-related costs administratively through an annual filing in conjunction with UIF’s annual index and pass through filings. Minimal detail was provided explaining the need for the program or the benefits to the customers of approving such a program. As the docket progressed, UIF’s request evolved to propose recovery of costs via GRIP-like tariff filings, which would establish a surcharge to be trued-up annually based upon actual and projected costs. OPC noted that when witness Deason was asked to explain why the SWIM program wasn’t more fully developed, he responded that he intended to do so in response to our staff and OPC’s inquiries in the course of the docket. OPC contends – and we agree – that it is not the burden of this Commission, our staff, or OPC to extract details from the Utility to support its request. OPC

⁵⁹ Order No. PSC-2012-0490-TRF-GU, at 11. (Emphasis added in OPC’s brief)

⁶⁰ *Id.* at 10

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argued that the ad hoc process by which UIF has attempted to shore-up support for its SWIM proposal does not provide the other participants in the docket, or this Commission, with a meaningful opportunity to examine the program. OPC witness Crane characterized the details of UIF's SWIM program as "vague, incomplete, and inadequate for purposes of a thorough analysis." We agree with witness Crane's assessment.

As a possible benefit of UIF's proposal, witness Flynn stated that local and state economies are positively impacted by the capital investment needed to replace and repair failing infrastructure. However, he did not distinguish between the benefit of the replacement of aging water and wastewater infrastructure recovered through a SWIM program and the replacement of infrastructure that would be completed in the normal course of business and recovered through a rate case or limited proceeding. Indeed, it appears that these capital investments are actually part of an ongoing, routine, and significant component of cost for the water and wastewater utility, rather than required to abate a certain hazard or immediate public safety concern.

Witness Flynn also characterized the issues pertaining to aging water and wastewater infrastructure as a nationwide problem jeopardizing reliable access to safe water, and described the potential negative economic impacts of failing essential infrastructure at a macro level, such as business failure and costs associated with lost water and leaks. Witness Flynn stated that UIF has invested more than \$90 million in its Florida systems over the past 10 years to better serve its customers in a safe and reliable manner. However, he failed to provide evidence concerning how SWIM would significantly improve UIF's ability to make similar capital investments in the future. Witness Flynn also explained that PCF-46, a 5-year capital improvement plan (CIP) developed by Kimley-Horn and Associates, was developed as part of the Utility's plan to replace assets that have exceeded or are approaching the end of their service lives. In Exhibit PCF-46, UIF provided detail and estimates for each project in the CIP, as well as a general summary of the recommended projects and the associated total costs for each of the 5 years. Witness Flynn's statement that these planned projects were primarily related to linear assets, with some vertical assets as well, became more relevant when UIF later conceded that it would be willing to limit SWIM recovery to the replacement of linear infrastructure.

While UIF witness Deason analogized the replacement of cast iron and bare steel pipe under GRIP as "very similar" to the issue of replacing aging water and wastewater infrastructure, he admitted to not researching the facts and circumstances leading to the GRIP order. The proposed SWIM program responds to no federal or state legislation or regulatory mandates, and fails to identify specific assets which, barring accelerated replacement via SWIM, pose a risk of injury or death.

Despite UIF's contention that it modelled SWIM after GRIP, UIF failed to provide justification for either the replacement of linear infrastructure or the accelerated recoupment of its costs. GRIP was predicated upon a federally mandated program to identify known hazardous gas pipes for remediation. Natural gas utilities were required by law to develop DIMPs, and then use those plans to enhance safety and reduce risks to their systems.⁶¹ Changes to the Natural Gas Pipeline Safety Act required DOT to review the DIMPs to evaluate the continuing priority to

⁶¹ Order No. PSC-2012-0490-TRF-GU, at 1-2.

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enhance protections for public safety and to reduce risk in high consequence areas. For example, the companies' DIMPs identified specific assets as risks, such as bare steel pipes. The installation of these pipes had been prohibited since the early 1970s and are vulnerable to leaks, which can result in catastrophic injury, death, or destruction of property in the event of failure. In support of GRIP, the natural gas companies asserted that the federal regulatory findings compelled them to conduct an evaluation and abate the hazards associated with cast iron and bare steel mains and services that would ultimately fail due to age, leak history, soil conditions, and other pertinent criteria, and stated that these concerns ranked highest in "threats and risks to its gas distribution pipeline."⁶²

We agree with OPC that the Utility has provided very little evidence to support a finding that SWIM should be approved for the same reasons GRIP was approved. We have not approved any similar program for a regulated water or wastewater utility, and UIF has provided no persuasive evidence to support the cost recovery of large capital projects for water and wastewater utilities via its SWIM proposal. As UIF's concept of its proposed SWIM program has evolved, it appears that the intention of the program is to accelerate recovery of routine and unremarkable capital investment, rather than accelerate the replacement of aging infrastructure due to safety concerns.

Other examples cited by UIF in support of its SWIM proposal involved our approval of a surcharge to Florida Power Corporation's customers associated with the purchase of Sebring Utilities Commission's system,⁶³ and two storm cost recovery surcharges by FPL⁶⁴ and Progress.⁶⁵ However, in each of these instances, the surcharges in question were created to address cost recovery associated with unique and exigent circumstances, after being fully vetted in a Commission proceeding. As noted above, UIF invites a comparison to this Commission's precedent for the recovery of extraordinary expenditures incurred after an unusually heavy series of storms, but provided no evidence of "extraordinary circumstances" or "unusually heavy series of storms" or other unique events that were central to these Commission-approved precedents.⁶⁶

Finally, in support of our authority to approve the proposed SWIM program, UIF highlighted Section 367.121(1)(d), F.S., which authorizes us to require repairs and improvements if reasonably necessary to provide adequate and proper service. Based on our review, it appears that our only utilization of this authority was for Aloha Utilities, Inc., whose customers had been experiencing "black water" problems for years. Specifically, we required the utility to make improvements to Wells Nos. 8 and 9, and then to all its wells, to implement a treatment process designed to remove at least 98 percent of the hydrogen sulfide in its raw water.⁶⁷ Aloha Utilities,

⁶² *Id.*

⁶³ *Action Group v. Deason*, 615 So. 2d 683 (Fla. 1993).

⁶⁴ Order No. PSC-06-1062-TRF-EI, issued December 26, 2006, in Docket No. 041291-EI, *In re: Petition for authority to recover prudently incurred storm restoration costs related to 2004 storm season that exceed storm reserve balance, by Florida Power & Light Co.*

⁶⁵ Order No. PSC-06-0772-PAA-EI, issued September 18, 2006, in Docket No. 041272-EI, *In re: Petition for approval of storm cost recovery clause for recovery of extraordinary expenditures related to Hurricanes Charley, Frances, Jeanne, and Ivan, by Progress Energy Florida, Inc.*

⁶⁶ *Id.*

⁶⁷ Order No. PSC-02-0593-FOF-WU, issued April 30, 2002, in Docket No. 010503-WU, *In re: Application for increase in water rates for Seven Springs System in Pasco County by Aloha Utilities, Inc.*

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Inc. appealed our final decision requiring these improvements, but the First District Court of Appeals affirmed our Final Order on May 6, 2003.⁶⁸

D. Conclusion

We have broad ratemaking authority under Chapter 367, F.S. Notwithstanding that broad authority, we find that UIF has failed to meet its burden of proof to support the utility's requested SWIM program. It is well established in case and statutory law that the utility has the burden of proof to demonstrate the reasonableness and prudence of the costs for which it seeks recovery. *Florida Power Corp. v. Cresse*, 413 So. 2d 1187 (1982), at 1191. Therefore, for the reasons discussed above, we hereby deny UIF's SWIM program request.

XLII. Interim Refunds

A. Parties' Arguments

1. UIF

In its brief, UIF cited the requirements contained in Section 367.082, F.S., for calculating refunds. It further cited Rule 25-30.360(4),(7), and (8), F.A.C., for implementing refunds, and stated that the Corporate Undertaking of UIF and the Corporate Guarantee of Utilities, Inc. should be released upon the verification of any required refunds by the Commission staff, or, if no refund is required, upon the issuance of the Final Order.

2. OPC

In its brief, OPC stated that refunds should be calculated in accordance with this Commission's findings and the rates established in this case.

B. Analysis

We authorized UIF to collect interim water and wastewater rates, subject to refund, pursuant to Section 367.082, F.S. The approved interim revenue requirement for water of \$17,217,167 represented an increase of \$918,223, or 5.63 percent. The approved interim revenue requirement for wastewater of \$20,988,143 represented an increase of \$1,051,222, or 5.27 percent.⁶⁹

According to Section 367.082(4), F.S., any refund shall be calculated to reduce the rate of return of the Utility during the pendency of the proceeding to the same level within the range of the newly authorized rate of return. Adjustments made in the rate case test period that do not

⁶⁸ *Aloha Utilities, Inc. v. Florida Public Service Commission*, 848 So. 2d 307 (Fla. 1st DCA 2003); see also Order No. PSC-03-1157-PCO-WU, issued October 20, 2003, in Docket No. 010503-WU, *In re: Application for increase in water rates for Seven Springs System in Pasco County by Aloha Utilities, Inc.*

⁶⁹ Order No. PSC-2020-0322-PCO-WS, issued September 21, 2020, in Docket No. 20200139-WS, *In re: Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties, by Utilities, Inc. of Florida.*

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relate to the period that interim rates are in effect shall be removed. Rate case expense is an example of an adjustment which is recovered only after final rates are established.

To establish the proper refund amounts, we calculated interim period revenue requirements by utilizing the same data used to establish final rates. Current rate case expense and incomplete pro forma projects were removed because these items are prospective in nature and did not occur during the interim collection period. Using the principles discussed above, the granted interim test year revenue requirements are less than the calculated interim period revenue requirement.

C. Conclusion

No interim refund shall be required because the total interim collection period revenue requirement calculated is greater than the total interim revenue requirement that was granted. As a result, the corporate undertaking amount of \$1,810,655 shall be released.

XLIII. Removal of Current Rate Case Expense

A. Parties' Arguments

1. UIF

Pursuant to Section 367.081(8), F.S., rate case expense is recovered over four years unless a longer period is justified and is in the public interest. UIF asserted that there was no evidence presented to warrant a variance of the four-year amortization period. Based on the stipulation of total rate case expense in Issue 25, UIF contends rates should be reduced after four years to reflect an annual decrease in revenues of \$185,771.

2. OPC

No argument was provided in OPC's brief.

B. Analysis

Section 367.081(8), F.S., requires that rates be reduced immediately following the expiration of the determined amortization period by the amount of the rate case expense previously included in rates. After weighing the evidence put forth in the record, we find that a four-year amortization period is appropriate. The reduction in revenues will result in the rate decrease as shown on Schedule Nos. 4-A and 4-B, which will remove rate case expense grossed-up for RAFs of \$101,427 for water and \$93,098 for wastewater.

C. Conclusion

UIF's water and wastewater rates shall be reduced as shown on Schedule Nos. 4-A and 4-B, respectively. This is to remove rate case expense, grossed up for RAFs, which is being amortized over a four-year period and will result in a reduction of \$101,427 for water

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and \$93,098 for wastewater. The decrease in rates shall become effective immediately following the expiration of the four-year rate case expense recovery period pursuant to Section 367.081(8), F.S. UIF shall be required to file revised tariff sheets no later than one month prior to the actual date of the required rate reduction. The Utility shall also be required to file a proposed customer notice of the lower rates and the reason for the reduction. If UIF files this reduction in conjunction with a price index or pass-through rate adjustment, separate data shall be filed for the price index and/or pass-through increase, and the reduction in the rates due to the amortized rate case expense.

XLIV. Commission Ordered Adjustments

A. Parties' Arguments

In its brief, UIF stated "Consistent with Commission policy, UIF should make the Commission approved adjustments and advise the Commission accordingly within 90 days of the Final Order being effective." No argument was provided in OPC's brief.

B. Analysis

The Utility shall be required to notify this Commission, in writing, that it has adjusted its books in accordance with any Commission ordered adjustments. UIF shall submit a letter within 90 days of the final order in this docket, confirming that the adjustments to all the applicable NARUC USOA accounts have been made to the Utility's books and records. In the event the Utility needs additional time to complete the adjustments, notice shall be provided within seven days prior to the deadline. Upon providing good cause, our staff shall be given administrative authority to grant an extension of up to 60 days.

C. Conclusion

UIF The Utility shall be required to notify this Commission, in writing, that it has adjusted its books in accordance with any Commission ordered adjustments. UIF shall submit a letter within 90 days of the final order in this docket, confirming that the adjustments to all the applicable NARUC USOA accounts have been made to the Utility's books and records. In the event the Utility needs additional time to complete the adjustments, notice shall be provided within seven days prior to the deadline. Upon providing good cause, our staff shall be given administrative authority to grant an extension of up to 60 days.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that Application for increase in water and wastewater rates in Charlotte, Highlands, Lake, Lee, Marion, Orange, Pasco, Pinellas, Polk, and Seminole Counties, by Utilities, Inc. of Florida, is hereby approved as set forth in the body of this Order. It is further

ORDERED that all matters contained in the attached schedules and appendices are incorporated herein by reference. It is further

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ORDERED that UIF is hereby authorized to charge the new rates and charges as approved in the body of this Order. It is further

ORDERED that the rates and charges approved herein shall be effective for service rendered on or after the stamped approval date on the tariff sheet, pursuant to Rule 25-30.475(1), F.A.C. The rates and charges shall not be implemented until Commission staff has approved the proposed customer notice and the notice has been received by the customers. It is further

ORDERED that UIF shall provide proof of the date notice was given no less than 10 days after the date of the notice. It is further

ORDERED that the quality of service for all UIF systems is satisfactory with the exclusion of the Pennbrooke water, Sanlando (Wekiva Hunt Club) wastewater, and Mid-County wastewater systems, which are unsatisfactory, as shown in Table 1. All existing ROE penalties associated with prior quality of service determinations shall be removed and a reduction of 15 basis points to the Utility's overall ROE shall be implemented due to the unsatisfactory quality of service of the three aforementioned systems. However, the secondary water quality reporting and testing requirements, pursuant to Order No. PSC-16-0505-PAA-WS for Summertree shall be continued, but shall now be conducted on an annual basis, instead of a semi-annual basis. It is further

ORDERED that the appropriate ROE for the test year ended December 31, 2019 is 9.75 percent, which includes a 15 basis point penalty for unsatisfactory service quality, with a range of plus or minus 100 basis points. It is further

ORDERED that a new Allowance for Funds Used During Construction (AFUDC) rate shall not be established in this docket. The Utility shall be required to file with the Commission a request to revise its AFUDC rate pursuant to Rule 25-30.116, F.A.C., within 30 days after the issuance of this Final Order. It is further

ORDERED that Utilities, Inc. of Florida's request for a Sewer and Water Improvement Mechanism shall be denied. It is further

ORDERED that no interim refund is required, and the corporate undertaking amount of \$1,810,655 shall be released. It is further

ORDERED that Utilities, Inc. of Florida's water and wastewater rates shall be reduced as shown on Schedule Nos. 4-A and 4-B, respectively, to remove rate case expense, grossed up for RAFs, which is being amortized over a four-year period and shall result in a reduction of \$101,427 for water and \$93,098 for wastewater. The decrease in rates shall become effective immediately following the expiration of the four-year rate case expense recovery period pursuant to Section 367.081(8), F.S. The Utility shall file revised tariff sheets no later than one month prior to the actual date of the required rate reduction. The Utility shall also be required to file a proposed customer notice of the lower rates and the reason for the reduction. If the Utility files this reduction in conjunction with a price index or pass-through rate adjustment, separate data

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shall be filed for the price index and/or pass-through increase, and the reduction in the rates due to the amortized rate case expense. It is further

ORDERED that the Utility shall be required to notify this Commission, in writing that it has adjusted its books in accordance with any Commission ordered adjustments. Utilities, Inc. of Florida shall submit a letter within 90 days of the final order in this docket confirming that the adjustments to all applicable NARUC USOA accounts have been made to the Utility's books and records. In the event that the Utility needs additional time to complete the adjustments, notice shall be provided within seven days prior to the deadline. Upon providing good cause, Commission staff shall be given administrative authority to grant an extension of up to 60 days. It is further

ORDERED that this docket shall remain open for Commission staff's verification that the Utility has filed the revised tariff sheets, customer notices have been filed, and that the Utility has notified the Commission in writing that the adjustments for all applicable NARUC USOA primary accounts have been made. Once these actions are complete, this docket shall be closed administratively.

By ORDER of the Florida Public Service Commission this 4th day of June, 2021.



ADAM J. TETZMAN
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399
(850) 413-6770
www.floridapsc.com

Copies furnished: A copy of this document is provided to the parties of record at the time of issuance and, if applicable, interested persons.

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NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Office of Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within fifteen (15) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Office of Commission Clerk, and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.

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Schedule No. 1-A

Utilities, Inc. of Florida		Schedule No. 1-A			
Schedule of Water Rate Base		Docket No. 20200139-WS			
Test Year Ended 12/31/19					
Description	Test Year Per Utility	Utility Adjust- ments	Adjusted Test Year Per Utility	Commission Adjust- ments	Commission Adjusted Test Year
1 Plant in Service	\$121,858,071	(\$2,795,312)	\$119,062,759	(\$159,144)	\$118,903,615
2 Land and Land Rights	296,859	0	296,859	0	296,859
3 Non-used and Useful Components	0	0	0	0	0
4 Accumulated Depreciation	(51,397,784)	5,249,620	(46,148,164)	10,950	(46,137,214)
5 CIAC	(41,304,592)	87,827	(41,216,765)	(23,857)	(41,240,622)
6 Accumulated Amortization of CIAC	20,893,605	(88,677)	20,804,928	23,857	20,828,785
7 Construction Work in Progress	2,628,722	(2,628,722)	0	0	0
8 Advances for Construction	(36,767)	0	(36,767)	0	(36,767)
9 Acquisition Adjustments	56,355	(56,355)	0	0	0
10 Accumulated Amortization of Acq. Adj.	192,642	(192,642)	0	0	0
11 Working Capital Allowance	<u>0</u>	<u>4,151,132</u>	<u>4,151,132</u>	<u>(2,355,199)</u>	<u>1,795,933</u>
12 Rate Base	<u>\$53,187,111</u>	<u>\$3,726,871</u>	<u>\$56,913,982</u>	<u>(\$2,503,393)</u>	<u>\$54,410,589</u>

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Schedule No. 1-B

Utilities, Inc. of Florida				Schedule No. 1-B	
Schedule of Wastewater Rate Base				Docket No. 20200139-WS	
Test Year Ended 12/31/19					
Description	Test Year Per Utility	Utility Adjust- ments	Adjusted Test Year Per Utility	Commission Adjust- ments	Commission Adjusted Test Year
1 Plant in Service	\$131,296,074	\$23,256,173	\$154,552,247	(\$1,310,743)	\$153,241,504
2 Land and Land Rights	583,041	0	583,041	0	583,041
3 Non-used and Useful Components	0	(928,928)	(928,928)	(284,620)	(1,213,548)
4 Accumulated Depreciation	(57,140,576)	2,869,610	(54,270,966)	102,035	(54,168,931)
5 CIAC	(44,997,031)	753,220	(44,243,811)	104,784	(44,139,027)
6 Accumulated Amortization of CIAC	30,720,963	(2,217,848)	28,503,115	(104,784)	28,398,331
7 CWIP	(605,083)	605,083	0	0	0
8 Advances for Construction	1,315	0	1,315	0	1,315
9 Acquisition Adjustment	1,238,784	(1,238,784)	0	0	0
10 Accumulated Amortization of Acq. Adj.	(163,693)	163,693	0	0	0
11 Working Capital Allowance	<u>0</u>	<u>5,551,167</u>	<u>5,551,167</u>	<u>(2,973,713)</u>	<u>2,577,454</u>
12 Rate Base	<u>\$60,933,794</u>	<u>\$28,813,386</u>	<u>\$89,747,180</u>	<u>(\$4,467,041)</u>	<u>\$85,280,139</u>

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Schedule No. 1-C

Utilities, Inc. of Florida		Schedule No. 1-C	
Adjustments to Rate Base		Docket No. 20200139-WS	
Test Year Ended 12/31/19			
<u>Explanation</u>	<u>Water</u>	<u>Wastewater</u>	
<u>Plant In Service</u>			
1 Pro Forma Plant Additions (I-3)	(\$150,054)	(\$1,276,038)	
2 Pro Forma Plant Retirements (I-4)	<u>(9,090)</u>	<u>(34,706)</u>	
Total	<u>(\$159,144)</u>	<u>(\$1,310,743)</u>	
<u>Non-used and Useful</u>			
Non-Used and Useful Adjustments (I-9)	\$0	<u>(\$284,620)</u>	
<u>Accumulated Depreciation</u>			
1 Pro Forma Plant Additions (I-3)	\$1,861	\$67,329	
2 Pro Forma Plant Retirements (I-4)	<u>9,090</u>	<u>34,706</u>	
Total	<u>\$10,950</u>	<u>102,035</u>	
<u>CIAC</u>			
Pro Forma Plant Retirements (I-4)	<u>(\$23,857)</u>	<u>\$104,784</u>	
<u>Accumulated Amortization of CIAC</u>			
Pro Forma Plant Retirements (I-4)	<u>\$23,857</u>	<u>(\$104,784)</u>	
<u>Working Capital</u>			
1 Pro Forma Cash Adjustment (I-16)	(\$2,355,199)	(\$3,061,123)	
2 Pro Forma Studies and Preliminary Investigations Adjustment (I-16)	0	(4,453)	
3 Miscellaneous Deferred Debits Adjustment (I-16)	<u>0</u>	<u>91,863</u>	
	<u>(\$2,355,199)</u>	<u>(\$2,973,713)</u>	

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Schedule No. 2

Utilities, Inc. of Florida							Schedule No. 2	
Capital Structure-13-Month Average							Docket No. 20200139-WS	
Test Year Ended 12/31/19								
Description	Total Capital	Specific Adjustments	Subtotal Adjusted Capital	Prorata Adjustments	Capital Reconciled to Rate Base	Ratio	Cost Rate	Weighted Cost
Per Utility								
1 Long-term Debt	\$257,846,154	\$0	\$257,846,154	(\$196,846,833)	\$60,999,321	41.59%	5.78%	2.40%
2 Short-term Debt	28,461,538	0	28,461,538	(21,729,943)	6,731,595	4.59%	4.04%	0.19%
3 Preferred Stock	0	0	0	0	0	0.00%	0.00%	0.00%
4 Common Equity	279,391,931	0	279,391,931	(213,293,817)	66,098,114	45.07%	11.75%	5.30%
5 Customer Deposits	248,501	0	248,501	0	248,501	0.17%	2.00%	0.00%
6 Tax Credits-Zero cost	73,443	0	73,443	0	73,443	0.05%	0.00%	0.00%
7 Deferred Income Taxes	7,143,896	12,554	7,156,450	0	7,156,450	4.88%	0.00%	0.00%
8 Excess Deferred Tax Liability	<u>5,647,645</u>	<u>(293,820)</u>	<u>5,353,825</u>	<u>0</u>	<u>5,353,825</u>	<u>3.65%</u>	0.00%	0.00%
9 Total Capital	<u>\$578,813,108</u>	<u>(\$281,266)</u>	<u>\$578,531,842</u>	<u>(\$431,870,593)</u>	<u>\$146,661,249</u>	<u>100.00%</u>		<u>7.89%</u>
Per Commission								
10 Long-term Debt	\$257,846,154	\$0	\$257,846,154	(\$200,023,986)	\$57,822,168	41.39%	5.78%	2.39%
11 Short-term Debt	28,461,538	0	28,461,538	(22,079,020)	6,382,518	4.57%	4.04%	0.18%
12 Preferred Stock	0	0	0	0	0	0.00%	0.00%	0.00%
13 Common Equity	279,391,931	0	279,391,931	(216,738,108)	62,653,823	44.85%	9.75%	4.37%
14 Customer Deposits	248,501	0	248,501	0	248,501	0.18%	2.00%	0.00%
15 Tax Credits-Zero cost	73,443	0	73,443	0	73,443	0.05%	0.00%	0.00%
16 Deferred Income Taxes	7,156,450	0	7,156,450	0	7,156,450	5.13%	0.00%	0.00%
17 Excess Deferred Tax Liability	<u>5,353,825</u>	<u>0</u>	<u>5,353,825</u>	<u>0</u>	<u>5,353,825</u>	<u>3.83%</u>	0.00%	<u>0.00%</u>
18 Total Capital	<u>\$578,531,842</u>	<u>\$0</u>	<u>\$578,531,842</u>	<u>(\$438,841,114)</u>	<u>\$139,690,728</u>	<u>100.00%</u>		<u>6.95%</u>
						<u>LOW</u>	<u>HIGH</u>	
RETURN ON EQUITY						<u>8.75%</u>	<u>10.75%</u>	
OVERALL RATE OF RETURN						<u>6.51%</u>	<u>7.40%</u>	

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Schedule No. 3-A

Utilities, Inc. of Florida							Schedule No. 3-A	
Statement of Water Operations							Docket No. 20200139-WS	
Test Year Ended 12/31/19								
Description	Test Year Per Utility	Utility Adjust- ments	Adjusted Test Year Per Utility	Commission Adjust- ments	Commission Adjusted Test Year	Revenue Increase	Revenue Requirement	
1 Operating Revenues:	<u>\$16,396,327</u>	<u>\$3,020,045</u>	<u>\$19,416,372</u>	<u>(\$2,794,456)</u>	<u>\$16,621,916</u>	<u>\$1,696,108</u> 10.20%	<u>\$18,318,024</u>	
Operating Expenses								
2 Operation & Maintenance	\$8,659,460	\$373,246	\$9,032,706	(\$206,949)	\$8,825,757		\$8,825,757	
3 Depreciation	2,885,066	192,476	3,077,542	(1,995)	3,075,547		3,075,547	
4 Amortization	0	50,263	50,263	46	50,309		50,309	
5 Taxes Other Than Income	1,653,481	203,117	1,856,598	(134,050)	1,722,548	76,325	1,798,873	
6 Income Taxes	<u>(528,046)</u>	<u>1,437,320</u>	<u>909,274</u>	<u>(533,881)</u>	<u>375,393</u>	<u>408,589</u>	<u>783,983</u>	
7 Total Operating Expense	<u>12,669,961</u>	<u>2,256,422</u>	<u>14,926,383</u>	<u>(876,829)</u>	<u>14,049,554</u>	<u>484,914</u>	<u>14,534,468</u>	
8 Operating Income	<u>\$3,726,366</u>	<u>\$763,623</u>	<u>\$4,489,989</u>	<u>(\$1,917,627)</u>	<u>\$2,572,362</u>	<u>\$1,211,194</u>	<u>\$3,783,556</u>	
9 Rate Base	<u>\$53,187,111</u>		<u>\$56,913,982</u>		<u>\$54,410,589</u>		<u>\$54,410,589</u>	
10 Rate of Return	<u>7.01%</u>		<u>7.89%</u>		<u>4.73%</u>		<u>6.95%</u>	

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Schedule No. 3-B

Utilities, Inc. of Florida							Schedule No. 3-B	
Statement of Wastewater Operations							Docket No. 20200139-WS	
Test Year Ended 12/31/19								
Description	Test Year Per Utility	Utility Adjust- ments	Adjusted Test Year Per Utility	Commission Adjust- ments	Commission Adjusted Test Year	Revenue Increase	Revenue Requirement	
1 Operating Revenues:	<u>\$20,840,529</u>	<u>\$5,987,039</u>	<u>\$26,827,568</u>	<u>(\$6,518,873)</u>	<u>\$20,308,695</u>	<u>\$4,635,151</u> 22.82%	<u>\$24,943,846</u>	
Operating Expenses								
2 Operation & Maintenance	\$10,494,286	\$575,233	\$11,069,519	(\$411,479)	\$10,658,040		\$10,658,040	
3 Depreciation	3,773,374	870,142	4,643,516	(108,192)	4,535,324		4,535,324	
4 Amortization	0	110,166	110,166	121,916	232,082		232,082	
5 Taxes Other Than Income	1,872,394	617,804	2,490,198	(339,107)	2,151,091	208,582	2,359,673	
6 Income Taxes	<u>(484,700)</u>	<u>1,918,645</u>	<u>1,433,945</u>	<u>(1,321,952)</u>	<u>111,993</u>	<u>1,116,599</u>	<u>1,228,591</u>	
7 Total Operating Expense	<u>15,655,354</u>	<u>4,091,990</u>	<u>19,747,344</u>	<u>(2,058,814)</u>	<u>17,688,530</u>	<u>1,325,180</u>	<u>19,013,710</u>	
8 Operating Income	<u>\$5,185,175</u>	<u>\$1,895,049</u>	<u>\$7,080,224</u>	<u>(\$4,460,059)</u>	<u>\$2,620,165</u>	<u>\$3,309,971</u>	<u>\$5,930,136</u>	
9 Rate Base	<u>\$60,933,794</u>		<u>\$89,747,180</u>		<u>\$85,280,139</u>		<u>\$85,280,139</u>	
10 Rate of Return	<u>8.51%</u>		<u>7.89%</u>		<u>3.07%</u>		<u>6.95%</u>	

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Schedule No. 3-C
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	Schedule 3-C	
Utilities, Inc. of Florida	Docket No. 20200139-WS	
Adjustment to Operating Income	Page 1 of 2	
Test Year Ended 12/31/19		
<u>Explanation</u>	<u>Water</u>	<u>Wastewater</u>
<u>Operating Revenues</u>		
1 Remove requested final revenue increase or decrease.	(\$2,823,848)	(\$6,529,383)
2 Test Year Revenues (I-24)	<u>17,989</u>	<u>2,813</u>
Total	<u>(\$2,794,456)</u>	<u>(\$6,518,873)</u>
<u>Operation and Maintenance Expense</u>		
1 Stipulated Rate Case Expense (I-25)	(\$5,930)	(\$5,443)
2 Pro Forma WWTP Permitting Expense (I-26)	0	10,250
3 Pro Forma I&I Inspection Expense (I-26)	0	15,278
4 Pro Forma Capitalized Labor (I-26)	(61,245)	(353,675)
5 Pro Forma Positions - Salaries & Wages Expense (I-26)	(15,121)	(13,879)
6 Pro Forma Positions - Pensions & Benefits Expense (I-26)	(7,830)	(7,187)
7 Pro Forma Positions - Telephone Expense (I-26)	(959)	(879)
8 Pro Forma Transportation Expense - New Positions (I-26)	(2,316)	(2,126)
9 Pro Forma Chemicals Expense - Lake Groves (I-26)	(28,914)	0
10 Pro Forma Chemicals Expense - Summertree (I-26)	(5,000)	0
11 Pro Forma Contractual Services - Testing Expense - Summertree (I-26)	(24,500)	0
12 Pro Forma Contractual Services - Other Expense - Summertree (I-26)	0	(5,400)
13 Pro Forma Contractual Services - Other Expense - Eagle Ridge (I-26)	0	7,200
14 Non-Qualified Retirement Expense (I-27)	(28,592)	(26,245)
15 Lobbying Expense (I-27)	(23,894)	(21,933)
16 Holiday Party Expense (I-27)	(2,648)	(2,431)
17 Infiltration & Inflow - Purchased Wastewater (I-27)	0	(4,901)
18 Infiltration & Inflow - Purchased Power (I-27)	<u>0</u>	<u>(107)</u>
Total	<u>(\$206,949)</u>	<u>(\$411,479)</u>
<u>Depreciation Expense - Net</u>		
1 Pro Forma Plant Additions (I-3)	(\$1,861)	(\$67,329)
2 Pro Forma Plant Retirements - Depreciation Expense (I-4)	976	1,657
3 Pro Forma Plant Retirements - CIAC Amortization (I-4)	(1,111)	(14,061)
4 Non-Used and Useful Adjustments (I-9)	<u>0</u>	<u>(28,459)</u>
Total	<u>\$1,995</u>	<u>(\$108,192)</u>
<u>Amortization-Other Expense</u>		
Stipulated Amortization Expense (I-28)	<u>\$46</u>	<u>\$121,916</u>

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Schedule No. 3-C
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Utilities, Inc. of Florida		Schedule 3-C	
Adjustment to Operating Income		Docket No. 20200139-WS	
Test Year Ended 12/31/19		Page 2 of 2	
<u>Explanation</u>	<u>Water</u>	<u>Wastewater</u>	
<u>Taxes Other Than Income</u>			
1	RAFs on revenue adjustments above.	(\$125,751)	(\$293,349)
2	Pro Forma Plant Additions (I-3)	(2,328)	(7,778)
3	Non-Used and Useful Adjustments (I-9)	0	(9,743)
4	Pro Forma Capitalized Labor (I-26)	(4,685)	(27,056)
5	Pro Forma Positions - Payroll Taxes (I-26)	<u>(1,287)</u>	<u>(1,181)</u>
	Total	<u>(\$134,050)</u>	<u>(\$339,107)</u>

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Schedule No. 4-A

Utilities Inc. of Florida	Schedule No. 4-A				
Test Year Ended 12/31/19	Docket No. 20200139-WS				
Water Rates					
	Utility's Existing Rates	Commission Approved Interim Rates	Utility's Proposed Final Rates	Commission Approved Rates	Four Year Rate Reduction
<u>Residential and General Service</u>					
Base Facility Charge by Meter Size					
5/8" x 3/4"	\$11.28	\$11.71	\$13.23	\$12.46	\$0.07
3/4"	\$16.92	\$17.57	\$19.85	\$18.69	\$0.11
1"	\$28.20	\$29.28	\$33.08	\$31.15	\$0.18
1-1/2"	\$56.40	\$58.55	\$66.17	\$62.30	\$0.35
2"	\$90.24	\$93.68	\$105.86	\$99.68	\$0.56
3"	\$180.48	\$187.36	\$211.73	\$199.36	\$1.12
4"	\$282.00	\$292.75	\$330.83	\$311.50	\$1.75
6"	\$564.00	\$585.50	\$661.65	\$623.00	\$3.50
8"	\$902.40	\$936.80	\$1,058.64	\$996.80	\$5.60
10"	\$1,635.60	\$1,697.95	\$1,918.79	\$1,806.70	\$10.15
Charge per 1,000 gallons - Residential Service					
0-4,000 gallons	\$1.59	\$1.65	\$1.87	\$1.76	\$0.01
4,001-12,000 gallons	\$2.37	\$2.46	\$2.78	\$2.62	\$0.01
Over 12,000 gallons	\$3.96	\$4.11	\$4.65	\$4.37	\$0.02
Charge per 1,000 gallons - General Service					
	\$2.68	\$2.78	\$3.14	\$2.96	\$0.02
<u>Private Fire Protection Service</u>					
1 1/2"	\$4.70	\$4.88	\$5.51	\$5.19	\$0.03
2"	\$7.52	\$7.81	\$8.82	\$8.31	\$0.05
3"	\$15.04	\$15.61	\$17.64	\$16.61	\$0.09
4"	\$23.50	\$24.40	\$27.57	\$25.96	\$0.15
6"	\$47.00	\$48.79	\$55.14	\$51.92	\$0.29
8"	\$75.20	\$78.07	\$88.22	\$83.07	\$0.47
10"	\$136.30	\$141.50	\$159.90	\$150.56	\$0.85
<u>Typical Residential 5/8" x 3/4" Meter Bill Comparison</u>					
3,000 Gallons	\$16.05	\$16.66	\$18.84	\$17.74	
6,000 Gallons	\$22.38	\$23.23	\$26.27	\$24.74	
8,000 Gallons	\$27.12	\$28.15	\$31.83	\$29.98	

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Schedule No. 4-B
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Utilities Inc. of Florida		Schedule No. 4-B			
Test Year Ended 12/31/19		Docket No. 20200139-WS			
Wastewater Rates		Page 1 of 2			
	Utility's Existing Rates	Commission Approved Interim Rates	Utility's Proposed Final Rates	Commisson Approved Rates	Four Year Rate Reduction
<u>Residential Service (RS1)</u>					
All Meter Sizes	\$26.72	\$27.63	\$35.44	\$32.92	\$0.13
Charge per 1,000 gallons (8,000 gallon cap)	\$4.27	\$4.42	\$5.66	\$5.26	\$0.02
<u>Residential Service (RS2)</u>					
All Meter Sizes	\$53.44	\$55.26	\$70.89	\$65.84	\$0.25
Charge per 1,000 gallons (16,000 gallon cap)	\$4.27	\$4.42	\$5.66	\$5.26	\$0.02
<u>Residential Service (RS3)</u>					
Flat Rate	\$48.06	\$49.70	\$63.75	\$59.21	\$0.22
<u>Residential Service (RS4)</u>					
Flat Rate	\$96.13	\$99.40	\$127.52	\$118.42	\$0.45
<u>Residential Reuse Service (RSS1)</u>					
All Meter Sizes	\$7.92	\$7.92	\$10.51	\$9.76	\$0.04
Charge per 1,000 Gallons	\$1.50	\$1.50	\$1.99	\$1.85	\$0.01
<u>General Service (GS1)</u>					
Base Facility Charge by Meter Size					
5/8" x 3/4"	\$26.72	\$27.63	\$35.44	\$32.92	\$0.13
3/4"	\$40.08	\$41.45	\$53.17	\$49.38	\$0.20
1"	\$66.80	\$69.08	\$88.61	\$82.30	\$0.33
1-1/2"	\$133.60	\$138.15	\$177.22	\$164.60	\$0.65
2"	\$213.76	\$221.04	\$283.55	\$263.36	\$1.04
3"	\$427.52	\$442.08	\$567.10	\$526.72	\$2.08
4"	\$668.00	\$690.75	\$886.10	\$823.00	\$3.25
6"	\$1,336.00	\$1,381.50	\$1,772.19	\$1,646.00	\$6.50
8"	\$2,137.60	\$2,210.40	\$2,835.51	\$2,633.60	\$10.40
10"	\$3,874.40	\$4,006.35	\$5,139.36	\$4,773.40	\$18.85
Charge per 1,000 gallons	\$5.11	\$5.29	\$6.78	\$6.30	\$0.02

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Schedule No. 4-B
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Utilities Inc. of Florida		Schedule No. 4-B			
Test Year Ended 12/31/19		Docket No. 20200139-WS			
Wastewater Rates		Page 2 of 2			
	Utility's Existing Rates	Commission Approved Interim Rates	Utility's Proposed Final Rates	Commission Approved Rates	Four Year Rate Reduction
<u>General Service (GS2)</u>					
5/8" x 3/4"	\$53.44	\$55.26	\$70.89	\$65.84	\$0.25
3/4"	\$80.16	\$82.89	\$106.33	\$98.76	\$0.38
1"	\$133.60	\$138.15	\$177.22	\$164.60	\$0.63
1 1/2"	\$267.20	\$276.30	\$354.44	\$329.20	\$1.25
2"	\$427.52	\$442.08	\$567.10	\$526.72	\$2.00
3"	\$855.04	\$884.16	\$1,134.20	\$1,053.44	\$4.00
4"	\$1,336.00	\$1,381.50	\$1,772.19	\$1,646.00	\$6.25
6"	\$2,672.00	\$2,763.00	\$3,544.39	\$3,292.00	\$12.50
8"	\$4,275.20	\$4,420.80	\$5,671.02	\$5,267.20	\$20.00
10"	\$7,748.80	\$8,012.70	\$10,278.73	\$9,546.80	\$36.25
Charge per 1,000 gallons	\$5.11	\$5.29	\$6.78	\$6.30	\$0.02
<u>General Service (GS3)</u>					
Flat Rate	\$48.06	\$49.70	\$63.75	\$59.21	\$0.22
<u>General Service (GS4)</u>					
Flat rate (905 ERCs)	\$43,494.30	\$44,978.50	\$57,694.88	\$53,585.05	\$203.62
<u>Bulk Service (BS1)</u>					
All Meter Sizes (58 ERCs)	\$1,549.76	\$1,602.54	\$2,055.75	\$1,909.36	\$7.26
Charge per 1,000 gallons	\$4.27	\$4.42	\$5.66	\$5.26	\$0.02
<u>General Reuse Service (GRS1)</u>					
All Meter Sizes	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Charge per 1,000 gallons	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<u>Typical Residential 5/8" x 3/4" Meter Bill Comparison (RS1)</u>					
3,000 Gallons	\$39.53	\$40.89	\$52.42	\$48.70	
6,000 Gallons	\$52.34	\$54.15	\$69.40	\$64.48	
8,000 Gallons	\$60.88	\$62.99	\$80.72	\$75.00	

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ORIGINAL ARTICLE

New approach to estimating the cost of common equity capital for public utilities

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Abstract The regulatory process for setting public utilities' allowed rate of return on common equity has generally used the Gordon DCF, CAPM and Risk Premium specifications to estimate the cost of common equity. Despite the widely known problems with these models, there has been little movement to adopt more recently developed asset pricing models to provide additional evidence for estimating the cost of capital. This paper presents, validates empirically and applies a general yet simple consumption-based asset pricing specification to model the risk-return relationship for stocks and estimate the cost of common equity for public utilities. The model is not necessarily superior to other models in its practical results, yet these results do indicate that it should be used to provide additional estimates of the cost of common equity. Additionally, the model raises doubts as to whether assets such as utility stocks are a consumption (business cycle) hedge.

Keywords Public utilities · Cost of capital · GARCH · Consumption asset pricing model

JEL Classification G12 · L94 · L95

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1 Introduction

Following electricity deregulation with the National Energy Policy Act of 1992, the estimation of the cost of common equity capital remains a critical component of the utility rate-of-return regulatory process. Since the cost of common equity is not observable in capital markets, it must be inferred from asset pricing models. The models that are commonly applied in regulatory proceedings are the [Gordon \(1974\)](#) Discounted Cash Flow (DCF), the Capital Asset Pricing (CAPM) and Risk Premium Models. There are other tools used to estimate the cost of common equity such as comparable earnings or earnings-to-price ratios, but they are not asset pricing models. The empirical literature on the CAPM is vast [{Fama and French \(2004\)}](#) and the CAPM is used by a number of US regulatory jurisdictions. The DCF model has not been empirically tested to the same extent as the CAPM, yet it is considered by many US regulatory jurisdictions.

The purpose of this paper is to present, test empirically and apply a recently developed general consumption-based asset pricing model that estimates the risk-return relationship directly from asset pricing data and, when estimated with recently developed time series methods, produces a prediction of the equity risk premium that is driven by its predicted volatility. The predicted risk premium is then added to a risk-free rate of return to provide an estimate of the cost of common equity. We predict two forms of the equity risk premium with the model, the risk premium net of the risk-free rate and the equity-to-debt risk premium (equity risk premium net of the relevant bond yield for the company's stock). Either can be applied to predict the common equity cost of capital for a public utility. Although the model is tested and applied to public utilities for rate of return regulation, it can be used to estimate the cost of capital for any stock. Section 2 reviews the asset pricing models typically used in public utility rate cases and the generalized consumption asset pricing model we propose to estimate the cost of common equity. Section 3 discusses the data and the empirical testing of the consumption asset pricing model. Section 4 reviews the application of the model and compares it with the DCF and CAPM results. Section 5 is the conclusion.

2 DCF, CAPM and consumption asset pricing model

2.1 DCF and CAPM approaches

The standard DCF model frequently used in estimating the cost rate of common equity in regulatory proceedings is defined by the following equation:

$$k = D_0 (1 + g) / P_0 + g,$$

where k is the expected return on common equity; D_0 is the current dividend per share; g is the expected dividend per share growth rate; and P_0 is the current market price.

The DCF was developed by [Gordon \(1974\)](#) specifically for regulatory purposes. Underlying the DCF model is the theory that the present value of an expected future stream of net cash flows during the investment holding period can be determined

by discounting those cash flows at the cost of capital, or the investors' capitalization rate. DCF theory indicates that an investor buys a stock for an expected total return rate which is derived from cash flows received in the form of dividends plus appreciation in market price (the expected growth rate) over the investment holding period. Mathematically, the expected dividend yield ($D_0(1 + g)/P_0$) on market price plus an expected growth rate equals the capitalization rate, i.e., the expected return on common equity.

The standard DCF contains several restrictive assumptions, the most contentious of which during utility cost of capital proceedings is typically that dividends per share (DPS), book value per share (BVPS), earnings per share (EPS) as well as market price grow at the same rate in perpetuity. There is also considerable contention over the proper proxy for g , prospective or historical growth in DPS, BVPS, EPS and market price and over what time period. In addition, although the standard DCF described above is a single stage annual growth model, there is considerable discussion over the use of multiple stage growth models during regulatory proceedings. Some analysts use the discrete version and others use the continuous version of the DCF model. Solving these models for k , the cost of common equity, results in differing equations to solve for k . The equation above is from the discrete version. The continuous version uses the current dividend yield and is not adjusted by g , which results in a lower estimate for k . Because of these and other restrictive assumptions that require numerous subjective judgments in application, it is often difficult for regulatory commissions to reconcile the frequently large disparities in rates of return on common equity recommended by various parties in a public utility rate case.

The CAPM model is defined by the following equation:

$$k = R_f + \beta (R_m - R_f),$$

where k is the expected return on common equity; R_f is the expected risk-free rate of return; β is the expected beta; and R_m is the expected market return.

CAPM theory defines risk as the co-variability of a security's returns with the market's returns or β , also known as systematic or market risk, with the market beta being defined as 1.0. Because CAPM theory assumes that all investors hold perfectly diversified portfolios, they are presumed to be exposed only to systematic risk and the market (according to the model) will not reward them a risk premium for unsystematic or non-market risk. In other words, the CAPM presumes that investors require compensation only for systematic or market risks which are due to macroeconomic and other events that affect the returns on all assets. Mathematically, the CAPM is applied by adding a forward-looking risk-free rate of return to an expected market equity risk premium adjusted proportionately by the expected beta to reflect the systematic risk.

As with the DCF, there is considerable contention during regulatory cost of capital proceedings as to the proper proxies for all components of the CAPM: the R_f , the R_m , as well as β . In addition, the CAPM assumption that the market will only reward investors for systematic or market risk is extremely restrictive when estimating the expected return on common equity for a single asset such as a single jurisdictional regulated operating utility. Additionally, this assumption requires that the investor have a perfectly diversified portfolio, that is, one with no unsystematic risk. Since

this assumption is not applicable, estimating the cost of common equity capital for a single utility's common equity undoubtedly will not reflect the risk actually faced by the imperfectly diversified investor.

As will be discussed in the next section, our application of the risk premium approach, the consumption asset pricing model and GARCH¹ rest on minimal assumptions and restrictions and therefore requires considerably less judgment in its application.

2.2 Risk premium approach, consumption asset pricing models, and GARCH

A widely used model to estimate the cost of common equity capital for public utilities is the risk premium approach. This approach often estimates the expected rate of return as the long-term historic mean of the realized risk premium above an historic yield plus the current yield of the relevant bond applicable to a specific utility or peer group of utilities. Litigants in public utility rate proceedings debate the choice of inputs to estimate the risk premium as well as how far back to reach into history to collect data for calculating an average that is representative of a forward-looking premium.

It is surprising that, as popular as the risk premium method is in public utility rate cases, the intuitively appealing general consumption-based asset pricing model, with its minimal assumptions and strong theoretical foundation, has not been applied to estimate the cost of common equity capital for public utilities. The model provides projections of the conditional expected risk premium on an asset based on its relation to its predicted conditional volatility. This model generalizes the well known special case asset pricing models such as the [Merton \(1973\)](#) intertemporal capital asset pricing model, [Campbell \(1993\)](#) intertemporal asset pricing model, and the habit-persistence model of [Campbell and Cochrane \(1999\)](#), which are special cases of the general model. The relation of the model to their specialized cases can be found in [Cochrane \(2006\)](#) and [Cochrane \(2007\)](#). The approach of consumption asset pricing models is to make investment decisions that maximize investors' utility from the consumption that they ultimately desire, not returns.

Even if the model is not used to project directly the expected risk premium, it can, at a minimum, be used to verify that the risk premia data chosen for estimating the cost of capital is empirically validated by fitting the model well. The model can be used to predict the equity risk premia net of the risk-free rate (equity risk premium) or to predict the equity-to-debt risk premium for a firm. We perform both of these empirical tests in this paper. The general consumption-based asset pricing model developed in [Michelfelder and Pilotte \(2011\)](#) and based on [Cochrane \(2004\)](#) provides the relationship of the ex ante risk premium to an asset's own volatility in return:

$$E_t[R_{i,t+1}] - R_{f,t} = -\frac{vol_t[M_{t+1}]}{E_t[M_{t+1}]} vol_t[R_{i,t+1}] corr_t[M_{t+1}, R_{i,t+1}]. \quad (1)$$

¹ GARCH refers to the generalized autoregressive conditional heteroskedasticity regression model which is discussed below.

where vol_t is the conditional volatility, $corr_t$ is the conditional correlation, and M_{t+1} is the stochastic discount factor (SDF).

The SDF is the intertemporal marginal rate of substitution in consumption, or, $M_{t+1} = \beta \frac{U_{c,t+1}}{U_{c,t}}$, where the U_c 's are the marginal utilities of consumption in the next period, $t + 1$, and the current period, t , and β is the discount factor for period t to $t + 1$. Equation 1 shows that the algebraic sign of the relation between the expected risk premium and the conditional volatility of an asset's risk premium is determined by the correlation between the asset's return and the SDF. That is, the direction of the relation between the asset return and the ratio of intertemporal marginal utilities in consumption inversely determines the relation between the expected risk premium and conditional volatility. When the correlation is equal to negative one, the asset's conditional expected risk premium is perfectly positively correlated with its conditional volatility. A positive relation between the conditionally expected risk premium and volatility obtains when $-1 < corr_t < 0$. A negative relation obtains when $0 < corr_t < 1$. For an asset that represents a perfect hedge against shocks to the marginal utility of consumption, with $corr_t = 1$, there will be a perfect negative correlation between the conditionally expected risk premium and its volatility.² Therefore, estimates of the relation between the first two conditional moments of a public utility stock's returns provide a direct test of the effectiveness of a public utility stock, or any asset, as a consumption hedging asset. In Eq. 1, $vol_t[M_{t+1}]/E_t[M_{t+1}]$ is the slope of the mean-variance frontier. If this slope changes over time, the estimated relation between the stock's risk and return will vary over time. This model can also be viewed simplistically as the projected expected risk premium as a function of its own projected risk, given information available at time t .

Note that the model allows for the expected risk premium to be negative if the asset hedges shocks to the marginal utility of consumption. Investors are willing to accept an expected rate of return lower than the risk-free rate of return if the pattern of volatility is such that returns are expected to rise with expected reductions in consumption. Simply, investors are willing to pay a premium for a higher level of returns volatility that has the desired pattern of returns. These desired returns patterns have a tendency to offset drops in consumption. Therefore, this model shows that investors may not be averse to volatility, but rather to the timing of expected changes in returns.

Summarizing, several conclusions can be drawn from the general model of asset pricing. First, the sign of the relation between a stock's risk premium and conditional volatility depends on the extent to which the stock serves as an intertemporal hedge against shocks to the marginal utility of consumption. Second, the relation between stock risk and return may be time-varying depending on changes in the slope of the mean-variance frontier. Third, hedging assets have desired patterns of volatility that result in expected rates of return that are less than the risk-free rate. We do not expect

² A hedging asset is one that has a positive increase in returns that is coincident with a positive shock in the ratio of intertemporal marginal utilities of consumption. Note that if we assume a concave utility function in consumption, as consumption declines, the marginal utility of consumption rises relative to last period marginal utility. If we think of a decline in consumption as a contraction in the business cycle, the hedging asset delivers positive changes in returns when the business cycle is moving into a contraction, and therefore the asset is a business cycle hedge.

that public utility stocks serve as a hedging asset as they are not viewed as defensive stocks (they do not rise in value during downturns in the stock market) due to asymmetric regulation and returns as discussed in detail in [Kolbe and Tye \(1990\)](#). Under asymmetric regulation, utility regulators have a tendency to allow the return on equity to fall below the allowed return during downturns in the business cycle and to reduce the return should it rise above the allowed return during expansions. Therefore we expect that the parameter estimates of the return-risk relationship to be positive as utility stocks are hypothesized to not be hedges.

We use the GARCH model to estimate the general asset pricing model since the GARCH model accommodates ARCH effects that improve the efficiency of the parameter estimates. It also provides a volatility forecasting model for the conditional volatility of the asset's risk premium. The conditional volatility projection is used, in turn to predict the expected risk premium. We also use the GARCH-in-Mean model (GARCH-M) since it specifies that the conditional expected risk premium is a linear function of its conditional volatility. There is a vast body of literature that estimates asset pricing models with the GARCH and GARCH-M methods and therefore we will not attempt to summarize them here.

The GARCH-M model was initially developed and tested by [Engle et al. \(1987\)](#) to estimate the relationship between US Treasury and corporate bond risk premia and their expected volatilities. The GARCH-M model is specified as:

$$R_{t+1} - R_{f,t+1} = \alpha\sigma_{t+1}^2 + \varepsilon_{t+1} \quad (2)$$

$$\sigma_{t+1}^2 = \beta_0 + \beta_1\sigma_t^2 + \beta_2\varepsilon_t^2 + \eta_{t+1} \quad (3)$$

$$\varepsilon_t | \psi_{t-1} \sim T(0, \sigma_t^2) \quad (4)$$

where R_{t+1} is the expected total return on the public utility stock index or individual utility stock; $R_{f,t+1}$ is the risk-free rate of return or the yield on an index of public utility bonds of a specified bond rating for the equity-to-debt premium; σ_{t+1}^2 is the conditional or predicted variance of the risk premium that is conditioned on past information (ψ_{t-1}); and ε_t is the error term that is conditional on ψ_{t-1} .

The conditional distribution of the error term is specified as the non-unitary variance T-distribution due to the thick-tailed distribution of the risk premia data. If the error distribution is thick-tailed, using an approximating distribution that accommodates thick tails improves the efficiency of the estimates. The parameter, α , is the return-to-risk coefficient as specified in Eq. 1 as:

$$\alpha = -\frac{vol_t[M_{t+1}]}{E_t[M_{t+1}]} corr_t[M_{t+1}, R_{i,t+1}] \quad (5)$$

Note that the coefficient will be positive if the conditional correlation between the SDF and the asset return is negative, indicating that the stock is not a hedging asset. Recall that the SDF is the ratio of intertemporal marginal utilities. Assuming a concave utility function, an upward shock in the ratio implies falling consumption, therefore an associated rise (positive correlation) in the return (R_i) would offset the reduction

in consumption, thereby causing the sign of α to be negative. The parameter, α , is also the ratio of risk premium to variance, or, the Sharpe ratio.

The intercept in Eq. 2 is restricted to zero as specified by the general asset pricing model specification. The restriction on the intercept equal to zero has been found to be robust in producing consistently positive and significant relationships between equity risk premia and risk in GARCH-M models. This is discussed in Lanne and Saikkonen (2006) and Lanne and Luoto (2007). We have found the same results in our modeling in this paper, although we have excluded these results for brevity (available upon request). Therefore we specify the prior assumption that the intercept or the “excess” return, i.e., the return not associated with risk to be equal to zero and drop the intercept from the model.

The consumption asset pricing model is estimated in the empirical section of the paper and applied in the applications section of the paper. The model is tested to (1) determine if equity-to-debt risk premium indices for utilities of differing risk specified by differing bond ratings are validated by the asset pricing model and therefore have some empirical support for risk premium prediction and application to utility cost of capital estimation, (2) determine whether equity risk premia can be predicted and fit the model and therefore be used to estimate the cost of common equity, (3) empirically test the consumption asset pricing model, and (4) ascertain whether utility stocks are assets that hedge shocks to the marginal utility of consumption.

If utility stocks are hedging assets then the cost of common equity should reflect a downward adjustment to a specified risk-free rate to reflect investors’ preferences for a hedge and the compensation that they are willing to pay for it.

3 Data and empirical results

We use portfolios as represented by public utility stock and bond indices to estimate the conditional return-risk relationship for the equity-to-debt premium. The equity-to-debt risk premium data employed for estimating Eq. 1 with the GARCH-M conditional return-risk regressions are monthly total returns on the Standard and Poor’s Public Utilities Stock Index (utility portfolio), and the monthly Moody’s Public Utility Aa, A, and Baa yields for the debt cost. We also obtained equity risk premia for the utility portfolio using the Fama-French specified risk-free rate of return, which is the holding period return on a 1-month US Treasury Bill. The data range from January 1928 to December 2007 with 960 observations. The return-risk relationships for the equity-to-debt premia are risk-differentiated by their own bond rating.

As a check, we also estimate Eq. 1 with the GARCH-M for large common stock returns using the monthly Ibbotson Large Company Common Stocks Portfolio total returns and the Ibbotson US Long-Term Government income returns as the risk-free rate. Additionally, as another check, we do the same for the University of Chicago’s Center for Research in Security Prices value-weighted stock index (CRSP) using the Fama-French risk-free rate. This is the Fama-French specification of the market equity risk premium. The data range from January 1926 to December 2007 with 984 observations for the Large Company Common Stock estimation and the data ranges

Table 1 Descriptive statistics: public utility and large company common stocks equity-to-debt and equity risk premia

Utility bond rating	Mean	Std. Dev.	Skewness	Kurtosis	JB
Aa	0.0037	0.0568	0.0744	10.07	2,001.2***
A	0.0035	0.0568	0.0632	10.06	1,991.8***
Baa	0.0031	0.0568	0.0375	10.02	1,973.6***
Ibbotson					
Large common stocks	0.0054	0.0554	0.4300	12.84	3,954.7***
CRSP value-weighted stock index	0.0062	0.0544	0.2309	10.92	2,519.1***

The public utility equity-to-debt risk premia monthly time series is from January 1928 to December 2007 with 960 observations. The equity risk premium monthly time series for the Large Common Stocks and the CRSP index are January 1926 to December 2007 with 984 observations, and January 1926 to December 2007 with 984 observations, respectively. The public utility stocks equity-to-debt risk premia are calculated as the total return on the S&P Public Utilities Index of stocks minus the Moody's Public Utility Aa, A, and Baa Indices yields to maturity. The Large Company Common Stock equity risk premia are the monthly total returns on the Ibbotson Large Company Common Stocks Portfolio minus the Ibbotson Long-Term US Government Bonds Portfolio income yield. The CRSP equity risk premia, or the Fama-French market risk premia are the CRSP total returns on the value-weighted equity index minus the 1-month holding period return on a 1 month Treasury Bill. The Jarque-Bera (JB) statistic is a goodness-of-fit measure of the departure of the distribution of a data series from normality, based on the levels of skewness and excess kurtosis. The JB statistic is χ^2 distributed with 2° of freedom. *** Significant at 0.01 level, one-tailed test

from January 1928 to January 2007 with 960 observations (same as the utilities) for the CRSP estimation.

Table 1 displays the descriptive statistics for these data. We have estimated the mean, standard deviation, skewness and kurtosis parameters, as well as the Jarque-Bera (JB) statistic to test the distribution of the data. The means of the utility equity-to-debt risk premia fall as the risk (bond rating) declines. This is consistent with the notion that larger yields are subtracted from stock returns the lower the bond rating. Intertemporally, there is an inverse relationship between risk premia and interest rates (See Brigham et al. (1985) and Harris et al. (2003)). The mean for risk premia will have a tendency to be larger during low interest rate periods.

Not surprisingly, large company common stocks have the highest mean risk premia as the majority of these firms are not rate-of-return regulated firms with a ceiling on their ROE's close to their cost of capital. Interestingly, the standard deviations of the utility stock returns are similar and slightly higher than large company common stocks. Skewness coefficients are small and positive except for Ibbotson large company common stock returns and CRSP returns that have large positive skewness. This suggests that large unregulated stocks have a tendency to have more and larger positive shocks in returns than do utilities that are rate of return regulated. The kurtosis values show that all of the risk premia are thick-tail distributed. This is also found in the significant JB statistics that test the null hypothesis that the data are normally distributed. The null hypothesis is rejected for all assets. The high kurtosis, low skewness, and significant JB statistics show that the risk premia data are substantially thick-tailed, except for non-utility stocks that are both skewed and thick-tailed. Therefore, robust estimation methods are required to produce efficient regression estimates with non-normal data. Additionally, although not shown but available upon request, the serial correlation and

ARCH Lagrange Multiplier tests show that residuals from OLS regressions of risk premia on volatilities follow an ARCH process. Therefore, the GARCH-M method will improve the efficiency of the estimates. We specify the regression error distribution as a non-unitary variance T-distribution so that thick-tails could be accommodated in the estimation and therefore produce increasingly efficient parameter estimates.

We used maximum likelihood estimation with the likelihood function specified with the non-unitary-variance T-distribution as the approximating distribution of the residuals to accommodate the thick-tailed nature of the error distribution. The equations are estimated as a system using the Marquardt iterative optimization algorithm. The chosen software for estimating the model was EViews[©] version 6.0 (2007).

Table 2 shows the GARCH-M estimations for the consumption asset pricing Eq. 1. We have estimated Eq. 1 for the utility equity risk premia using the Fama-French risk-free rate in addition to the equity-to-debt risk premia risk-differentiated by bond ratings and the two measures of the market equity risk premium. The chosen measure of volatility is the variance of risk premium (in contrast to other such measures such as the standard deviation or the log of variance. Although these results are not shown for brevity, they are robust to these other measures of volatility). The slope, which is the predicted return-to-predicted risk coefficient and Sharpe ratio, is positive and significant at the 99% level for all assets except the utility stock returns with Baa bonds, which is significant at the 95% level. Given that all slopes are positive, public utility stocks are not found to hedge shocks to the marginal utility of consumption. Note that the reward-to-risk slope rises as bond rating rises. This suggests that lower risk utility stocks provide a higher incremental risk-premium for an increase in conditional volatility. This is consistent with other studies that find that lower risk assets, such as shorter maturity bonds, have higher Sharpe Ratios than long-term bonds and stocks. See [Pilotte and Sterbenz \(2006\)](#) and [Michelfelder and Pilotte \(2011\)](#).

The variance equation shows that all GARCH coefficients (β 's) are significant at the 1% level and the sums of β_1 and β_2 are close to, but less than 1.0, indicating that the residuals of the risk premium equation follow a GARCH process and that the persistence of a volatility shock on returns and stock prices for utility stocks is temporary. The estimates of the non-unitary variance T-distribution degrees of freedom parameter are low and statistically significant, indicating that the residuals are well approximated by the T. Similar values for the log-likelihood functions (Log-L) show that each of the regressions has a similar goodness-of-fit. Chi-squared distributed likelihood ratio tests (not shown but available upon request) that compare the goodness of fit among the T and normal specifications of the likelihood function of the GARCH-M regressions show that the T has a significantly better fit than the normal distribution.

The GARCH-M results for the large company common stocks portfolio are similar to those of the utility stocks. Not surprisingly, large company common stocks do not hedge shocks to the marginal utility of consumption and volatility shocks temporarily affect their valuations. The exception is that the return-risk slope is substantially higher than utility stock slopes. This is partially due to the risk-free nature of the risk-free rates used with the non-utility equity risk premia compared to the

Table 2 Estimation of return-risk relation: public utility and large company common stocks

Utility bond rating	α	β_0	β_1	β_2	Log-L	T dist. D.F.
Aa	1.5183*** (0.5308)	0.0000** (0.0000)	0.8791*** (0.0230)	0.1031*** (0.0219)	1,604.4	9.9254*** (3.0272)
A	1.4536*** (0.5308)	0.0000** (0.0000)	0.8790*** (0.0230)	0.1033*** (0.0220)	1,605.0	9.9381*** (3.0408)
Baa	1.3318** (0.5303)	0.0000** (0.0000)	0.8789*** (0.0229)	0.1040*** (0.0220)	1,605.2	10.0*** (3.0540)
Fama-French R_f	2.1428*** (0.5318)	0.0000** (0.0000)	0.8811*** (0.0232)	0.0979*** (0.0212)	1,601.0	9.8773*** (2.9700)
Ibbotson						
Large company common stocks	2.7753*** (0.5513)	0.0001*** (0.0000)	0.8381*** (0.0269)	0.1186*** (0.0332)	1,620.8	8.8457*** (2.1613)
CRSP value-weighted stock index	3.3873*** (0.5673)	0.0001*** (0.0000)	0.8330*** (0.0270)	0.1149*** (0.0358)	1,598.9	8.8571*** (1.9505)

The results below are the GARCH-in-Mean regressions for the risk premium ($R_{t+1} - R_{f,t+1}$) on the conditional variance of the risk premium (σ_{t+1}^2) in the mean equation. The intercept in the mean equation is restricted to be equal to zero. The public utility equity-to-debt risk premia monthly time series is from January 1928 to December 2007 with 960 observations. The equity risk premium monthly time series for the Large Company Common Stocks and the CRSP index are January 1926 to December 2007 with 984 observations, and January 1926 to December 2007 with 984 observations, respectively. The public utility stocks equity-to-debt risk premia are calculated as the total return on the S&P Public Utilities Index of stocks minus the Moody's Public Utility Aa, A, and Baa Indices yields to maturity. The Large Company Common Stock equity risk premia are the monthly total returns on the Ibbotson Large Company Common Stocks Portfolio minus the Ibbotson Long-Term US Government Bonds Portfolio income yield. The CRSP equity risk premia, or the Fama-French market risk premia are the CRSP total returns on the value-weighted equity index minus the 1-month holding period return on a 1 month Treasury Bill. The estimated model is:

$$R_{t+1} - R_{f,t+1} = \alpha \sigma_{t+1}^2 + \varepsilon_{t+1} \quad \text{where } \alpha = -\frac{vol_t[M_{t+1}]}{E_t[M_{t+1}]} corr_t[M_{t+1}, R_{i,t+1}]$$

$$\sigma_{t+1}^2 = \beta_0 + \beta_1 \sigma_t^2 + \beta_2 \varepsilon_t^2 + \eta_{t+1}$$

The conditional distribution of the error term is the non-unitary variance T-distribution to accommodate the kurtosis of the risk premia and error term. Standard errors are in parentheses. ***, **, * denote significance at the 0.01, 0.05, and 0.10 levels, respectively for two-tail tests

utility bond yields that reflect risk. The utility stocks slope value of 2.1428 using the Fama-French risk-free rate is closer to the higher CRSP value of 3.3873 that is also based on the Fama-French risk-free rate. This is inconsistent with previous results herein and in other papers that find that Sharpe Ratios are lower for higher risk assets unless this finding can be interpreted as utility stocks having more risk than non-regulated stocks. The standard deviations on Table 1 suggest that utility stock return volatilities are as high as the stock returns of non-regulated firms. However, similar model estimates of portfolios of common stocks yield unstable results, such as negative as well as positive return-risk slopes when the intercept is not restricted to zero. See Campbell (1987), Glosten et al. (1993), Harvey (2001), and Whitelaw (1994).

Stock market results are highly sensitive to empirical model specification. Many studies do not consider the impact of a zero-intercept prior restriction on the stability of their results. This simple innovation has led to more consistent results in modeling stock market risk-return relationships, and therefore we have included it in this paper.

The estimation of the consumption asset pricing model for utility stock equity-debt risk premia shows that the use of bond-rating risk-differentiated risk premia are validated as their risk-return relationships are well-fitted by theoretical and empirical models of risk and return. Therefore, these data impound good representations of the risk and reward relationship.

One concern is the intertemporal stability of the alphas. Figure 1 plots the utility stock portfolio alpha (using the Fama-French R_f to calculate the premium) and its standard error for 240 month rolling regressions of the model estimated with GARCH-M in the same manner as described above to review the intertemporal stability of the alpha. A 20-year period was used for each estimation to trade off timeliness with sufficient observation of up and down stock market regimes and business cycles. This resulted in 720 estimated alphas from 1947 to 2007. The results show that the utility alpha is stable to the extent that the algebraic sign is always positive and generally significant, therefore the nature of utility stocks are assets that are not and have never been hedges during the second half of the twentieth century up to the present. The value of the alpha does change substantially. The mean of the alpha is 4.40 with a range from -0.11 (insignificantly different from 0) to 11.66. As a comparison, the alpha for the CRSP value-weighted stock index was also estimated with rolling regressions in the same manner and for the same time period. Figure 2 is a plot of the CRSP alpha and standard error. Note that the general stock market alpha is similar to that of utility stocks. They are all positive and almost all statistically significant and follow a strikingly similar cycle. Figure 3 plots both the utility and stock market alphas and demonstrates the similarity. The correlation coefficient between the utility and stock market alphas is 0.88. Recalling that the alpha is a Sharpe Ratio, we see that return to risk ratio does change substantially. This is consistent with the results in [Pilotte and Sterbenz \(2006\)](#).

One other interesting observation is that the standard errors of the alphas are highly stable over the study period and are very similar in magnitude regardless of the size of the corresponding alpha. Whereas the alpha follows a cyclical pattern, the volatility in alpha is highly stationary around a constant, long-run mean.

The GARCH-M model estimations of the consumption asset pricing model were specified with variance as the measure of volatility. We also performed the same model estimations with alternative specifications of volatility such as the standard deviation and the log of variance and the results were not sensitive to this specification.

4 Application

We apply the model in this section to compare the cost of common equity capital estimates with the DCF and CAPM models. Using EViews[©] Version 6.0, we estimated the model coefficients (α , β 's) over rolling 24 month periods ending December 2008.

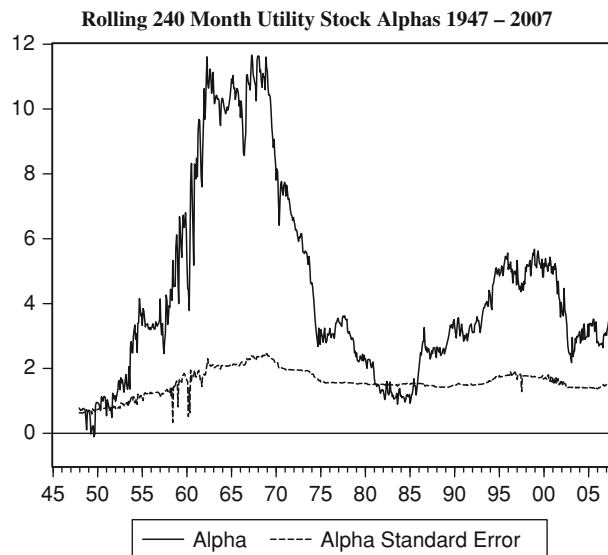


Fig. 1 Rolling 240 month utility stock alphas 1947–2007

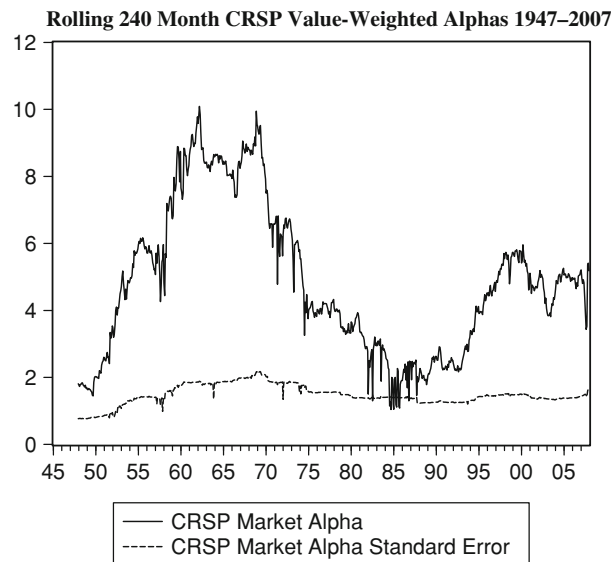


Fig. 2 Rolling 240 month CRSP value-weighted alphas 1947–2007

We repeated the estimation over 5, 10, 15, 20 and 79 year periods.³ Predicted monthly variances (σ_{t+1}^2) were generated from these estimations to produce predicted risk premiums that were calculated by multiplying the predicted variance by the “ α ” slope

³ We did not include the results of the 10 and 15 year estimations to abbreviate the amount of empirical results presented since they added no material insights beyond those already presented.

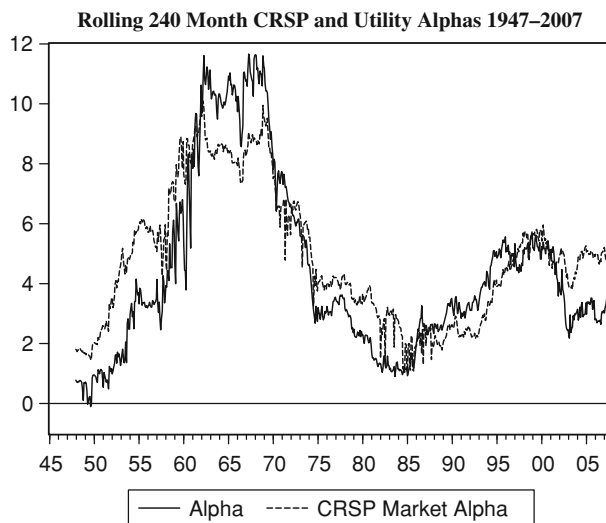


Fig. 3 Rolling 240 month CRSP and utility alphas 1947–2007

Table 3 Estimates of expected risk premia

	Mean (%)		Range (%)		Standard deviation (%)	
	Average	Spot	Average	Spot	Average	Spot
Ibbotson Associates data						
79-years	9.59	5.76	8.74–9.96	2.62–22.60	0.32	5.24
20-years	6.77	6.94	4.99–8.50	2.24–28.95	0.95	6.88
5-years	4.20	10.25	–98.49–11.62	–100.00–39.65	22.00	26.61
S&P Utility Index						
79-years	5.28	2.90	4.30–5.28	1.65–8.15	0.32	1.60
20-years	3.93	3.51	2.78–5.03	2.18–6.88	0.57	1.11
5-years	31.82	326.63	7.77–156.97	6.12–6465.74	31.47	1283.51

coefficient. To test the stability of the predicted risk premia over time, the predicted risk premia were calculated using either the predicted variance over each entire time period or the last monthly (spot) predicted variance. Table 3 presents the mean predicted risk premia, the range of predicted premia and the standard deviations for each time period. It is clear from the results that the risk premia are more stable over the rolling 24 month period when calculated using the average predicted variance compared with using the spot variance. Secondly, the 20 and 79 year means are substantially more stable and reasonable in magnitude than the 5 year means.

Next, given the lessons from the analyses above, we apply the model to mechanically⁴ estimate the cost of common equity for 8 utility companies using the model and

⁴ The term “mechanically” in this context means that the resulting values have been developed in a consistent manner with the same inputs across all utility stocks but no subjective judgment was used to develop final values for each specific utility stock application.

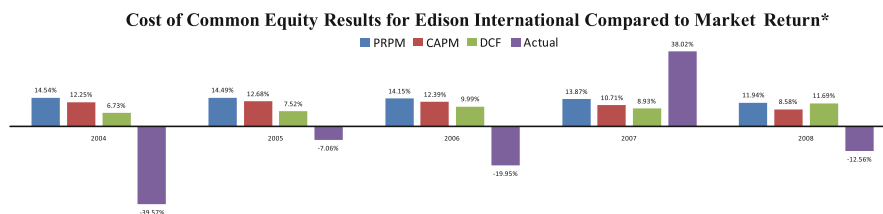
the DCF and CAPM as comparisons. We also calculated the realized market return for comparison. Two publicly-traded electric, electric and gas combination, gas, and water utilities respectively were chosen for the application. The Gordon (1974) DCF and CAPM models are used in many utility regulatory jurisdictions in the US.

The DCF was applied using a dividend yield, D_0/P_0 , derived by dividing the year-end indicated dividend per share (D_0) by the year-end spot market price (P_0). The dividend yield is grown by the year-end I/B/E/S five year projected earnings per share growth rate (g) to derive $D_0(1+g)/P_0$. The one-year predicted dividend yield is then added to the I/B/E/S five-year projected EPS growth rate to obtain the DCF estimate of the cost of common equity capital, k . This study was conducted for the 5 years ending 2008.

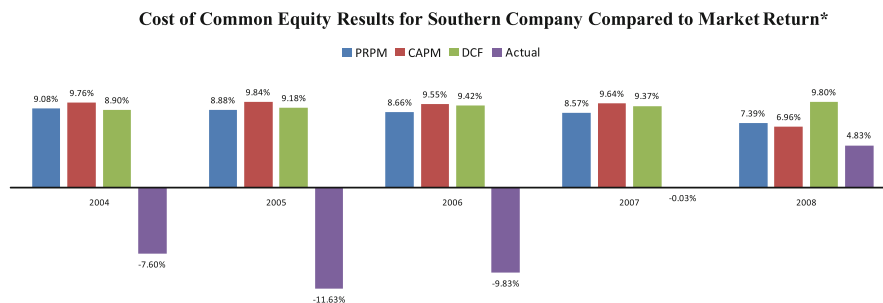
The CAPM was applied by multiplying the Value Line beta (β) available at year-end for each company by the long-term historic arithmetic mean market risk premium ($R_m - R_f$). $R_m - R_f$ is derived as the spread of the total return of large company common stocks over the income return on long-term government bonds from the Ibbotson SBBI 2009 Valuation Yearbook. The resulting company-specific market equity risk premium is then added to a projected consensus estimate of the yield on 30-year U.S. Treasury rate provided by Blue Chip Financial Forecasts as the risk-free rate (R_f) to obtain the CAPM result. This study was also conducted over the 5 years ending 2008.

Figures 4–11 show the histograms of the cost of common equity capital estimations for each of the eight public utility stocks and the realized market returns in the forthcoming year. The consumption asset pricing model appears to track more consistently with the CAPM than with the DCF which seems to produce generally lower values than the other methods. The consumption asset pricing model results are similar to the CAPM. The model and the CAPM compete as the best predictor of the rate of return on the book value of common equity (not shown but available upon request), but none of the expected returns were good predictors of market returns. That does not infer that they were not good predictors of *expected* market returns. These results are an initial indicator that the consumption asset pricing model provides reasonable and stable results. This paper does not suggest at this early juncture that the consumption asset pricing model is superior to the CAPM or DCF, although it is based on far less restrictive assumptions than these other models. For example, both the DCF and CAPM assume that markets are efficient. Many assume that the DCF requires that the market-to-book ratio to always equal one, whereas the long-term value for the Standard and Poor's 500 is equal to 2.34. The CAPM assumes that investors demand higher returns for higher volatility and that the minimum required return is the risk-free rate, whereas the consumption asset pricing model allows for investors to require returns less than the risk-free rate for stocks that may have relatively higher volatility but are hedging assets that have desirable return fluctuation patterns that offset downturns in the business cycle. Unlike the CAPM, the model prices the risk to which investors are actually exposed, whether it's systematic risk or not. Some investors are diversified and some are not; the model prices whatever risk to which the aggregate of investors of the specific stock is exposed.

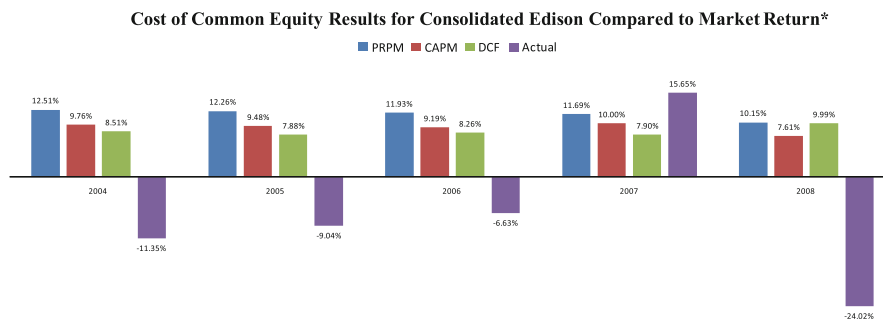
We find that the consumption asset pricing model should be used in combination with other cost of common equity pricing models as additional information in the devel-



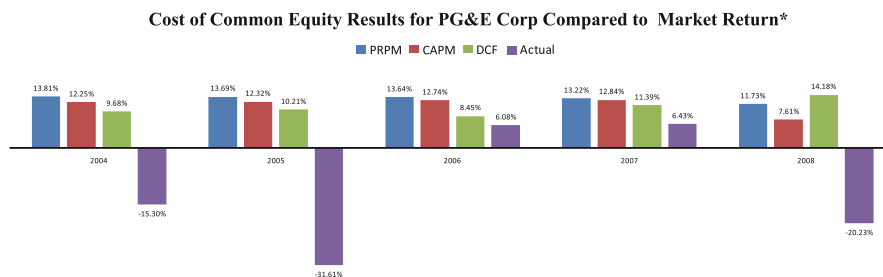
* Market returns calculated for the following years: 2005 -2009



* Market returns calculated for the following years: 2005 -2009



* Market returns calculated for the following years: 2005 - 2009

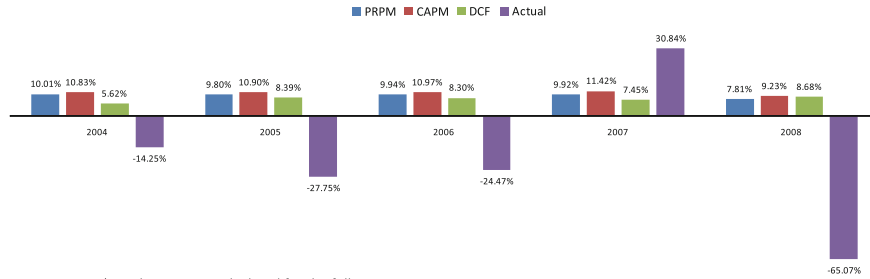


* Market returns calculated for the following years: 2005 -2009

Figs. 4-11 Comparison of the cost of common equity estimates and market

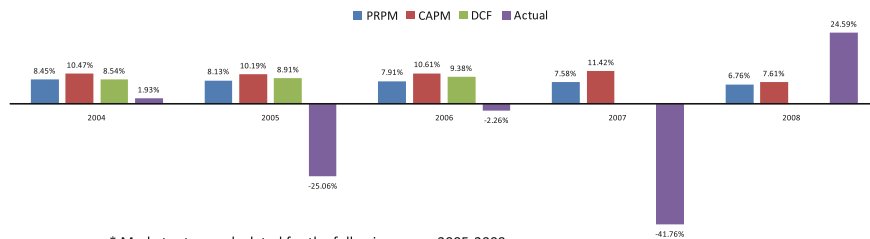
opment of a cost of common equity capital recommendation. Practitioners may find the modeling methods and the use of relatively advanced econometric methods rather cumbersome. The software for performing these estimations is readily available from EViews[©] and SAS[©]; two commonly available software packages at utilities, consult-

Cost of Common Equity Results for National Fuel Gas Co. Compared to Market Return*



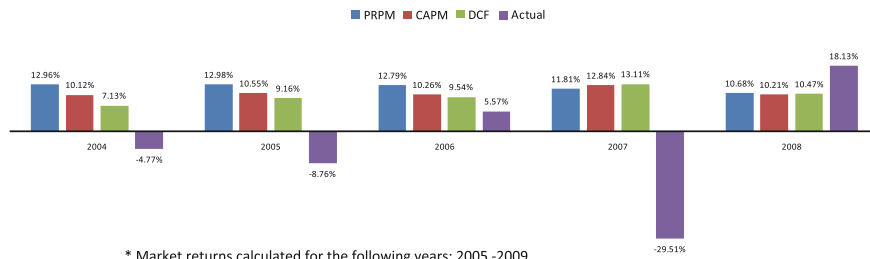
* Market returnscalculated for the following years: 2005 -2009

Cost of Common Equity Results for Laclede Group Compared to Market Return*



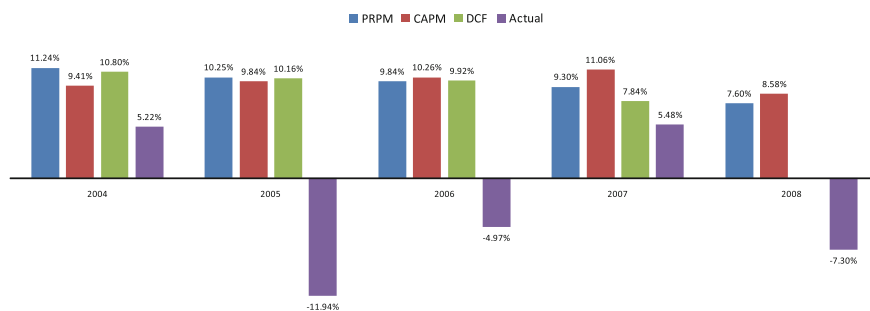
* Market returnscalculated for the following years: 2005-2009
 Missing DCF Cost of Capital Estimates Due to Unavailable Growth Rate

Cost of Common Equity Results for California Water Service Group Compared to Market Return*



* Market returns calculated for the following years: 2005 -2009

Cost of Common Equity Results for Middlesex Water Company Compared to Market Return*



* Market returnscalculated for following years: 2005 -2009
 Missing DCF Cost of Capital Estimate Due to Unavailable Growth Rate

Figs. 4-11 continued

ing firms and financial firms. Recent Ph.D. and M.S. holding members of research departments of investment and consulting firms have ready access to the model and methods discussed in this paper, although it will require years for these tools, like any “new” technology, to diffuse into standard use. Another problem is that the model requires a substantial time series history on stock returns data to develop stable estimates of risk premia. This is problematic especially for the electric and gas utility industries that have consolidated with many mergers in the recent past. This problem can be addressed by developing and predicting the value-weighted risk premium of a portfolio of similar stocks such as electric utilities that have nuclear generating assets. The specific stock in question would be included in the returns index with a weight based on market capitalization that would go to 0 when the stock price history is no longer existent reaching back into the past.

5 Conclusion

The purpose of this paper is to introduce, test empirically and apply a general consumption based asset pricing model that is based on a minimum of assumptions and restrictions that can be used to predict the risk premium to be applied in estimating the cost of common equity for public utilities in regulatory proceedings. The results support the simple consumption-based asset pricing model that predicts the ex ante risk premium with a conditionally predicted volatility in risk premium. The estimates of the cost of common equity from the consumption asset pricing model compare well with rates of return on the book value of common equity and with the CAPM, although both the model and the CAPM results are substantially higher than the DCF. This is quite common in the practice of the cost of common equity in the utility industry. The results of the model are stable and consistent over time. Therefore the model should be considered as it provides additional evidence on the cost of common equity in general and specifically in public utility regulatory proceedings. Secondly, the use of bond-rated yields to predict risk differentiated equity-to-debt risk premia is supported by the empirical evidence and therefore should be applied in estimating the cost of common equity. Finally, the robust empirical evidence on the positive risk-return relationship also shows that utility stocks are not a consumption hedge and are not good hedging securities against contractions in the economy. The model and estimation methodology presented in this paper provide a relatively simple tool to determine whether any asset is a hedge to adverse changes in the business cycle through the level of consumption in the economy.

Acknowledgments We would like to thank Dylan D’Ascendis, Sal Giunta, Selby Jones, III and Alison McVicker for highly capable research assistance, participants at the Center for Research in Regulated Industries Eastern Conferences and the Society of Utility Regulatory and Financial Analysts Annual Financial Forum, two anonymous reviewers and the editor for helpful comments.

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REQUEST:

Refer to D'Ascendis Testimony, page 21, lines 8-20.

- a. Provide the data sources, the historical returns, including how the PRPM model inputs were calculated, and the historical monthly yield on long-term U.S. Treasuries.
- b. Provide a more detailed explanation of the GARCH model calculations. Include in the explanation what a GARCH variance and a GARCH coefficient represents.
- c. Refer to Attachment DWD-3, page 2.
 - 1) Explain how a long-term average predicted variance and a spot predicted variance is calculated and the differences between the two calculations.
 - 2) Provide a further explanation of the current market conditions and how that leads to the recommendation to use an average of long-term average and spot predicted variances.
- d. Explain why the current rate for 30-year treasuries do not already embody investors' expectations for the future and, as opposed to forecasted rates, and could not be used in the model.
- e. Provide a revised PMRP analysis using the current risk free rate and current bond rates.

RESPONSE:

- a. Please see STAFF-DR-02-016 Attachment, tabs titled “PRPM WP 1” through “PRPM WP 12”.
- b. Please see STAFF-DR-02-024b Attachment.
- c.
 - 1) Please see STAFF-DR-02-016 Attachment, tab titled “PRPM WP 1”.
 - 2) As noted on page 5, lines 3 through 7 of Mr. D’Ascendis’ Direct Testimony, there is a wide range of indicated model results which may reflect increased uncertainty related to the COVID-19 pandemic and the unknown timeframe when economic conditions will normalize. To mitigate any uncertainty surrounding the recovery of the economy, I averaged the spot predicted variance with the long-term average variance for the PRPM.
- d. The cost of capital, including the cost of common equity, is expectational in nature in that it reflects investors’ expectations of future capital markets, including an expectation of interest rate levels, as well as future risks. Ratemaking is also prospective in that the rates set in this proceeding will be in effect for a period in the future. Because this is the case, projected interest rates, not current interest rates, are appropriate for ratemaking purposes.
- e. Please refer Mr. D’Ascendis’ response to part (d), above. While using current interest rates is inappropriate for cost of capital purposes, please see STAFF-DR-02-025 Attachment, tabs titled “3.1 RP Summary”, “3.2 Ind. PRPM Results”, “3.3 Risk Premium Summary”, “3.7 ERP Determination”, “3.8-3.9 Beta Adjusted ERP”, “3.12 S&P RPM Study Returns”, “3.13 Past Rate Cases Gas”, “6.3 CEM RPM Summary”, and “6.5 CEM Beta Adjusted RP” for the requested data.

PERSON RESPONSIBLE: Dylan W. D’Ascendis

Duke Energy Kentucky, Inc.
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at March 31, 2021

<u>Type Of Capital</u>	<u>Ratios (1)</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	46.72%	3.84% (1)	1.80%
Short-Term Debt	2.58%	1.67% (1)	0.04%
Common Equity	<u>50.70%</u>	10.30% (2)	<u>5.22%</u>
Total	<u>100.00%</u>		<u>7.06%</u>

Notes:

- (1) Company-provided.
- (2) From page 2 of this Attachment.

Duke Energy Kentucky, Inc.
Brief Summary of Common Equity Cost Rate

<u>Line No.</u>	<u>Principal Methods</u>	<u>Proxy Group of Seven Natural Gas Distribution Companies</u>	<u>Results using Current Interest Rates</u>
1.	Discounted Cash Flow Model (DCF) (1)	9.57%	9.57%
2.	Risk Premium Model (RPM) (2)	10.65%	10.15%
3.	Capital Asset Pricing Model (CAPM) (3)	11.62%	11.37%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	<u>12.27%</u>	<u>11.91%</u>
5.	Range of Common Equity Model Results	9.57% - 12.27%	9.57% - 11.91%
6.	Size Risk Adjustment (5)	0.15%	0.15%
7.	Credit Risk Adjustment (6)	0.14%	0.14%
8.	Flotation Cost Adjustment (7)	<u>0.12%</u>	<u>0.12%</u>
9.	Indicated Range of Common Equity Cost Rates after Adjustment	<u>9.98% - 12.68%</u>	<u>9.98% - 12.32%</u>
10.	Recommended Common Equity Cost Rate	<u><u>10.30%</u></u>	

- Notes: (1) From page 1 of Attachment DWD-2.
 (2) From page 1 of Attachment DWD-3.
 (3) From page 1 of Attachment DWD-4.
 (4) From page 1 of Attachment DWD-6.
 (5) Adjustment to reflect the Company's greater business risk due to its smaller size relative to the Utility Proxy Group as detailed in Mr. D'Ascendis' direct testimony.
 (6) Company-specific risk adjustment to reflect Duke Energy Kentucky' greater risk due to its Baa1 long-term issuer rating relative to the average A2/A3 long-term issuer rating of the Utility Proxy Group as detailed in Mr. D'Ascendis' Direct Testimony.
 (7) From page 1 of Attachment DWD-8.

Duke Energy Kentucky, Inc.
 Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Seven Natural Gas Distribution Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Seven Natural Gas Distribution Companies</u>	<u>Average Dividend Yield (1)</u>	<u>Value Line Projected Five Year Growth in EPS (2)</u>	<u>Zack's Five Year Projected Growth Rate in EPS</u>	<u>Bloomberg's Five Year Projected Growth Rate in EPS</u>	<u>Yahoo! Finance Projected Five Year Growth in EPS</u>	<u>Average Projected Five Year Growth in EPS (3)</u>	<u>Adjusted Dividend Yield (4)</u>	<u>Indicated Common Equity Cost Rate (5)</u>
Atmos Energy Corporation	2.75 %	7.00 %	7.30 %	7.10 %	7.00 %	7.10 %	2.85 %	9.95 %
New Jersey Resources Corporation	3.48	1.50	6.00	7.73	6.00	5.31	3.57	8.88
Northwest Natural Holding Company	4.00	5.50	NA	5.00	3.10	4.53	4.09	8.62
ONE Gas, Inc.	3.18	6.50	5.00	5.67	5.00	5.54	3.27	8.81
South Jersey Industries, Inc.	5.10	10.50	4.40	2.68	4.40	5.50	5.24	10.74
Southwest Gas Holdings, Inc.	3.75	8.00	5.00	5.00	4.00	5.50	3.85	9.35
Spire Inc.	3.89	9.00	5.00	12.62	5.70	8.08	4.05	12.13
							Average	<u>9.78 %</u>
							Median	<u>9.35 %</u>
							Average of Mean and Median	<u>9.57 %</u>

NA= Not Available
 NMF= Not Meaningful Figure

Notes:

- (1) Indicated dividend at 03/31/2021 divided by the average closing price of the last 60 trading days ending 03/31/2021 for each company.
- (2) From pages 2 through 8 of this Attachment.
- (3) Average of columns 2 through 5 excluding negative growth rates.
- (4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for Atmos Energy Corporation, $2.75\% \times (1 + (1/2 \times 7.10\%)) = 2.85\%$.
- (5) Column 6 + column 7.

Source of Information:

Value Line Investment Survey
 www.zacks.com Downloaded on 03/31/2021
 www.yahoo.com Downloaded on 03/31/2021
 Bloomberg Professional Services

Duke Energy Kentucky, Inc.
 Summary of Risk Premium Models for the
Proxy Group of Seven Natural Gas Distribution Companies

	Proxy Group of Seven Natural Gas Distribution Companies	Results using Current Interest Rates
Predictive Risk Premium Model (PRPM) (1)	10.96 %	10.30 %
Risk Premium Using an Adjusted Total Market Approach (2)	10.33 %	10.00 %
Average	10.65 %	10.15 %

Notes:

- (1) From page 2 of this Attachment.
- (2) From page 3 of this Attachment.

Duke Energy Kentucky, Inc.
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
<u>Proxy Group of Seven Natural Gas Distribution Companies</u>	<u>LT Average Predicted Variance</u>	<u>Spot Predicted Variance</u>	<u>Recommended Variance (2)</u>	<u>GARCH Coefficient</u>	<u>Predicted Risk Premium (3)</u>	<u>Risk-Free Rate (4)</u>	<u>Indicated ROE (5)</u>
Atmos Energy Corporation	0.34%	0.29%	0.31%	2.2515	8.76%	2.73%	11.49%
New Jersey Resources Corporation	0.38%	0.57%	0.47%	2.0412	12.27%	2.73%	15.00%
Northwest Natural Holding Company	0.33%	0.31%	0.32%	1.5418	6.03%	2.73%	8.76%
ONE Gas, Inc.	0.30%	0.44%	0.37%	4.3630	21.15%	2.73%	NMF
South Jersey Industries, Inc.	0.39%	0.69%	0.54%	1.5878	10.73%	2.73%	13.46%
Southwest Gas Holdings, Inc.	0.44%	0.35%	0.39%	1.3752	6.71%	2.73%	9.44%
Spire Inc.	0.71%	0.48%	0.60%	0.9448	7.00%	2.73%	9.73%
						Average	<u>11.31%</u>
						Median	<u>10.61%</u>
						Average of Mean and Median	<u>10.96%</u>

Using Current Interest Rates

<u>Proxy Group of Seven Natural Gas Distribution Companies</u>	<u>LT Average Predicted Variance</u>	<u>Spot Predicted Variance</u>	<u>Recommended Variance (2)</u>	<u>GARCH Coefficient</u>	<u>Predicted Risk Premium (3)</u>	<u>Risk-Free Rate (4)</u>	<u>Indicated ROE (5)</u>
Atmos Energy Corporation	0.34%	0.29%	0.31%	2.2515	8.76%	2.07%	10.83%
New Jersey Resources Corporation	0.38%	0.57%	0.47%	2.0412	12.27%	2.07%	14.34%
Northwest Natural Holding Company	0.33%	0.31%	0.32%	1.5418	6.03%	2.07%	8.10%
ONE Gas, Inc.	0.30%	0.44%	0.37%	4.3630	21.15%	2.07%	NMF
South Jersey Industries, Inc.	0.39%	0.69%	0.54%	1.5878	10.73%	2.07%	12.80%
Southwest Gas Holdings, Inc.	0.44%	0.35%	0.39%	1.3752	6.71%	2.07%	8.78%
Spire Inc.	0.71%	0.48%	0.60%	0.9448	7.00%	2.07%	9.07%

Duke Energy Kentucky, Inc.
 Indicated ROE
Derived by the Predictive Risk Premium Model (1)

[1]	[2]	[3]	[4]	[5]	[6]	[7]
					Average	<u>10.65%</u>
					Median	<u>9.95%</u>
				Average of Mean and Median		<u>10.30%</u>

Notes:

- (1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by Bloomberg Professional Service.
- (2) Given current market conditions, I recommend using average of the the long-term average predicted variance and the spot variance.
- (3) $(1+(\text{Column [3]} * \text{Column [4]})^{12}) - 1$.
- (4) From note 2 on page 2 of Attachment DWD-4.
- (5) Column [5] + Column [6].

Duke Energy Kentucky, Inc.
 Indicated Common Equity Cost Rate
 Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

<u>Line No.</u>		<u>Proxy Group of Seven Natural Gas Distribution Companies</u>	<u>Results using Current Interest Rates</u>
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	3.44 %	
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	<u>0.42 (2)</u>	
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	3.86 %	
4.	Current Yield on A2 Rated Public Utility Bonds (3)		3.15 %
5.	Adjustment to Reflect Bond Rating Difference of Proxy Group (4)	<u>0.05</u>	<u>0.05</u>
6.	Adjusted Bond Yield	3.91 %	3.20 %
7.	Equity Risk Premium (5)	<u>6.42</u>	<u>6.80</u>
8.	Risk Premium Derived Common Equity Cost Rate	<u><u>10.33 %</u></u>	<u><u>10.00 %</u></u>

- Notes:
- (1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 10 and 11 of this Attachment).
 - (2) The average yield spread of A2 rated public utility bonds over Aaa rated corporate bonds of 0.42% from page 4 of this Attachment.
 - (3) Three month average yield on A2 rated public utility bonds. Source of Information: Bloomberg Professional Services.
 - (4) Adjustment to reflect the A2/A3 Moody's LT issuer rating of the Utility Proxy Group as shown on page 5 of this Attachment. The 0.05% upward adjustment is derived by taking 1/6 of the spread between A2 and Baa2 Public Utility Bonds ($1/6 * 0.27\% = 0.05\%$) as derived from page 4 of this Attachment.
 - (5) From page 7 of this Attachment.

Duke Energy Kentucky, Inc.
 Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields - Moody's

	[1]	[2]	[3]
	<u>Aaa Rated Corporate Bond</u>	<u>A2 Rated Public Utility Bond</u>	<u>Baa2 Rated Public Utility Bond</u>
Mar-2021	3.04 %	3.44 %	3.72 %
Feb-2021	2.70	3.09	3.37
Jan-2021	<u>2.45</u>	<u>2.91</u>	<u>3.18</u>
Average	<u><u>2.73 %</u></u>	<u><u>3.15 %</u></u>	<u><u>3.42 %</u></u>

Selected Bond Spreads

A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:	<u><u>0.42 %</u></u> (1)
Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds:	<u><u>0.27 %</u></u> (2)

Notes:

- (1) Column [2] - Column [1].
- (2) Column [3] - Column [2].

Source of Information:

Bloomberg Professional Service

Duke Energy Kentucky, Inc.
 Comparison of Long-Term Issuer Ratings for
Proxy Group of Seven Natural Gas Distribution Companies

	<u>Moody's</u>		<u>Standard & Poor's</u>	
	<u>Long-Term Issuer Rating</u>		<u>Long-Term Issuer Rating</u>	
	<u>March 2021</u>		<u>March 2021</u>	
<u>Proxy Group of Seven Natural Gas Distribution Companies</u>	<u>Long-Term Issuer Rating (1)</u>	<u>Numerical Weighting (2)</u>	<u>Long-Term Issuer Rating (1)</u>	<u>Numerical Weighting (2)</u>
Atmos Energy Corporation	A1	5.0	A-	7.0
New Jersey Resources Corporation	A1	5.0	NR	- -
Northwest Natural Holding Company	Baa1	8.0	A+	5.0
ONE Gas, Inc.	A3	7.0	BBB+	8.0
South Jersey Industries, Inc.	A3	7.0	BBB	9.0
Southwest Gas Holdings, Inc.	Baa1	8.0	A-	7.0
Spire Inc.	A1/A2	5.5	A-	7.0
Average	<u>A2/A3</u>	<u>6.5</u>	<u>A-</u>	<u>7.2</u>

Notes:

- (1) Ratings are that of the average of each company's utility operating subsidiaries.
- (2) From page 6 of this Attachment.

Source Information: Moody's Investors Service
 Standard & Poor's Global Utilities Rating Service

Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

<u>Moody's Bond Rating</u>	<u>Numerical Bond Weighting</u>	<u>Standard & Poor's Bond Rating</u>
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Duke Energy Kentucky, Inc.
 Judgment of Equity Risk Premium for
Proxy Group of Seven Natural Gas Distribution Companies

<u>Line No.</u>		<u>Proxy Group of Seven Natural Gas Distribution Companies</u>	<u>Results using Current Interest Rates</u>
1.	Calculated equity risk premium based on the total market using the beta approach (1)	7.99 %	8.40 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	5.57	5.97
3.	Predicted Equity Risk Premium Based on Regression Analysis of 798 Fully-Litigated Natural Gas Utility Rate Cases (3)	<u>5.69</u>	<u>6.03</u>
4.	Average equity risk premium	<u><u>6.42</u></u> %	<u><u>6.80</u></u> %

Notes: (1) From page 8 of this Attachment.
 (2) From page 12 of this Attachment.
 (3) From page 13 of this Attachment.

Duke Energy Kentucky, Inc.
 Derivation of Equity Risk Premium Based on the Total Market Approach
 Using the Beta for the
Proxy Group of Seven Natural Gas Distribution Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Seven Natural Gas Distribution Companies</u>	<u>Results using Current Interest Rates</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>			
1.	Ibbotson Equity Risk Premium (1)	5.92 %	5.92 %
2.	Regression on Ibbotson Risk Premium Data	8.83 (2)	9.59 (3)
3.	Ibbotson Equity Risk Premium based on PRPM (4)	9.40	9.40
4.	Equity Risk Premium Based on Value Line Summary and Index	5.03 (5)	5.67 (6)
5.	Equity Risk Premium Based on Value Line S&P 500 Companies	10.77 (7)	11.41 (8)
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies	<u>12.17 (9)</u>	<u>12.81 (10)</u>
7.	Conclusion of Equity Risk Premium	8.69 %	9.13 %
8.	Adjusted Beta (11)	<u>0.92</u>	<u>0.92</u>
9.	Forecasted Equity Risk Premium	<u><u>7.99 %</u></u>	<u><u>8.40 %</u></u>

Notes provided on page 9 of this Attachment.

Duke Energy Kentucky, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Natural Gas Distribution Companies

Notes:

- (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Duff & Phelps 2021 SBBI® Yearbook minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1928-2020.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2020 referenced in Note 1 above. Using the equation generated from the regression, an expected equity risk premium is calculated using the average consensus forecast of Aaa corporate bonds of 3.44% (from page 3 of this Schedule).
- (3) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2020 referenced in Note 1 above. Using the equation generated from the regression, an expected equity risk premium is calculated using the three-month average Aaa and Aa2 rated corporate bond of 2.80%.
- (4) The Predictive Risk Premium Model (PRPM) is discussed in the accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns and average Aaa and Aa corporate monthly bond yields, from January 1928 through March 2021.
- (5) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 3.44% (from page 3 of this Attachment) from the projected 3-5 year total annual market return of 8.47% (described fully in note 1 on page 2 of Attachment DWD-4).
- (6) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the current 3 month average of Aaa and Aa2 corporate bond yields of 2.80% from the projected 3-5 year total annual market return of 8.47% (described fully in note 1 on page 2 of Attachment DWD-4).
- (7) Using data from Value Line for the S&P 500, an expected total return of 14.21% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.44% results in an expected equity risk premium of 10.77%.
- (8) Using data from Value Line for the S&P 500, an expected total return of 14.21% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the current 3 month average of Aaa and Aa2 corporate bond yields of 2.80% results in an expected equity risk premium of 11.41%.

Duke Energy Kentucky, Inc.

Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the

Proxy Group of Seven Natural Gas Distribution Companies

- (9) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 15.61% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.44% results in an expected equity risk premium of 12.17%.
- (10) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 15.61% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the current 3 month average of Aaa and Aa corporate bond yields of 2.80% results in an expected equity risk premium of 12.81%.
- (11) Average of mean and median beta from Attachment DWD-4.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, April 1, 2021 and December 1, 2020
Bloomberg Professional Service

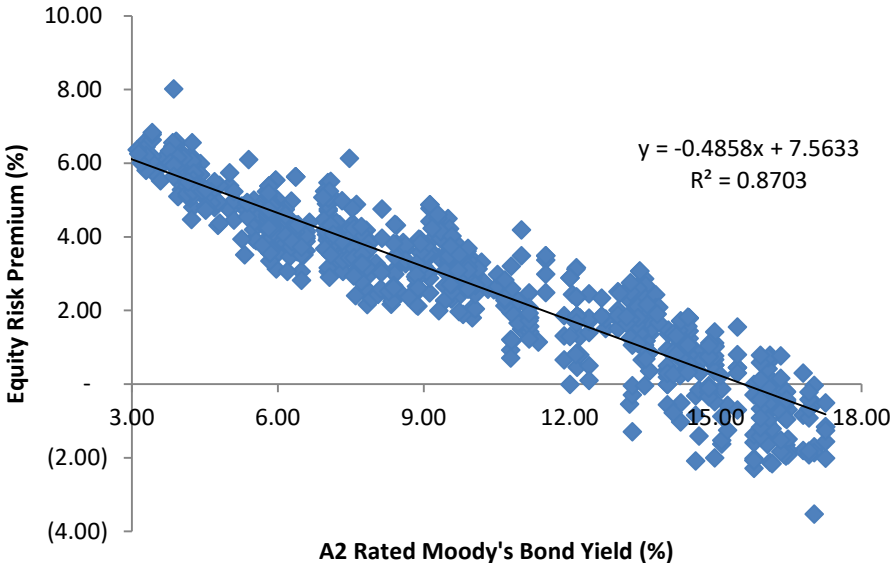
Duke Energy Kentucky, Inc.
 Derivation of Mean Equity Risk Premium Based Studies
 Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

<u>Line No.</u>		<u>Implied Equity Risk Premium</u>	<u>Results using Current Interest Rates</u>
	<u>Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):</u>		
1.	Historical Equity Risk Premium	4.16 %	4.16 %
2.	Regression of Historical Equity Risk Premium	6.45 (2)	7.03 (3)
3.	Forecasted Equity Risk Premium Based on PRPM (4)	4.77	4.77
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data)	6.75 (5)	7.46 (6)
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data)	<u>5.72 (7)</u>	<u>6.43 (8)</u>
6.	Average Equity Risk Premium (9)	<u><u>5.57 %</u></u>	<u><u>5.97 %</u></u>

- Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2020. Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2020 referenced in note 1 above. Using the equation generated from the regression, an expected equity risk premium is calculated using the prospective A2 rated public utility bond yield of 3.86% (from line 3, page 3 of this Schedule).
- (3) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2020 referenced in note 1 above. Using the equation generated from the regression, an expected equity risk premium is calculated using the current A2 rated public utility bond yield of 3.15% (from line 4, page 3 of this Schedule).
- (4) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - March 2021.
- (5) Using data from Value Line for the S&P Utilities Index, an expected return of 10.61% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.86%, calculated on line 3 of page 3 of this Attachment results in an equity risk premium of 6.75%. ($10.61\% - 3.86\% = 6.75\%$)
- (6) Using data from Value Line for the S&P Utilities Index, an expected return of 10.61% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the current A2 rated public utility bond yield of 3.15%, calculated on line 4 of page 3 of this Attachment results in an equity risk premium of 7.46%. ($10.61\% - 3.15\% = 7.46\%$)
- (7) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 9.58% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.86%, calculated on line 3 of page 3 of this Attachment results in an equity risk premium of 5.72%. ($9.58\% - 3.86\% = 5.72\%$)

- (8) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 9.58% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the current A2 rated public utility bond yield of 3.15%, calculated on line 4 of page 3 of this Attachment results in an equity risk premium of 6.43%. ($9.58\% - 3.15\% = 6.43\%$)
- (9) Average of lines 1 through 5.

Duke Energy Kentucky, Inc.
Prediction of Equity Risk Premiums Relative to
Moody's A2 Rated Utility Bond Yields



<u>Constant</u>	<u>Slope</u>	<u>Prospective A2 Rated Utility Bond (1)</u>	<u>Prospective Equity Risk Premium</u>
7.563324 %	-0.48579	3.86 %	5.69 %
<u>Constant</u>	<u>Slope</u>	<u>Prospective A2 Rated Utility Bond (1)</u>	<u>Prospective Equity Risk Premium</u>
7.563324 %	-0.48579	3.15 %	6.03 %

- Notes:
- (1) From line 3 of page 3 of this Attachment.
 - (2) From line 4 of page 3 of this Schedule.

Source of Information:
 Regulatory Research Associates
 Bloomberg Professional Services

Duke Energy Kentucky, Inc.
 Indicated Common Equity Cost Rate Through Use
 of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Seven Natural Gas Distribution Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost
Atmos Energy Corporation	0.80	0.91	0.85	9.54 %	2.73 %	10.84 %	11.20 %	11.02 %
New Jersey Resources Corporation	0.95	0.96	0.96	9.54	2.73	11.89	11.99	11.94
Northwest Natural Holding Company	0.80	0.83	0.82	9.54	2.73	10.55	10.98	10.77
ONE Gas, Inc.	0.80	0.99	0.90	9.54	2.73	11.32	11.56	11.44
South Jersey Industries, Inc.	1.05	0.97	1.01	9.54	2.73	12.37	12.34	12.36
Southwest Gas Holdings, Inc.	0.95	1.07	1.01	9.54	2.73	12.37	12.34	12.36
Spire Inc.	0.85	0.99	0.92	9.54	2.73	11.51	11.70	11.60
Mean			0.92			11.55 %	11.73 %	11.64 %
Median			0.92			11.51 %	11.70 %	11.60 %
Average of Mean and Median			0.92			11.53 %	11.72 %	11.62 %

Using Current Interest Rates

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Seven Natural Gas Distribution Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (3)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (4)
Atmos Energy Corporation	0.80	0.91	0.85	9.98 %	2.07 %	10.55 %	10.93 %	10.74 %
New Jersey Resources Corporation	0.95	0.96	0.96	9.98	2.07	11.65	11.75	11.70
Northwest Natural Holding Company	0.80	0.83	0.82	9.98	2.07	10.26	10.70	10.48
ONE Gas, Inc.	0.80	0.99	0.90	9.98	2.07	11.05	11.30	11.18
South Jersey Industries, Inc.	1.05	0.97	1.01	9.98	2.07	12.15	12.13	12.14
Southwest Gas Holdings, Inc.	0.95	1.07	1.01	9.98	2.07	12.15	12.13	12.14
Spire Inc.	0.85	0.99	0.92	9.98	2.07	11.25	11.45	11.35
Mean			0.92			11.30 %	11.49 %	11.39 %
Median			0.92			11.25 %	11.45 %	11.35 %
Average of Mean and Median			0.92			11.28 %	11.47 %	11.37 %

Notes on page 2 of this Attachment.

Duke Energy Kentucky, Inc.
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

(1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

<u>Historical Data MRP Estimates:</u>	<u>Using Prospective Interest Rates</u>	<u>Using Current Interest Rates</u>
Measure 1: Ibbotson Arithmetic Mean MRP (1926-2020)		
Arithmetic Mean Monthly Returns for Large Stocks 1926-2020:	12.20 %	12.20 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.05	5.05
MRP based on Ibbotson Historical Data:	<u>7.15 %</u>	<u>7.15 %</u>
Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2020)	<u>9.54 %</u>	<u>10.20 %</u>
Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - March 2021)	<u>10.46 %</u>	<u>10.46 %</u>
<u>Value Line MRP Estimates:</u>		
Measure 4: Value Line Projected MRP (Thirteen weeks ending April 02, 2021)		
Total projected return on the market 3-5 years hence*:	8.47 %	8.47 %
Projected Risk-Free Rate (see note 2):	2.73	2.07
MRP based on Value Line Summary & Index:	<u>5.74 %</u>	<u>6.40 %</u>
*Forecasted 3-5 year capital appreciation plus expected dividend yield		
Measure 5: Value Line Projected Return on the Market based on the S&P 500		
Total return on the Market based on the S&P 500:	14.21 %	14.21 %
Projected Risk-Free Rate (see note 2):	2.73	2.07
MRP based on Value Line data	<u>11.48 %</u>	<u>12.14 %</u>
Measure 6: Bloomberg Projected MRP		

Total return on the Market based on the S&P 500:	15.61 %	15.61 %
Projected Risk-Free Rate (see note 2):	2.73	2.07
MRP based on Bloomberg data	12.88 %	13.54 %
Average of Value Line, Ibbotson, and Bloomberg MRP:	9.54 %	9.98 %

(2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 10 and 11 of Attachment DWD-3.) The projection of the risk-free rate is illustrated below:

Second Quarter 2021	2.40 %
Third Quarter 2021	2.50
Fourth Quarter 2021	2.50
First Quarter 2022	2.60
Second Quarter 2022	2.70
Third Quarter 2022	2.70
2022-2026	2.80
2027-2031	3.60
	2.73 %

(3) Three-month average on 30-year Treasury bond yield ended March, 2021 as shown below:

Jan-21	1.82 %
Feb-21	2.04
Mar-21	2.34
	2.07 %

(4) Average of Column 6 and Column 7.

Sources of Information:

- Value Line Summary and Index
- Blue Chip Financial Forecasts, April 1, 2021 and December 1, 2020
- Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
- Bloomberg Professional Services

Duke Energy Kentucky, Inc.
 Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

	[1]	[2]	[3]	[4]
<u>Proxy Group of Seven Natural Gas Distribution Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Unadjusted Beta</u>	<u>Residual Standard Error of the Regression</u>	<u>Standard Deviation of Beta</u>
Atmos Energy Corporation	0.80	0.66	2.7453	0.0685
New Jersey Resources Corporation	0.95	0.92	3.0205	0.0754
Northwest Natural Holding Company	0.80	0.69	3.1454	0.0785
ONE Gas, Inc.	0.80	0.67	2.7077	0.0676
South Jersey Industries, Inc.	1.05	1.00	3.4767	0.0868
Southwest Gas Holdings, Inc.	0.95	0.88	3.0244	0.0755
Spire Inc.	0.85	0.71	2.8287	0.0706
Average	<u>0.89</u>	<u>0.79</u>	<u>2.9927</u>	<u>0.0747</u>
Beta Range (+/- 2 std. Devs. of Beta) 2 std. Devs. of Beta	0.64 0.15	0.94		
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.7297	3.2557		
Std. dev. of the Res. Std. Err.	0.1315			
2 std. devs. of the Res. Std. Err.	0.2630			

Source of Information: Valueline Proprietary Database, March 2021

Duke Energy Kentucky, Inc.
 Proxy Group of Non-Price Regulated Companies
 Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

	[1]	[2]	[3]	[4]
<u>Proxy Group of Forty-Eight Non-Price Regulated Companies</u>	<u>VL Adjusted Beta</u>	<u>Unadjusted Beta</u>	<u>Residual Standard Error of the Regression</u>	<u>Standard Deviation of Beta</u>
Apple Inc.	0.90	0.81	3.1746	0.0792
Abbott Labs.	0.95	0.88	2.7401	0.0684
Assurant Inc.	0.90	0.84	2.9537	0.0737
ANSYS, Inc.	0.85	0.74	2.8841	0.0720
Booz Allen Hamilton	0.90	0.82	3.0468	0.0760
Becton, Dickinson	0.80	0.66	2.8952	0.0722
Brown-Forman 'B'	0.90	0.77	2.7453	0.0685
Broadridge Fin'l	0.85	0.70	2.7332	0.0682
Brady Corp.	1.00	0.93	3.0007	0.0749
CACI Int'l	0.95	0.86	3.1684	0.0791
Casey's Gen'l Stores	0.90	0.78	3.2522	0.0812
Cadence Design Sys.	0.90	0.79	3.0338	0.0757
Cerner Corp.	0.90	0.84	2.7309	0.0681
CSW Industrials	0.90	0.81	2.8884	0.0721
Quest Diagnostics	0.85	0.75	2.7411	0.0684
Lauder (Estee)	0.95	0.85	2.8216	0.0704
Exponent, Inc.	0.90	0.79	2.9131	0.0727
Fastenal Co.	0.90	0.85	3.2203	0.0804

Gentex Corp.	0.95	0.91	2.7546	0.0687
Int'l Flavors & Frag	0.95	0.87	3.2238	0.0804
Ingredion Inc.	0.90	0.78	2.8793	0.0718
Iron Mountain	0.90	0.82	3.0897	0.0771
Hunt (J.B.)	0.95	0.86	2.8344	0.0707
J&J Snack Foods	0.90	0.84	2.9208	0.0729
Henry (Jack) & Assoc	0.85	0.71	2.7734	0.0692
ManTech Int'l 'A'	0.85	0.77	3.0653	0.0765
McCormick & Co.	0.80	0.66	2.7887	0.0696
Altria Group	0.90	0.83	2.9215	0.0729
MSA Safety	1.00	0.94	3.0076	0.0750
MSCI Inc.	0.95	0.87	2.9662	0.0740
Motorola Solutions	0.90	0.80	2.7926	0.0697
Vail Resorts	0.95	0.88	3.1939	0.0797
Maxim Integrated	0.95	0.87	2.9404	0.0734
Northrop Grumman	0.85	0.71	2.9032	0.0724
Old Dominion Freight	0.90	0.83	3.0708	0.0766
PerkinElmer Inc.	0.95	0.86	2.8896	0.0721
Philip Morris Int'l	0.95	0.88	3.2481	0.0811
Pool Corp.	0.85	0.75	3.2001	0.0799
Post Holdings	0.95	0.86	3.0105	0.0751
RLI Corp.	0.80	0.64	2.9883	0.0746
Rollins, Inc.	0.85	0.73	2.9697	0.0741
Selective Ins. Group	0.85	0.77	3.0004	0.0749
Sirius XM Holdings	0.95	0.91	2.7995	0.0699
Bio-Techne Corp.	0.80	0.67	3.2475	0.0810
Tetra Tech	0.90	0.84	3.0245	0.0755

Waters Corp.	0.95	0.86	2.7531	0.0687
West Pharmac. Svcs.	0.85	0.70	3.1887	0.0796
Western Union	0.80	0.67	2.7346	0.0682
Average	<u>0.90</u>	<u>0.80</u>	<u>2.9609</u>	<u>0.0739</u>
Proxy Group of Seven Natural Gas Distribution Companies	<u>0.89</u>	<u>0.79</u>	<u>2.9927</u>	<u>0.0747</u>

Source of Information:

Valueline Proprietary Database, March 2021

Duke Energy Kentucky, Inc.
 Summary of Cost of Equity Models Applied to
 Proxy Group of Forty-Eight Non-Price Regulated Companies
 Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

<u>Principal Methods</u>	<u>Proxy Group of Forty-Eight Non- Price Regulated Companies</u>	<u>Results using Current Interest Rates</u>
Discounted Cash Flow Model (DCF) (1)	12.60 %	12.60 %
Risk Premium Model (RPM) (2)	12.35	11.87
Capital Asset Pricing Model (CAPM) (3)	<u>11.59</u>	<u>11.34</u>
	Mean <u>12.18</u> %	<u>11.94</u> %
	Median <u>12.35</u> %	<u>11.87</u> %
	Average of Mean and Median <u>12.27</u> %	<u>11.91</u> %

Notes:

- (1) From page 2 of this Attachment.
- (2) From page 3 of this Attachment.
- (3) From page 6 of this Attachment.

Duke Energy Kentucky, Inc.
 DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
<u>Proxy Group of Forty-Eight Non-Price Regulated Companies</u>	<u>Average Dividend Yield</u>	<u>Value Line Projected Five Year Growth in EPS</u>	<u>Zack's Five Year Projected Growth Rate in EPS</u>	<u>Bloomberg's Five Year Projected Growth Rate in EPS</u>	<u>Yahoo! Finance Projected Five Year Growth in EPS</u>	<u>Average Projected Five Year Growth Rate in EPS</u>	<u>Adjusted Dividend Yield</u>	<u>Indicated Common Equity Cost Rate (1)</u>
Apple Inc.	0.64 %	14.50 %	11.00 %	9.50 %	14.69 %	12.42 %	0.68 %	13.10 %
Abbott Labs.	1.52	12.00	14.00	14.20	15.58	13.94	1.63	15.57
Assurant Inc.	1.96	11.50	NA	NA	19.40	15.45	2.11	17.56
ANSYS, Inc.	-	10.00	NA	12.05	8.00	10.02	-	NA
Booz Allen Hamilton	1.76	12.50	10.60	NA	10.99	11.36	1.86	13.22
Becton, Dickinson	1.33	9.00	9.00	9.54	12.00	9.88	1.40	11.28
Brown-Forman 'B'	0.98	12.00	NA	5.39	7.53	8.31	1.02	9.33
Broadridge Fin'l	1.56	10.50	NA	10.70	10.00	10.40	1.64	12.04
Brady Corp.	1.68	8.00	7.00	7.33	7.00	7.33	1.74	9.07
CACI Int'l	-	14.00	10.50	10.53	12.91	11.99	-	NA
Casey's Gen'l Stores	0.68	9.00	NA	15.81	7.85	10.89	0.72	11.61
Cadence Design Sys.	-	13.00	11.10	11.90	11.10	11.78	-	NA
Cerner Corp.	1.17	8.00	12.30	8.61	11.51	10.11	1.23	11.34
CSW Industrials	0.42	8.50	NA	NA	12.00	10.25	0.44	10.69
Quest Diagnostics	2.01	10.00	26.50	(6.93)	9.22	15.24	2.16	17.40
Lauder (Estee)	0.77	11.00	10.70	17.23	21.10	15.01	0.83	15.84
Exponent, Inc.	0.85	12.00	NA	13.30	15.00	13.43	0.91	14.34
Fastenal Co.	2.34	8.00	9.00	10.15	8.04	8.80	2.44	11.24
Genlex Corp.	1.35	10.50	4.70	10.25	15.80	10.31	1.42	11.73
Int'l Flavors & Frag	2.37	6.50	10.00	21.05	10.00	11.89	2.51	14.40
Ingredion Inc.	2.99	6.00	NA	11.00	1.90	6.30	3.08	9.38
Iron Mountain	7.38	7.50	1.70	4.00	1.70	3.73	7.52	11.25
Hunt (J.B.)	0.74	6.50	15.00	17.23	20.73	14.87	0.80	15.67
J&J Snack Foods	1.47	10.00	NA	NA	6.00	8.00	1.53	9.53
Henry (Jack) & Assoc	1.21	10.50	10.90	12.47	10.02	10.97	1.28	12.25
ManTech Int'l 'A'	1.74	12.00	5.10	5.06	4.53	6.67	1.80	8.47
McCormick & Co.	1.53	6.50	6.60	5.82	5.50	6.11	1.58	7.69
Altria Group	7.66	6.50	4.00	2.70	4.42	4.41	7.83	12.24
MSA Safety	1.07	6.50	NA	9.00	18.00	11.17	1.13	12.30
MSCI Inc.	0.74	18.00	NA	12.20	14.37	14.86	0.79	15.65
Motorola Solutions	1.59	7.00	9.00	11.30	5.88	8.30	1.66	9.96
Vail Resorts	-	8.50	NA	86.86	69.80	55.05	-	NA
Maxim Integrated	-	8.00	10.00	11.30	18.44	11.94	-	NA
Northrop Grumman	1.92	7.00	NA	4.96	5.44	5.80	1.98	7.78
Old Dominion Freight	0.37	9.00	15.30	16.18	15.89	14.09	0.40	14.49
PerkinElmer Inc.	0.20	17.50	19.50	(6.87)	17.20	18.07	0.22	18.29

Philip Morris Int'l	5.65	5.00	8.30	10.39	11.42	8.78	5.90	14.68
Pool Corp.	0.67	17.50	NA	17.00	17.00	17.17	0.73	17.90
Post Holdings	-	11.50	NA	20.30	31.20	21.00	-	NA
RLI Corp.	0.90	12.50	NA	NA	9.80	11.15	0.95	12.10
Rollins, Inc.	0.89	11.50	NA	NA	8.20	9.85	0.93	10.78
Selective Ins. Group	1.44	8.50	NA	NA	5.10	6.80	1.49	8.29
Sirius XM Holdings	0.96	24.50	14.80	26.96	12.93	19.80	1.06	20.86
Bio-Techne Corp.	0.35	12.50	15.00	19.03	15.00	15.38	0.38	15.76
Tetra Tech	0.51	13.50	15.00	13.85	15.00	14.34	0.55	14.89
Waters Corp.	-	6.00	8.80	9.03	7.17	7.75	-	NA
West Pharmac. Svcs.	0.24	17.00	22.60	17.21	22.60	19.85	0.26	20.11
Western Union	3.99	6.00	NA	4.57	9.25	6.61	4.12	<u>10.73</u>
							Mean	<u>12.95</u> %
							Median	<u>12.24</u> %
							Average of Mean and Median	<u>12.60</u> %

NA= Not Available

NMF= Not Meaningful Figure

- (1) The application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the application of the DCF to the Utility Proxy Group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of March 31, 2021. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, www.zacks.com, Bloomberg Professional Services, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

Source of Information: Value Line Investment Survey
 www.zacks.com Downloaded on 03/31/2021
 www.yahoo.com Downloaded on 03/31/2021
 Bloomberg Professional Services

Duke Energy Kentucky, Inc.
 Indicated Common Equity Cost Rate
 Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

<u>Line No.</u>		<u>Proxy Group of Forty- Eight Non-Price Regulated Companies</u>	<u>Results using Current Interest Rates</u>
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1)	4.36 %	
2.	Current Yield on Baa2 Rated Corporate Bonds (2)		3.47 %
3.	Equity Risk Premium (3)	<u>7.99</u>	<u>8.40</u>
4.	Risk Premium Derived Common Equity Cost Rate	<u>12.35 %</u>	<u>11.87 %</u>

Notes: (1) Average forecast of Baa2 corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated April 1, 2021 and December 1, 2020 (see pages 10 and 11 of Attachment DWD-3). The estimates are detailed below.

Second Quarter 2021	3.90 %
Third Quarter 2021	4.00
Fourth Quarter 2021	4.10
First Quarter 2022	4.20
Second Quarter 2022	4.30
Third Quarter 2022	4.40
2022-2026	4.60
2027-2031	<u>5.40</u>
Average	<u>4.36 %</u>

(2) Three-month average Baa2 corporate bond yield ended March, 2021 as reported by Bloomberg Professional Services shown below:

Jan-21	3.24
Feb-21	3.42
Mar-21	<u>3.74</u>
Average	<u>3.47 %</u>

(2) From page 5 of this Attachment.

Duke Energy Kentucky, Inc.
 Comparison of Long-Term Issuer Ratings for the
 Proxy Group of Forty-Eight Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Natural Gas Distribution Companies

<u>Proxy Group of Forty-Eight Non-Price Regulated Companies</u>	<u>Moody's Long-Term Issuer Rating March 2021</u>		<u>Standard & Poor's Long-Term Issuer Rating March 2021</u>	
	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting (1)</u>	<u>Long-Term Issuer Rating</u>	<u>Numerical Weighting (1)</u>
Apple Inc.	Aa1	2.0	AA+	2.0
Abbott Labs.	A3	7.0	A	6.0
Assurant Inc.	Baa3	10.0	BBB	9.0
ANSYS, Inc.	NA	--	NA	--
Booz Allen Hamilton	NA	--	NA	--
Becton, Dickinson	Baa3	10.0	BBB	9.0
Brown-Forman 'B'	A1	5.0	A-	7.0
Broadridge Fin'l	Baa1	8.0	BBB+	8.0
Brady Corp.	NA	--	NA	--
CACI Int'l	NA	--	BB+	11.0
Casey's Gen'l Stores	NA	--	NA	--
Cadence Design Sys.	Baa2	9.0	BBB+	8.0
Cerner Corp.	NA	--	NA	--
CSW Industrials	NA	--	NA	--

Quest Diagnostics	Baa2	9.0	BBB+	8.0
Lauder (Estee)	A1	5.0	A+	5.0
Exponent, Inc.	NA	--	NA	--
Fastenal Co.	NA	--	NA	--
Gentex Corp.	NA	--	NA	--
Int'l Flavors & Frag	Baa3	10.0	BBB	9.0
Ingredion Inc.	Baa1	8.0	BBB	9.0
Iron Mountain	Ba3	13.0	BB-	13.0
Hunt (J.B.)	Baa1	8.0	BBB+	8.0
J&J Snack Foods	NA	--	NA	--
Henry (Jack) & Assoc	NA	--	NA	--
ManTech Int'l 'A'	WR	--	BB+	11.0
McCormick & Co.	Baa2	9.0	BBB	9.0
Altria Group	A3	7.0	BBB	9.0
MSA Safety	NA	--	NA	--
MSCI Inc.	Ba2	12.0	BB+	11.0
Motorola Solutions	Baa3	10.0	BBB-	10.0
Vail Resorts	B2	15.0	BB	12.0
Maxim Integrated	Baa1	8.0	BBB+	8.0
Northrop Grumman	Baa2	9.0	BBB+	8.0
Old Dominion Freight	NA	--	NA	--
PerkinElmer Inc.	Baa3	10.0	BBB	9.0
Philip Morris Int'l	A2	6.0	A	6.0
Pool Corp.	NA	--	NA	--
Post Holdings	B2	15.0	B+	14.0
RLI Corp.	Baa2	9.0	BBB+	8.0
Rollins, Inc.	NA	--	NA	--
Selective Ins. Group	Baa2	9.0	BBB	9.0
Sirius XM Holdings	NA	--	BB	12.0
Bio-Techne Corp.	NA	--	NA	--

Tetra Tech	NA	--	NA	--
Waters Corp.	NA	--	NA	--
West Pharmac. Svcs.	NA	--	NA	--
Western Union	Baa2	9.0	BBB	9.0
	<hr/>	<hr/>	<hr/>	<hr/>
Average	Baa2	8.9	BBB	8.9
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

Notes:
 (1) From page 6 of Attachment DWD-3.

Source of Information:
 Bloomberg Professional Services

Duke Energy Kentucky, Inc.
 Derivation of Equity Risk Premium Based on the Total Market Approach
 Using the Beta for
 Proxy Group of Forty-Eight Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Natural Gas Distribution Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Forty-Eight Non- Price Regulated Companies</u>	<u>Results using Current Interest Rates</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>			
1.	Ibbotson Equity Risk Premium (1)	5.92 %	5.92 %
2.	Regression on Ibbotson Risk Premium Data	8.83 (2)	9.59 (3)
3.	Ibbotson Equity Risk Premium based on PRPM (4)	9.40	9.40
4.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (4)	5.03 (5)	5.67 (6)
5	Equity Risk Premium Based on <u>Value Line</u> S&P 500 Companies	10.77 (7)	11.41 (8)
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies	<u>12.17 (9)</u>	<u>12.81 (10)</u>
7.	Conclusion of Equity Risk Premium	8.69 %	9.13 %
8.	Adjusted Beta (11)	<u>0.92</u>	<u>0.92</u>
9.	Forecasted Equity Risk Premium	<u><u>7.99 %</u></u>	<u><u>8.40 %</u></u>

Notes:

- (1) From note 1 of page 9 of Attachment DWD-3.
- (2) From note 2 of page 9 of Attachment DWD-3.
- (3) From note 3 of page 9 of Attachment DWD-3.
- (4) From note 4 of page 9 of Attachment DWD-3.
- (5) From note 5 of page 9 of Attachment DWD-3.
- (6) From note 6 of page 9 of Attachment DWD-3.
- (7) From note 7 of page 9 of Attachment DWD-3.
- (8) From note 8 of page 9 of Attachment DWD-3.
- (9) From note 9 of page 9 of Attachment DWD-3.
- (10) From note 10 of page 9 of Attachment DWD-3.
- (11) Average of mean and median beta from page 6 of this Attachment.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, April 1, 2021 and December 1, 2020
Bloomberg Professional Services

Duke Energy Kentucky, Inc.
 Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Forty-Eight Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (4)
Apple Inc.	0.90	1.02	0.96	9.54 %	2.73 %	11.89 %	11.99 %	11.94 %
Abbott Labs.	0.95	0.86	0.90	9.54	2.73	11.32	11.56	11.44
Assurant Inc.	0.95	0.98	0.97	9.54	2.73	11.99	12.06	12.02
ANSYS, Inc.	0.85	0.97	0.91	9.54	2.73	11.41	11.63	11.52
Booz Allen Hamilton	0.90	0.90	0.90	9.54	2.73	11.32	11.56	11.44
Becton, Dickinson	0.80	0.59	0.69	9.54	2.73	9.31	10.05	9.68
Brown-Forman 'B'	0.85	0.98	0.92	9.54	2.73	11.51	11.70	11.60
Broadridge Fin'l	0.85	0.83	0.84	9.54	2.73	10.75	11.13	10.94
Brady Corp.	1.00	1.05	1.03	9.54	2.73	12.56	12.49	12.52
CACI Int'l	0.95	1.00	0.97	9.54	2.73	11.99	12.06	12.02
Casey's Gen'l Stores	0.85	0.91	0.88	9.54	2.73	11.13	11.41	11.27
Cadence Design Sys.	0.90	0.98	0.94	9.54	2.73	11.70	11.84	11.77
Cerner Corp.	0.90	0.89	0.89	9.54	2.73	11.22	11.48	11.35
CSW Industrials	0.85	1.03	0.94	9.54	2.73	11.70	11.84	11.77
Quest Diagnostics	0.85	0.96	0.91	9.54	2.73	11.41	11.63	11.52
Lauder (Estee)	0.95	1.01	0.98	9.54	2.73	12.08	12.13	12.10
Exponent, Inc.	0.90	0.94	0.92	9.54	2.73	11.51	11.70	11.60
Fastenal Co.	0.90	0.97	0.93	9.54	2.73	11.60	11.77	11.69
Gentex Corp.	0.95	1.07	1.01	9.54	2.73	12.37	12.34	12.36
Int'l Flavors & Frag	0.95	1.08	1.01	9.54	2.73	12.37	12.34	12.36
Ingredion Inc.	0.90	0.93	0.91	9.54	2.73	11.41	11.63	11.52
Iron Mountain	0.90	1.02	0.96	9.54	2.73	11.89	11.99	11.94
Hunt (J.B.)	0.95	0.92	0.94	9.54	2.73	11.70	11.84	11.77
J&J Snack Foods	0.90	0.77	0.84	9.54	2.73	10.75	11.13	10.94
Henry (Jack) & Assoc	0.85	0.89	0.87	9.54	2.73	11.03	11.34	11.19
ManTech Int'l 'A'	0.85	1.12	0.99	9.54	2.73	12.18	12.20	12.19
McCormick & Co.	0.85	0.69	0.77	9.54	2.73	10.08	10.63	10.35
Altria Group	0.90	0.89	0.89	9.54	2.73	11.22	11.48	11.35
MSA Safety	1.00	1.00	1.00	9.54	2.73	12.27	12.27	12.27
MSCI Inc.	0.95	0.93	0.94	9.54	2.73	11.70	11.84	11.77
Motorola Solutions	0.90	0.95	0.92	9.54	2.73	11.51	11.70	11.60
Vail Resorts	0.90	1.15	1.02	9.54	2.73	12.46	12.41	12.44
Maxim Integrated	0.95	1.00	0.97	9.54	2.73	11.99	12.06	12.02
Northrop Grumman	0.85	0.79	0.82	9.54	2.73	10.55	10.98	10.77

Old Dominion Freight	0.90	0.98	0.94	9.54	2.73	11.70	11.84	11.77
PerkinElmer Inc.	0.95	0.84	0.90	9.54	2.73	11.32	11.56	11.44
Philip Morris Int'l	0.95	0.92	0.94	9.54	2.73	11.70	11.84	11.77
Pool Corp.	0.90	0.94	0.92	9.54	2.73	11.51	11.70	11.60
Post Holdings	0.95	0.90	0.92	9.54	2.73	11.51	11.70	11.60
RLI Corp.	0.80	0.89	0.84	9.54	2.73	10.75	11.13	10.94
Rollins, Inc.	0.85	0.69	0.77	9.54	2.73	10.08	10.63	10.35
Selective Ins. Group	0.85	0.96	0.91	9.54	2.73	11.41	11.63	11.52
Sirius XM Holdings	1.00	1.10	1.05	9.54	2.73	12.75	12.63	12.69
Bio-Techne Corp.	0.80	0.92	0.86	9.54	2.73	10.94	11.27	11.10
Tetra Tech	0.90	1.05	0.98	9.54	2.73	12.08	12.13	12.10
Waters Corp.	0.95	0.85	0.90	9.54	2.73	11.32	11.56	11.44
West Pharmac. Svcs.	0.85	0.76	0.80	9.54	2.73	10.36	10.84	10.60
Western Union	0.80	1.05	<u>0.92</u>	9.54	2.73	<u>11.51</u>	<u>11.70</u>	<u>11.60</u>
		Mean	<u>0.92</u>			<u>11.47</u> %	<u>11.67</u> %	<u>11.57</u> %
		Median	<u>0.92</u>			<u>11.51</u> %	<u>11.70</u> %	<u>11.60</u> %
	Average of Mean and Median		<u>0.92</u>			<u>11.49</u> %	<u>11.69</u> %	<u>11.59</u> %

Using Current Interest Rates

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Forty-Eight Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (3)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (4)
Apple Inc.	0.90	1.02	0.96	9.98	2.07	11.65 %	11.75 %	11.70 %
Abbott Labs.	0.95	0.86	0.90	9.98	2.07	11.05	11.30	11.18
Assurant Inc.	0.95	0.98	0.97	9.98	2.07	11.75	11.83	11.79
ANSYS, Inc.	0.85	0.97	0.91	9.98	2.07	11.15	11.38	11.27
Booz Allen Hamilton	0.90	0.90	0.90	9.98	2.07	11.05	11.30	11.18
Becton, Dickinson	0.80	0.59	0.69	9.98	2.07	8.96	9.73	9.34
Brown-Forman 'B'	0.85	0.98	0.92	9.98	2.07	11.25	11.45	11.35
Broadridge Fin'l	0.85	0.83	0.84	9.98	2.07	10.45	10.85	10.65
Brady Corp.	1.00	1.05	1.03	9.98	2.07	12.35	12.28	12.31
CACI Int'l	0.95	1.00	0.97	9.98	2.07	11.75	11.83	11.79
Casey's Gen'l Stores	0.85	0.91	0.88	9.98	2.07	10.85	11.15	11.00
Cadence Design Sys.	0.90	0.98	0.94	9.98	2.07	11.45	11.60	11.53
Cerner Corp.	0.90	0.89	0.89	9.98	2.07	10.95	11.23	11.09
CSW Industrials	0.85	1.03	0.94	9.98	2.07	11.45	11.60	11.53
Quest Diagnostics	0.85	0.96	0.91	9.98	2.07	11.15	11.38	11.27
Lauder (Estee)	0.95	1.01	0.98	9.98	2.07	11.85	11.90	11.88
Exponent, Inc.	0.90	0.94	0.92	9.98	2.07	11.25	11.45	11.35
Fastenal Co.	0.90	0.97	0.93	9.98	2.07	11.35	11.53	11.44
Gentex Corp.	0.95	1.07	1.01	9.98	2.07	12.15	12.13	12.14
Int'l Flavors & Frag	0.95	1.08	1.01	9.98	2.07	12.15	12.13	12.14
Ingredion Inc.	0.90	0.93	0.91	9.98	2.07	11.15	11.38	11.27
Iron Mountain	0.90	1.02	0.96	9.98	2.07	11.65	11.75	11.70
Hunt (J.B.)	0.95	0.92	0.94	9.98	2.07	11.45	11.60	11.53
J&J Snack Foods	0.90	0.77	0.84	9.98	2.07	10.45	10.85	10.65
Henry (Jack) & Assoc	0.85	0.89	0.87	9.98	2.07	10.75	11.08	10.92
ManTech Int'l 'A'	0.85	1.12	0.99	9.98	2.07	11.95	11.98	11.96
McCormick & Co.	0.85	0.69	0.77	9.98	2.07	9.76	10.33	10.04
Altria Group	0.90	0.89	0.89	9.98	2.07	10.95	11.23	11.09
MSA Safety	1.00	1.00	1.00	9.98	2.07	12.05	12.05	12.05
MSCI Inc.	0.95	0.93	0.94	9.98	2.07	11.45	11.60	11.53
Motorola Solutions	0.90	0.95	0.92	9.98	2.07	11.25	11.45	11.35
Vail Resorts	0.90	1.15	1.02	9.98	2.07	12.25	12.20	12.23
Maxim Integrated	0.95	1.00	0.97	9.98	2.07	11.75	11.83	11.79
Northrop Grumman	0.85	0.79	0.82	9.98	2.07	10.26	10.70	10.48
Old Dominion Freight	0.90	0.98	0.94	9.98	2.07	11.45	11.60	11.53
PerkinElmer Inc.	0.95	0.84	0.90	9.98	2.07	11.05	11.30	11.18
Philip Morris Int'l	0.95	0.92	0.94	9.98	2.07	11.45	11.60	11.53
Pool Corp.	0.90	0.94	0.92	9.98	2.07	11.25	11.45	11.35

Post Holdings	0.95	0.90	0.92	9.98	2.07	11.25	11.45	11.35
RLI Corp.	0.80	0.89	0.84	9.98	2.07	10.45	10.85	10.65
Rollins, Inc.	0.85	0.69	0.77	9.98	2.07	9.76	10.33	10.04
Selective Ins. Group	0.85	0.96	0.91	9.98	2.07	11.15	11.38	11.27
Sirius XM Holdings	1.00	1.10	1.05	9.98	2.07	12.55	12.43	12.49
Bio-Techne Corp.	0.80	0.92	0.86	9.98	2.07	10.65	11.00	10.83
Tetra Tech	0.90	1.05	0.98	9.98	2.07	11.85	11.90	11.88
Waters Corp.	0.95	0.85	0.90	9.98	2.07	11.05	11.30	11.18
West Pharmac. Svcs.	0.85	0.76	0.80	9.98	2.07	10.06	10.55	10.31
Western Union	0.80	1.05	<u>0.92</u>	9.98	2.07	<u>11.25</u>	<u>11.45</u>	<u>11.35</u>
		Mean	<u>0.92</u>			<u>11.22</u> %	<u>11.43</u> %	<u>11.32</u> %
		Median	<u>0.92</u>			<u>11.25</u> %	<u>11.45</u> %	<u>11.35</u> %
		Average of Mean and Median	<u>0.92</u>			<u>11.24</u> %	<u>11.44</u> %	<u>11.34</u> %

Notes:

- (1) From note 1 of page 2 of Attachment DWD-4.
- (2) From note 2 of page 2 of Attachment DWD-4.
- (3) From note 3 of page 2 of Attachment DWD-4.
- (4) Average of CAPM and ECAPM cost rates.

Duke Energy Kentucky, Inc.
 Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		[1]		[2]	[3]	[4]
		Market Capitalization on September 30, 2020 (1) (millions)	(times larger)	Applicable Decile of the NYSE/AMEX/NASDAQ (2)	Applicable Size Premium (3)	Spread from Applicable Size Premium (4)
1.	<u>Duke Energy Kentucky, Inc.</u>	\$ 1,241.112		7	1.54%	
2.	<u>Proxy Group of Seven Natural Gas Distribution Companies</u>	\$ 4,574.713	3.7 x	4	0.75%	0.79%
			[A]	[B]	[C]	[D]
			Decile	Market Capitalization of Smallest Company (millions)	Market Capitalization of Largest Company (millions)	Size Premium (Return in Excess of CAPM)*
		Largest	1	\$ 29,025.803	\$ 1,966,078.882	-0.22%
			2	13,178.743	28,808.073	0.49%
			3	6,743.361	13,177.828	0.71%
			4	3,861.858	6,710.676	0.75%
			5	2,445.693	3,836.536	1.09%
			6	1,591.865	2,444.745	1.37%
			7	911.586	1,591.765	1.54%
			8	451.955	911.103	1.46%
			9	190.019	451.800	2.29%
		Smallest	10	2.194	189.831	5.01%

*From 2021 Duff & Phelps Cost of Capital Navigator

Notes:

- (1) From page 2 of this Attachment.
- (2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].
- (3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.
- (4) Line No. 1 Column [3] – Line No. 2 Column [3]. For example, the 0.79% in Column [4], Line No. 2 is derived as follows 0.79% = 1.54% - 0.75%.

Duke Energy Kentucky, Inc.
 Market Capitalization of Duke Energy Kentucky, Inc. and the
Proxy Group of Seven Natural Gas Distribution Companies

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2020 (millions)	[2] Book Value per Share at Fiscal Year End 2020 (1)	[3] Total Common Equity at Fiscal Year End 2020 (millions)	[4] Closing Stock Market Price on March 31, 2021	[5] Market-to- Book Ratio on March 31, 2021 (2)	[6] Market Capitalization on March 31, 2021 (3) (millions)
Duke Energy Kentucky, Inc.		NA	NA	718.236 (4)	NA		
Based upon Proxy Group of Seven Natural Gas Distribution Companies						172.8 (5)	\$ 1,241.112 (6)
Proxy Group of Seven Natural Gas Distribution Companies							
Atmos Energy Corporation	NYSE	\$ 125.882	\$ 53.949	\$ 6,791.203	\$ 98.850	183.2 %	\$ 12,443.483
New Jersey Resources Corporation	NYSE	95.949	19.226	1,844.692	39.870	207.4	3,825.494
Northwest Natural Holding Company	NYSE	30.589	29.054	888.733	53.950	185.7	1,650.277
ONE Gas, Inc.	NYSE	53.167	42.006	2,233.311	76.910	183.1	4,089.053
South Jersey Industries, Inc.	NYSE	100.592	16.571	1,666.876	22.580	136.3	2,271.366
Southwest Gas Holdings, Inc.	NYSE	57.193	46.771	2,674.953	68.710	146.9	3,929.726
Spire Inc.	NYSE	51.612	44.182	2,280.300	73.890	167.2	3,813.595
Average		\$ 73.569	\$ 35.966	\$ 2,625.724	\$ 62.109	172.8 %	\$ 4,574.713

NA= Not Available

- Notes: (1) Column 3 / Column 1.
 (2) Column 4 / Column 2.
 (3) Column 1 * Column 4.
 (4) Requested rate base multiplied by the requested common equity ratio.
 (5) The market-to-book ratio of Duke Energy Kentucky, Inc. on March 31, 2021 is assumed to be equal to the market-to-book ratio of Proxy Group of Seven Natural Gas Distribution Companies on March 31, 2021 as appropriate.
 (6) Column [3] multiplied by Column [5].

Source of Information: 2020 Annual Forms 10K
 yahoo.finance.com
 Bloomberg Professional

Duke Energy Kentucky, Inc.
Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

Equity Issuances since 2010

	[Column 1]	[Column 2]	[Column 3]	[Column 4]	[Column 5]	[Column 6]	[Column 7]	[Column 8]	[Column 9]	[Column 10]	
<u>Date of Offering</u>	<u>Transaction (1)</u>	<u>Shares Issued</u>	<u>Market Price per Share</u>	<u>Average Offering Price per Share</u>	<u>Market Pressure (2)</u>	<u>Total Offering Expense per Share</u>	<u>Net Proceeds per Share (3)</u>	<u>Gross Equity Issue before Costs (4)</u>	<u>Total Net Proceeds (5)</u>	<u>Total Flotation Costs (6)</u>	<u>Flotation Cost Percentage (7)</u>
11/18/19	Equity Offering	28,750,000	\$ 88.65	\$ 85.99	\$ 2.66	\$ 0.021	\$ 85.9694	\$ 2,548,687,500	\$ 2,471,620,500	\$ 77,067,000	3.02%
03/06/18	Equity Offering	21,275,000	\$ 75.86	\$ 74.07	\$ 1.79	\$ 0.021	\$ 74.0508	\$ 1,613,921,500	\$ 1,575,431,800	\$ 38,489,700	2.38%
03/01/16	Equity Offering	10,637,500	\$ 73.35	\$ 69.84	\$ 3.51	\$ 0.038	\$ 69.8024	\$ 780,260,625	\$ 742,523,000	\$ 37,737,625	4.84%
								<u>\$ 4,942,869,625</u>	<u>\$ 4,789,575,300</u>	<u>\$ 153,294,325</u>	<u>3.10%</u>

Flotation Cost Adjustment

	<u>Average Dividend Yield</u>	<u>Average Projected EPS Growth Rate</u>	<u>Adjusted Dividend Yield</u>	<u>Average DCF Cost Rate Unadjusted for Flotation (8)</u>	<u>DCF Cost Rate Adjusted for Flotation (9)</u>	<u>Flotation Cost Adjustment (10)</u>
Proxy Group of Seven Natural Gas Distribution Companies	3.74 %	5.94 %	3.85 %	9.79 %	9.91 %	0.12 %

See page 2 of this Attachment for notes.

Source of Information: Company SEC filings

Summary of Adjustment Clauses & Alternative Regulation/Incentive Plans

Company	Parent	State	Adjustment Clauses					Alternative Regulation / Incentive Plans	
			Gas Commodity	Decoupling (F/P) [1]	Capital Investment [2]	Energy Efficiency [3]	Other [4]	Formula-Based Rates	Earnings Sharing/PBR
Atmos Energy	ATO	Colorado	✓		✓	✓			
Atmos Energy	ATO	Kansas	✓	P	✓		✓		
Atmos Energy	ATO	Kentucky	✓	P	✓	✓			
Atmos Energy	ATO	Louisiana	✓	P	✓			✓	✓
Atmos Energy	ATO	Mississippi	✓	P	✓	✓	✓	✓	
Atmos Energy	ATO	Tennessee	✓	P	✓			✓	✓
Atmos Energy	ATO	Texas	✓	P	✓	✓	✓	✓	
Atmos Energy	ATO	Virginia	✓	P	✓				
New Jersey Natural Gas	NJR	New Jersey	✓	F	✓	✓	✓		
Northwest Natural Gas	NWN	Oregon	✓	P	✓	✓	✓		
Northwest Natural Gas	NWN	Washington	✓		✓	✓	✓		
Kansas Gas Service	OGS	Kansas	✓	P	✓		✓		
Oklahoma Natural Gas	OGS	Oklahoma	✓	P	✓	✓	✓	✓	✓
Texas Gas Service	OGS	Texas	✓	P	✓	✓	✓	✓	
Elizabethtown Gas	SJI	New Jersey	✓	P	✓	✓	✓		
South Jersey Gas	SJI	New Jersey	✓	F	✓	✓	✓		
Southwest Gas Corporation	SWX	Arizona	✓	F	✓	✓	✓		
Southwest Gas Corporation	SWX	California	✓	F	✓	✓	✓		
Southwest Gas Corporation	SWX	Nevada	✓	F	✓	✓	✓		
Alabama Gas Corporation	SR	Alabama	✓	P	✓		✓	✓	
Spire Gulf Inc. (Mobile Gas Corporation)	SR	Alabama	✓	P	✓		✓	✓	
Spire Missouri East	SR	Missouri	✓	P	✓		✓		
Spire Missouri West	SR	Missouri	✓	P	✓		✓		

Notes:

Note: A mechanism may cover one or more cost categories; therefore, designations may not indicate separate mechanisms for each category.

[1] Full or partial decoupling (such as Fixed Variable rate design, weather normalization clauses, and recovery of lost revenues as a result of Energy Efficiency programs). All full or partial decoupling mechanisms include weather normalization adjustments.

[2] Includes recovery of costs related to infrastructure replacement, system integrity/hardening, and other capital expenditures.

[3] Utility-sponsored conservation, energy efficiency, or other demand side management programs.

[4] Pension expenses, bad debt costs, storm costs, transmission/transportation costs, environmental, regulatory fee, government & franchise fees and taxes, economic development, and low income programs.

Sources: Operating company tariffs; Regulatory Research Associates, *Alternative Ratemaking Plans in the US*, April 16, 2020; Regulatory Research Associates, *Adjustment Clauses: A State-by-State Overview*, November 12, 2019; Edison Electric Institute, *Alternative Regulation for Emerging Utility Challenges: 2015 Update*, November 11, 2015.

Bond Index - Date	Mar-21	Feb-21	Jan-21
MOODUAA Index	3.27	2.93	2.73
MOODUA Index	3.44	3.09	2.91
MOODUBAA Index	3.72	3.37	3.18
MOODCAA Index	3.04	2.70	2.45
MOODCAA Index	3.17	2.83	2.61
MOODCA Index	3.37	3.03	2.84
MOODCBAA Index	3.74	3.42	3.24

Historical Risk Premium Data

Arithmetic Mean of Monthly Returns on Large Company Common Stocks (1928 - 2020)	11.94%
Arithmetic Mean of Moody's Aaa and Aa Corporate Bond Yields (1928 - 2020)	6.02%
Arithmetic Mean Holding Period Returns on the S&P Utility Index (1928 - 2020)	10.65%
Arithmetic Mean on Moody's A Rated Public Utility Bond Yields (1928 - 2020)	6.49%

Ticker	Company Name	EPS Growth Rates				Beta			Annual Div.	Value Line Beta Calculation				Bond Ratings	
		Zacks	Yahoo	Bloomberg	Value Line	Value Line	Bloomberg	Unadjusted		R Factor	Std. Error	Std. Dev Y	Std. Dev Beta	S&P	Moody's
ATO	Atmos Energy Corporation	7.30%	7.00%	7.10%	7.00%	0.80	0.91	0.66	2.50	0.5168	2.7453	3.2005	0.0685	A-	A1
NJR	New Jersey Resources Corporation	6.00%	6.00%	7.73%	1.50%	0.95	0.96	0.92	1.33	0.6069	3.0205	3.7932	0.0754	NR	A1
NWN	Northwest Natural Holding Company	NA	3.10%	5.00%	5.50%	0.80	0.83	0.69	1.92	0.4791	3.1454	3.5765	0.0785	A+	Baa1
OGS	ONE Gas, Inc.	5.00%	5.00%	5.67%	6.50%	0.80	0.99	0.67	2.32	0.5278	2.7077	3.1816	0.0676	BBB+	A3
SJI	South Jersey Industries, Inc.	4.40%	4.40%	2.68%	10.50%	1.05	0.97	1.00	1.21	0.5839	3.4767	4.2742	0.0868	BBB	A3
SWX	Southwest Gas Holdings, Inc.	5.00%	4.00%	5.00%	8.00%	0.95	1.07	0.88	2.38	0.5892	3.0244	3.7360	0.0755	A-	Baa1
SR	Spire Inc.	5.00%	5.70%	12.62%	9.00%	0.85	0.99	0.71	2.60	0.5339	2.8287	3.3389	0.0706	A-	A1/A2

S&P	Moody's			S&P	Moody's
BBB	NR	Elizabethtown Gas Company	SJI	9.00	NR
BBB	A3	South Jersey Gas Company	SJI	9.00	7.00
				<u>9.00</u>	<u>7.00</u>
A-	Baa1	Southwest Gas Corporation	SWX	<u>7.00</u>	<u>8.00</u>
A-	A2	Spire Alabama Inc.	SR	7.00	6.00
A-	A1	Spire Missouri Inc.	SR	7.00	5.00
				<u>7.00</u>	<u>5.50</u>

Tickers PX_LAST	ATO	NJR		NWN		OGS		SJI		SWX		SR			
		ATO US	Equity	NJR US	Equit	NWN US	Eq	OGS US	Equ	SJI US	Equit	SWX US	Eq	SR US	Equity
1	3/31/2021		98.85		39.87		53.95		76.91		22.58		68.71		73.89
2	3/30/2021		98.89		40.50		53.69		76.06		22.94		69.10		73.88
3	3/29/2021		98.85		40.66		53.88		76.27		22.67		69.33		73.62
4	3/26/2021		97.24		39.77		52.63		74.99		22.25		67.26		74.05
5	3/25/2021		97.08		40.12		52.70		75.22		22.58		68.51		72.99
6	3/24/2021		95.85		39.97		53.11		74.47		22.41		68.56		72.26
7	3/23/2021		94.18		39.38		51.23		73.31		22.56		67.22		71.60
8	3/22/2021		93.54		40.51		50.05		73.11		22.79		66.50		72.35
9	3/19/2021		94.09		41.61		52.96		74.74		22.57		67.80		73.74
10	3/18/2021		93.53		40.25		51.44		74.71		21.51		67.12		74.10
11	3/17/2021		92.43		39.48		50.57		74.77		22.50		66.07		73.48
12	3/16/2021		93.80		42.14		53.36		77.53		27.82		67.26		75.53
13	3/15/2021		93.19		42.42		54.15		77.03		28.64		66.27		74.64
14	3/12/2021		91.42		41.48		53.22		75.13		27.93		65.33		75.13
15	3/11/2021		89.88		40.69		52.12		73.75		27.46		65.51		72.87
16	3/10/2021		90.81		40.86		53.01		74.44		28.80		67.95		72.47
17	3/9/2021		89.34		40.24		52.25		73.39		28.05		68.69		71.97
18	3/8/2021		91.64		41.05		53.74		75.02		28.34		71.08		72.77
19	3/5/2021		91.71		40.22		51.71		73.60		26.68		69.28		70.92
20	3/4/2021		88.90		39.27		48.57		68.79		25.11		65.17		67.98
21	3/3/2021		88.45		39.65		47.47		68.77		26.23		63.73		67.28
22	3/2/2021		87.24		39.39		47.80		68.78		25.87		63.38		66.81
23	3/1/2021		85.75		40.29		48.25		69.55		25.61		63.64		66.97
24	2/26/2021		84.61		39.29		47.99		66.97		25.11		62.35		66.42
25	2/25/2021		88.23		39.48		48.79		69.01		25.51		64.11		67.94
26	2/24/2021		88.67		39.14		49.16		69.85		25.25		65.01		68.06
27	2/23/2021		89.63		39.31		49.06		70.01		25.37		65.86		68.69
28	2/22/2021		89.41		39.26		47.69		70.02		24.50		64.26		66.74
29	2/19/2021		93.56		39.60		48.88		74.06		24.26		64.80		67.67
30	2/18/2021		93.69		38.97		48.22		73.58		23.92		64.34		67.61
31	2/17/2021		92.43		38.87		47.82		72.97		23.94		63.66		66.47
32	2/16/2021		91.13		37.81		46.83		72.23		23.55		62.36		64.81
33	2/12/2021		91.05		36.62		46.32		72.69		23.66		61.83		63.97
34	2/11/2021		91.04		37.18		47.32		73.35		23.49		62.53		63.82
35	2/10/2021		91.85		37.38		46.67		73.73		23.48		61.73		63.22
36	2/9/2021		89.60		37.21		46.71		72.54		23.60		61.25		64.24
37	2/8/2021		89.08		36.30		45.79		72.55		22.76		61.39		64.75
38	2/5/2021		89.05		36.62		46.14		72.90		23.04		62.55		65.10
39	2/4/2021		88.78		36.05		45.09		72.41		22.76		61.91		64.02
40	2/3/2021		87.05		35.57		43.75		71.91		22.36		60.51		62.26
41	2/2/2021		88.66		35.94		44.38		73.46		22.64		60.62		62.97
42	2/1/2021		88.65		35.66		45.26		73.83		23.06		60.76		62.35
43	1/29/2021		89.00		35.01		46.71		73.13		23.10		59.96		61.19
44	1/28/2021		88.57		34.91		44.17		73.05		22.15		60.33		60.46
45	1/27/2021		90.83		35.46		46.50		74.60		23.08		60.42		60.89
46	1/26/2021		90.95		35.26		45.16		72.31		22.05		60.85		60.32
47	1/25/2021		90.44		35.80		44.40		72.48		22.66		60.56		61.59
48	1/22/2021		89.09		35.43		43.24		70.79		21.64		58.62		61.75
49	1/21/2021		89.45		34.96		42.92		70.62		21.10		57.55		61.09
50	1/20/2021		90.09		35.72		42.44		71.00		21.20		58.27		60.75
51	1/19/2021		90.08		36.52		43.49		71.35		21.96		58.89		61.16
52	1/15/2021		90.03		37.73		44.71		71.99		22.72		60.11		61.65
53	1/14/2021		87.64		37.74		44.40		71.46		22.52		59.89		61.21
54	1/13/2021		88.46		37.38		44.50		71.49		22.02		59.60		61.54
55	1/12/2021		87.62		36.84		43.64		71.56		21.95		59.79		61.01
56	1/11/2021		87.67		35.78		43.87		71.92		21.86		58.11		60.95
57	1/8/2021		89.26		35.44		43.93		72.61		21.61		58.51		62.13
58	1/7/2021		89.77		35.34		43.85		74.41		21.63		59.22		62.24
59	1/6/2021		93.71		35.63		45.27		77.49		22.06		60.96		63.74
60	1/5/2021		92.61		33.67		43.96		74.88		21.08		58.92		62.39

PX_LAST	ATO	NJR	NWN	OGS	SJI	SWX	SR
	ATO US Equity	NJR US Equity	NWN US Equity	OGS US Equity	SJI US Equity	SWX US Equity	SR US Equity
3/31/2021	98.85	39.87	53.95	76.91	22.58	68.71	73.89
3/30/2021	98.89	40.5	53.69	76.06	22.94	69.1	73.88
3/29/2021	98.85	40.66	53.88	76.27	22.67	69.33	73.62
3/26/2021	97.24	39.77	52.63	74.99	22.25	67.26	74.05
3/25/2021	97.08	40.12	52.7	75.22	22.58	68.51	72.99
3/24/2021	95.85	39.97	53.11	74.47	22.41	68.56	72.26
3/23/2021	94.18	39.38	51.23	73.31	22.56	67.22	71.6
3/22/2021	93.54	40.51	50.05	73.11	22.79	66.5	72.35
3/19/2021	94.09	41.61	52.96	74.74	22.57	67.8	73.74
3/18/2021	93.53	40.25	51.44	74.71	21.51	67.12	74.1
3/17/2021	92.43	39.48	50.57	74.77	22.5	66.07	73.48
3/16/2021	93.8	42.14	53.36	77.53	27.82	67.26	75.53
3/15/2021	93.19	42.42	54.15	77.03	28.64	66.27	74.64
3/12/2021	91.42	41.48	53.22	75.13	27.93	65.33	75.13
3/11/2021	89.88	40.69	52.12	73.75	27.46	65.51	72.87
3/10/2021	90.81	40.86	53.01	74.44	28.8	67.95	72.47
3/9/2021	89.34	40.24	52.25	73.39	28.05	68.69	71.97
3/8/2021	91.64	41.05	53.74	75.02	28.34	71.08	72.77
3/5/2021	91.71	40.22	51.71	73.6	26.68	69.28	70.92
3/4/2021	88.9	39.27	48.57	68.79	25.11	65.17	67.98
3/3/2021	88.45	39.65	47.47	68.77	26.23	63.73	67.28
3/2/2021	87.24	39.39	47.8	68.78	25.87	63.38	66.81
3/1/2021	85.75	40.29	48.25	69.55	25.61	63.64	66.97
2/26/2021	84.61	39.29	47.99	66.97	25.11	62.35	66.42
2/25/2021	88.23	39.48	48.79	69.01	25.51	64.11	67.94
2/24/2021	88.67	39.14	49.16	69.85	25.25	65.01	68.06
2/23/2021	89.63	39.31	49.06	70.01	25.37	65.86	68.69
2/22/2021	89.41	39.26	47.69	70.02	24.5	64.26	66.74
2/19/2021	93.56	39.6	48.88	74.06	24.26	64.8	67.67
2/18/2021	93.69	38.97	48.22	73.58	23.92	64.34	67.61
2/17/2021	92.43	38.87	47.82	72.97	23.94	63.66	66.47
2/16/2021	91.13	37.81	46.83	72.23	23.55	62.36	64.81
2/12/2021	91.05	36.62	46.32	72.69	23.66	61.83	63.97
2/11/2021	91.04	37.18	47.32	73.35	23.49	62.53	63.82
2/10/2021	91.85	37.38	46.67	73.73	23.48	61.73	63.22
2/9/2021	89.6	37.21	46.71	72.54	23.6	61.25	64.24
2/8/2021	89.08	36.3	45.79	72.55	22.76	61.39	64.75
2/5/2021	89.05	36.62	46.14	72.9	23.04	62.55	65.1
2/4/2021	88.78	36.05	45.09	72.41	22.76	61.91	64.02
2/3/2021	87.05	35.57	43.75	71.91	22.36	60.51	62.26
2/2/2021	88.66	35.94	44.38	73.46	22.64	60.62	62.97
2/1/2021	88.65	35.66	45.26	73.83	23.06	60.76	62.35
1/29/2021	89	35.01	46.71	73.13	23.1	59.96	61.19
1/28/2021	88.57	34.91	44.17	73.05	22.15	60.33	60.46
1/27/2021	90.83	35.46	46.5	74.6	23.08	60.42	60.89
1/26/2021	90.95	35.26	45.16	72.31	22.05	60.85	60.32
1/25/2021	90.44	35.8	44.4	72.48	22.66	60.56	61.59
1/22/2021	89.09	35.43	43.24	70.79	21.64	58.62	61.75
1/21/2021	89.45	34.96	42.92	70.62	21.1	57.55	61.09
1/20/2021	90.09	35.72	42.44	71	21.2	58.27	60.75
1/19/2021	90.08	36.52	43.49	71.35	21.96	58.89	61.16
1/15/2021	90.03	37.73	44.71	71.99	22.72	60.11	61.65
1/14/2021	87.64	37.74	44.4	71.46	22.52	59.89	61.21
1/13/2021	88.46	37.38	44.5	71.49	22.02	59.6	61.54
1/12/2021	87.62	36.84	43.64	71.56	21.95	59.79	61.01
1/11/2021	87.67	35.78	43.87	71.92	21.86	58.11	60.95
1/8/2021	89.26	35.44	43.93	72.61	21.61	58.51	62.13
1/7/2021	89.77	35.34	43.85	74.41	21.63	59.22	62.24
1/6/2021	93.71	35.63	45.27	77.49	22.06	60.96	63.74
1/5/2021	92.61	33.67	43.96	74.88	21.08	58.92	62.39
Average Price	90.97	38.18	48.01	72.93	23.71	63.43	66.81
Indicated Dividend	2.50	1.330	1.920	2.320	1.210	2.380	2.600
Indicated Dividend Yield	2.75%	3.48%	4.00%	3.18%	5.10%	3.75%	3.89%

Ticker	Company Name	EPS Growth Rates				Beta			Annual Div.	Bond Ratings		Value Line Beta Calculation			
		Zacks	Yahoo	Bloomberg	Value Line	Value Line	Bloomberg	Unadjusted		Moody's	S&P	R Factor	Std. Error	Std. Dev Y	Std. Dev Beta
AAPL	Apple Inc.	11.00%	14.69%	9.50%	14.50%	0.90	1.019	0.81	0.82	Aa1	AA+	0.5381	3.1746	3.7591	0.0792
ABT	Abbott Labs.	14.00%	15.58%	14.20%	12.00%	0.95	0.856	0.88	1.80	A3	A	0.6245	2.7401	3.5017	0.0684
AIZ	Assurant Inc.	NA	19.40%	NA	11.50%	0.90	0.980	0.84	2.64	Baa3	BBB	0.5804	2.9537	3.6200	0.0737
ANSS	ANSYS, Inc.	NA	8.00%	12.05%	10.00%	0.85	0.970	0.74	NA	NA	NA	0.5412	2.8841	3.4230	0.0720
BAH	Booz Allen Hamilton	10.60%	10.99%	NA	12.50%	0.90	0.904	0.82	1.48	NA	NA	0.5601	3.0468	3.6706	0.0760
BDX	Becton, Dickinson	9.00%	12.00%	9.54%	9.00%	0.80	0.587	0.66	3.32	Baa3	BBB	0.4945	2.8952	3.3246	0.0722
BFB	Brown-Forman 'B'	NA	7.53%	5.39%	12.00%	0.90	0.981	0.77	0.72	A1	A-	0.5759	2.7453	3.3514	0.0685
BR	Broadridge Fin'l	NA	10.00%	10.70%	10.50%	0.85	0.827	0.70	2.30	Baa1	BBB+	0.5412	2.7332	3.2440	0.0682
BRC	Brady Corp.	7.00%	7.00%	7.33%	8.00%	1.00	1.053	0.93	0.88	NA	NA	0.6126	3.0007	3.7889	0.0749
CACI	CACI Int'l	10.50%	12.91%	10.53%	14.00%	0.95	0.999	0.86	NA	NA	BB+	0.5607	3.1684	3.8191	0.0791
CASY	Casey's Gen'l Stores	NA	7.85%	15.81%	9.00%	0.90	0.907	0.78	1.36	NA	NA	0.5154	3.2522	3.7879	0.0812
CDNS	Cadence Design Sys.	11.10%	11.10%	11.90%	13.00%	0.90	0.984	0.79	NA	Baa2	BBB+	0.5468	3.0338	3.6165	0.0757
CERN	Cerner Corp.	12.30%	11.51%	8.61%	8.00%	0.90	0.887	0.84	0.88	NA	NA	0.6112	2.7309	3.4436	0.0681
CSWI	CSW Industrials	NA	12.00%	NA	8.50%	0.90	1.034	0.81	0.54	NA	NA	0.5740	2.8884	3.5204	0.0721
DGX	Quest Diagnostics	26.50%	9.22%	-6.93%	10.00%	0.85	0.963	0.75	2.48	Baa2	BBB+	0.5648	2.7411	3.3152	0.0684
EL	Lauder (Estee)	10.70%	21.10%	17.23%	11.00%	0.95	1.008	0.85	2.12	A1	A+	0.6021	2.8216	3.5271	0.0704
EXPO	Exponent, Inc.	NA	15.00%	13.30%	12.00%	0.90	0.939	0.79	0.80	NA	NA	0.5605	2.9131	3.5107	0.0727
FAST	Fastenal Co.	9.00%	8.04%	10.15%	8.00%	0.90	0.967	0.85	1.12	NA	NA	0.5488	3.2203	3.8448	0.0804
GNTX	Gentex Corp.	4.70%	15.80%	10.25%	10.50%	0.95	1.067	0.91	0.48	NA	NA	0.6371	2.7546	3.5670	0.0687
IFF	Int'l Flavors & Frag	10.00%	10.00%	21.05%	6.50%	0.95	1.076	0.87	3.08	Baa3	BBB	0.5586	3.2238	3.8790	0.0804
INGR	Ingredion Inc.	NA	1.90%	11.00%	6.00%	0.90	0.927	0.78	2.56	Baa1	BBB	0.5608	2.8793	3.4709	0.0718
IRM	Iron Mountain	1.70%	1.70%	4.00%	7.50%	0.90	1.022	0.82	2.47	Ba3	BB-	0.5515	3.0897	3.6966	0.0771
JBHT	Hunt (J.B.)	15.00%	20.73%	17.23%	6.50%	0.95	0.922	0.86	1.12	Baa1	BBB+	0.6034	2.8344	3.5476	0.0707
JJSF	J&J Snack Foods	NA	6.00%	NA	10.00%	0.90	0.773	0.84	2.30	NA	NA	0.5858	2.9208	3.5969	0.0729
JKHY	Henry (Jack) & Assoc	10.90%	10.02%	12.47%	10.50%	0.85	0.893	0.71	1.84	NA	NA	0.5383	2.7734	3.2844	0.0692
MANT	ManTech Int'l 'A'	5.10%	4.53%	5.06%	12.00%	0.85	1.121	0.77	1.52	WR	BB+	0.5306	3.0653	3.6094	0.0765
MKC	McCormick & Co.	6.60%	5.50%	5.82%	6.50%	0.80	0.694	0.66	1.36	Baa2	BBB	0.5089	2.7887	3.2332	0.0696
MO	Altria Group	4.00%	4.42%	2.70%	6.50%	0.90	0.888	0.83	3.44	A3	BBB	0.5787	2.9215	3.5754	0.0729
MSA	MSA Safety	NA	18.00%	9.00%	6.50%	1.00	1.004	0.94	1.72	NA	NA	0.6140	3.0076	3.8031	0.0750
MSCI	MSCI Inc.	NA	14.37%	12.20%	18.00%	0.95	0.926	0.87	3.12	Ba2	BB+	0.5913	2.9662	3.6709	0.0740
MSI	Motorola Solutions	9.00%	5.88%	11.30%	7.00%	0.90	0.950	0.80	2.84	Baa3	BBB-	0.5831	2.7926	3.4307	0.0697
MTN	Vail Resorts	NA	69.80%	86.86%	8.50%	0.95	1.145	0.88	NA	B2	BB	0.5651	3.1939	3.8638	0.0797
MXIM	Maxim Integrated	10.00%	18.44%	11.30%	8.00%	0.95	0.996	0.87	NA	Baa1	BBB+	0.5946	2.9404	3.6501	0.0734
NOC	Northrop Grumman	NA	5.44%	4.96%	7.00%	0.85	0.787	0.71	5.80	Baa2	BBB+	0.5202	2.9032	3.3928	0.0724
ODFL	Old Dominion Freight	15.30%	15.89%	16.18%	9.00%	0.90	0.982	0.83	0.80	NA	NA	0.5598	3.0708	3.6988	0.0766
PKI	PerkinElmer Inc.	19.50%	17.20%	-6.87%	17.50%	0.95	0.843	0.86	0.28	Baa3	BBB	0.5963	2.8896	3.5925	0.0721
PM	Philip Morris Int'l	8.30%	11.42%	10.39%	5.00%	0.95	0.925	0.88	4.80	A2	A	0.5628	3.2481	3.9220	0.0811
POOL	Pool Corp.	NA	17.00%	17.00%	17.50%	0.85	0.936	0.75	2.32	NA	NA	0.5034	3.2001	3.6964	0.0799
POST	Post Holdings	NA	31.20%	20.30%	11.50%	0.95	0.898	0.86	NA	B2	B+	0.5813	3.0105	3.6926	0.0751
RLI	RLI Corp.	NA	9.80%	NA	12.50%	0.80	0.886	0.64	0.96	Baa2	BBB+	0.4717	2.9883	3.3825	0.0746
ROL	Rollins, Inc.	NA	8.20%	NA	11.50%	0.85	0.687	0.73	0.32	NA	NA	0.5258	2.9697	3.4845	0.0741
SIGI	Selective Ins. Group	NA	5.10%	NA	8.50%	0.85	0.961	0.77	1.00	Baa2	BBB	0.5397	3.0004	3.5572	0.0749
SIRI	Sirius XM Holdings	14.80%	12.93%	26.96%	24.50%	0.95	1.101	0.91	0.06	NA	BB	0.6316	2.7995	3.6039	0.0699
TECH	Bio-Techne Corp.	15.00%	15.00%	19.03%	12.50%	0.80	0.924	0.67	1.28	NA	NA	0.4592	3.2475	3.6485	0.0810
TTEK	Tetra Tech	15.00%	15.00%	13.85%	13.50%	0.90	1.050	0.84	0.68	NA	NA	0.5717	3.0245	3.6791	0.0755
WAT	Waters Corp.	8.80%	7.17%	9.03%	6.00%	0.95	0.853	0.86	NA	NA	NA	0.6150	2.7531	3.4846	0.0687
WST	West Pharmac. Svcs.	22.60%	22.60%	17.21%	17.00%	0.85	0.758	0.70	0.68	NA	NA	0.4811	3.1887	3.6301	0.0796
WU	Western Union	NA	9.25%	4.57%	6.00%	0.80	1.047	0.67	0.94	Baa2	BBB	0.5229	2.7346	3.2018	0.0682

WST	WU
WST US Equity	WU US Equity
281.78	24.66
278.34	24.84
280.51	24.79
280.31	25.37
275.45	24.7
278.08	24.24
283.25	24.62
282.49	24.77
277.15	24.45
268.95	25
274.59	24.87
274.17	24.8
276.02	25.17
274.12	24.7
272.89	24.41
267.73	24.6
267.42	24.98
261.35	25.11
262.40	24.09
257.29	23.47
267.62	23.88
278.10	23.68
282.99	23.68
280.65	23.22
277.68	23.52
278.92	23.79
274.29	23.33
272.65	23.9
281.55	23.91
296.74	23.5
293.99	23.87
295.61	23.9
294.01	23.99
291.09	23.56
292.29	23.47
289.89	23.37
294.46	23.25
291.35	22.97
290.25	22.99
292.08	22.73
294.60	22.86
297.02	22.61
299.49	22.27
298.92	22.93
293.23	23.15
299.68	22.83
300.26	22.71
300.09	22.06
299.68	22.03
305.05	21.96
300.12	22.37
299.41	21.93
298.72	21.66
298.00	22.39
298.49	22.41
302.41	22.58
307.53	23.27
304.06	22.86
294.14	23.12
291.02	22.1

Date of Value Line Summary & Index	Est. Median Appreciation Potential 3 - 5 Yrs. Hence	Est. Median Annual Appreciation Potential	Est. Median Dividend Yield	Est. Median Annual Total Return
2-Apr-2021	30%	6.78%	1.80%	8.58%
26-Mar-2021	25%	5.74%	1.80%	7.54%
19-Mar-2021	30%	6.78%	1.80%	8.58%
12-Mar-2021	30%	6.78%	1.90%	8.68%
5-Mar-2021	30%	6.78%	1.90%	8.68%
26-Feb-2021	30%	6.78%	1.90%	8.68%
19-Feb-2021	30%	6.78%	1.90%	8.68%
12-Feb-2021	35%	7.79%	2.00%	9.79%
5-Feb-2021	25%	5.74%	1.90%	7.64%
29-Jan-2021	25%	5.74%	1.90%	7.64%
22-Jan-2021	25%	5.74%	1.90%	7.64%
15-Jan-2021	30%	6.78%	2.00%	8.78%
8-Jan-2021	30%	6.78%	2.00%	8.78%
Average	29%	6.57%	1.90%	8.47%

Blue Chip Financial Forecasts
 Consensus Forecast Yield for 30-year Treasury Bonds

		Projected Market Risk Premium		Aaa Bonds	Baa Bonds
Second Quarter 2021	2.40 %		Second Quarter 2021	3.00	3.90
Third Quarter 2021	2.50		Third Quarter 2021	3.10	4.00
Fourth Quarter 2021	2.50		Fourth Quarter 2021	3.20	4.10
First Quarter 2022	2.60		First Quarter 2022	3.30	4.20
Second Quarter 2022	2.70		Second Quarter 2022	3.40	4.30
Third Quarter 2022	2.70		Third Quarter 2022	3.40	4.40
2022-2026	2.80		2022-2026	3.60	4.60
2027-2031	3.60		2027-2031	4.50	5.40
Average	2.73 %	5.74 %		3.44	4.36

Actual Interest Rates - 3 months Ended March 2021

		Current Market Risk Premium		Aaa Bonds	Aa Bonds	Baa Bonds
Jan-21	1.82		Jan-21	2.45	2.61	3.24
Feb-21	2.04		Feb-21	2.70	2.83	3.42
Mar-21	2.34		Mar-21	3.04	3.17	3.74
Average	2.07	6.40 %		2.73	2.87	3.47

Total Projected Return on S&P 500 Based on Value Line	11.48	(using current rates)	12.14
Average of Value Line MRPs:	8.61		9.27
Ibbotson-Based MRPs:			
PRPM Results	10.46		10.46
SBBI Common Stocks Total Return - 1926 - 2020	12.20 %		12.20 %

SBBI Long-Term Gov't Bonds Income Return 1926 - 2020	<u>5.05</u>	<u>5.05</u>
Historical Market Risk Premium	<u>7.15 %</u>	<u>7.15 %</u>
Regression analysis on SBBI data 1926-2020	9.54	10.20
Average of Ibbotson-Based MRPs:	<u>9.05</u>	<u>9.27</u>
Total Projected Return on S&P 500 Based on Bloomberg	<u>12.88</u>	<u>13.54</u>
Average of Hist'l & Proj'd Market Risk Premium	<u>9.54 %</u>	<u>9.98 %</u>

Source of Information: Value Line Investment Survey
 Blue Chip Financial Forecasts April 1, 2021 and December 1, 2020
 Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, Appendix A Tables, John Wiley & Sons, Inc.
 Value Line Summary and Index

Proxy Group	VL Beta	CEM Group	VL Beta
ATO	0.80	AAPL	0.90
NJR	0.95	ABT	0.95
NWN	0.80	AIZ	0.95
OGS	0.80	ANSS	0.85
SJI	1.05	BAH	0.90
SWX	0.95	BDX	0.80
SR	0.85	BFB	0.85
		BR	0.85
		BRC	1.00
		CACI	0.95
		CASY	0.85
		CDNS	0.90
		CERN	0.90
		CSWI	0.85
		DGX	0.85
		EL	0.95
		EXPO	0.90
		FAST	0.90
		GNTX	0.95
		IFF	0.95
		INGR	0.90
		IRM	0.90
		JBHT	0.95
		JJSF	0.90
		JKHY	0.85
		MANT	0.85
		MKC	0.85
		MO	0.90
		MSA	1.00
		MSCI	0.95
		MSI	0.90
		MTN	0.90
		MXIM	0.95
		NOC	0.85
		ODFL	0.90
		PKI	0.95
		PM	0.95
		POOL	0.90
		POST	0.95

RLI	0.80
ROL	0.85
SIGI	0.85
SIRI	1.00
TECH	0.80
TTEK	0.90
WAT	0.95
WST	0.85
WU	0.80

S&P 500

3/31/2021

Company Name	Ticker	Market Capitalization	Dividend Yield	Projected EPS Growth	DCF Result	Weight in Index	Weighted DCF
Agilent Technologies Inc	A	\$ 36,856.20	0.65%	10.50%	11.18%	0.12%	0.0131%
American Airlines Group Inc	AAL	\$ 13,554.48	0.00%	-3.50%	-3.50%	0.04%	-0.0015%
Advance Auto Parts Inc	AAP	\$ 12,438.51	0.55%	11.00%	11.58%	0.04%	0.0046%
Apple Inc	AAPL	\$ 2,020,306.00	0.73%	14.50%	15.28%	6.44%	0.9835%
AbbVie Inc	ABBV	\$ 181,914.60	5.05%	6.50%	11.71%	0.58%	0.0679%
AmerisourceBergen Corp	ABC	\$ 23,561.55	1.53%	7.00%	8.58%	0.08%	0.0064%
ABIOMED Inc	ABMD	\$ 13,305.65	0.00%	10.00%	10.00%	0.04%	0.0042%
Abbott Laboratories	ABT	\$ 209,174.20	1.53%	12.00%	13.62%	0.67%	0.0908%
Accenture PLC	ACN	\$ 170,206.70	1.38%	8.00%	9.44%	0.54%	0.0512%
Adobe Inc	ADBE	\$ 216,273.30	0.00%	14.00%	14.00%	0.69%	0.0964%
Analog Devices Inc	ADI	\$ 55,496.41	1.84%	8.50%	10.42%	0.18%	0.0184%
Archer-Daniels-Midland Co	ADM	\$ 31,091.52	2.72%	9.00%	11.84%	0.10%	0.0117%
Automatic Data Processing Inc	ADP	\$ 79,314.08	2.08%	9.00%	11.17%	0.25%	0.0282%
Autodesk Inc	ADSK	\$ 57,820.64	0.00%	N/A	N/A	N/A	N/A
Ameren Corp	AEE	\$ 20,514.77	2.77%	6.00%	8.85%	0.07%	0.0058%
American Electric Power Co Inc	AEP	\$ 42,206.38	3.58%	6.50%	10.20%	0.13%	0.0137%
AES Corp/The	AES	\$ 17,060.61	2.34%	21.50%	24.09%	0.05%	0.0131%
Aflac Inc	AFL	\$ 34,553.46	2.73%	7.00%	9.83%	0.11%	0.0108%
American International Group Inc	AIG	\$ 38,761.49	2.85%	28.50%	31.76%	0.12%	0.0392%
Assurant Inc	AIZ	\$ 8,231.46	1.86%	11.50%	13.47%	0.03%	0.0035%
Arthur J Gallagher & Co	AJG	\$ 24,061.41	1.55%	13.00%	14.65%	0.08%	0.0112%
Akamai Technologies Inc	AKAM	\$ 16,009.04	0.00%	15.00%	15.00%	0.05%	0.0076%
Albemarle Corp	ALB	\$ 15,666.24	1.06%	6.50%	7.59%	0.05%	0.0038%
Align Technology Inc	ALGN	\$ 39,911.00	0.00%	19.00%	19.00%	0.13%	0.0242%
Alaska Air Group Inc	ALK	\$ 8,126.34	0.00%	1.50%	1.50%	0.03%	0.0004%
Allstate Corp/The	ALL	\$ 34,306.40	2.87%	8.50%	11.49%	0.11%	0.0126%
Allegion plc	ALLE	\$ 11,096.06	1.18%	8.50%	9.73%	0.04%	0.0034%
Alexion Pharmaceuticals Inc	ALXN	\$ 33,263.03	0.00%	19.50%	19.50%	0.11%	0.0207%
Applied Materials Inc	AMAT	\$ 111,128.80	0.79%	11.50%	12.34%	0.35%	0.0437%
Amcor PLC	AMCR	\$ 18,310.89	4.16%	N/A	N/A	N/A	N/A
Advanced Micro Devices Inc	AMD	\$ 92,617.27	0.00%	24.00%	24.00%	0.30%	0.0708%

AMETEK Inc	AME	\$	28,310.04	0.65%	12.50%	13.19%	0.09%	0.0119%
Amgen Inc	AMGN	\$	141,955.30	2.95%	5.50%	8.53%	0.45%	0.0386%
Ameriprise Financial Inc	AMP	\$	25,973.82	1.87%	12.00%	13.98%	0.08%	0.0116%
American Tower Corp	AMT	\$	100,831.10	2.38%	10.00%	12.50%	0.32%	0.0401%
Amazon.com Inc	AMZN	\$	1,552,796.00	0.00%	35.50%	35.50%	4.95%	1.7559%
Arista Networks Inc	ANET	\$	21,668.46	0.00%	5.50%	5.50%	0.07%	0.0038%
ANSYS Inc	ANSS	\$	28,363.59	0.00%	10.00%	10.00%	0.09%	0.0090%
Anthem Inc	ANTM	\$	88,557.86	1.25%	10.00%	11.31%	0.28%	0.0319%
Aon PLC	AON	\$	51,618.13	0.82%	7.50%	8.35%	0.16%	0.0137%
A O Smith Corp	AOS	\$	10,557.11	1.59%	5.00%	6.63%	0.03%	0.0022%
APA Corp	APA	\$	7,013.21	0.54%	8.50%	9.06%	0.02%	0.0020%
Air Products and Chemicals Inc	APD	\$	61,517.22	2.16%	12.50%	14.80%	0.20%	0.0290%
Amphenol Corp	APH	\$	38,100.89	0.91%	9.00%	9.95%	0.12%	0.0121%
Aptiv PLC	APTIV	\$	37,763.00	0.00%	15.50%	15.50%	0.12%	0.0186%
Alexandria Real Estate Equities Inc	ARE	\$	18,483.50	2.62%	13.00%	15.79%	0.06%	0.0093%
Atmos Energy Corp	ATO	\$	12,283.47	2.71%	7.00%	9.80%	0.04%	0.0038%
Activision Blizzard Inc	ATVI	\$	70,075.46	0.52%	14.50%	15.06%	0.22%	0.0336%
AvalonBay Communities Inc	AVB	\$	25,791.57	3.50%	1.00%	4.52%	0.08%	0.0037%
Broadcom Inc	AVGO	\$	186,566.20	3.15%	27.00%	30.58%	0.59%	0.1817%
Avery Dennison Corp	AVY	\$	14,779.17	1.40%	9.50%	10.97%	0.05%	0.0052%
American Water Works Co Inc	AWK	\$	26,271.89	1.62%	8.50%	10.19%	0.08%	0.0085%
American Express Co	AXP	\$	111,428.10	1.30%	6.00%	7.34%	0.35%	0.0260%
AutoZone Inc	AZO	\$	30,024.47	0.00%	12.00%	12.00%	0.10%	0.0115%
Boeing Co/The	BA	\$	139,314.20	0.00%	N/A	N/A	N/A	N/A
Bank of America Corp	BAC	\$	319,215.00	1.95%	4.00%	5.99%	1.02%	0.0609%
Baxter International Inc	BAX	\$	41,925.56	1.19%	8.50%	9.74%	0.13%	0.0130%
Best Buy Co Inc	BBY	\$	29,494.56	2.45%	9.00%	11.56%	0.09%	0.0109%
Becton Dickinson and Co	BDX	\$	70,248.69	1.39%	9.00%	10.45%	0.22%	0.0234%
Franklin Resources Inc	BEN	\$	14,451.47	3.92%	18.00%	22.27%	0.05%	0.0103%
Brown-Forman Corp	BF/B	\$	33,060.50	1.04%	12.00%	13.10%	0.11%	0.0138%
Biogen Inc	BIIB	\$	40,889.69	0.00%	1.00%	1.00%	0.13%	0.0013%
Bio-Rad Laboratories Inc	BIO	\$	16,694.14	0.00%	14.50%	14.50%	0.05%	0.0077%
Bank of New York Mellon Corp/The	BK	\$	40,126.07	2.74%	3.00%	5.78%	0.13%	0.0074%
Booking Holdings Inc	BKNG	\$	90,210.60	0.00%	7.00%	7.00%	0.29%	0.0201%
Baker Hughes Co	BKR	\$	15,117.95	3.26%	34.50%	38.32%	0.05%	0.0185%

BlackRock Inc	BLK	\$	110,216.50	2.29%	9.50%	11.90%	0.35%	0.0418%
Ball Corp	BLL	\$	27,959.47	0.70%	20.00%	20.77%	0.09%	0.0185%
Bristol-Myers Squibb Co	BMY	\$	139,801.20	3.15%	56.50%	60.54%	0.45%	0.2696%
Broadridge Financial Solutions Inc	BR	\$	17,239.14	1.55%	8.50%	10.12%	0.05%	0.0056%
Berkshire Hathaway Inc	BRK/B		-	0.00%	N/A	N/A	N/A	N/A
Boston Scientific Corp	BSX	\$	53,809.38	0.00%	12.00%	12.00%	0.17%	0.0206%
BorgWarner Inc	BWA	\$	10,636.58	1.56%	5.50%	7.10%	0.03%	0.0024%
Boston Properties Inc	BXP	\$	15,904.67	3.88%	1.50%	5.41%	0.05%	0.0027%
Citigroup Inc	C	\$	145,903.80	2.91%	3.50%	6.46%	0.46%	0.0300%
Conagra Brands Inc	CAG	\$	18,028.57	3.06%	5.50%	8.64%	0.06%	0.0050%
Cardinal Health Inc	CAH	\$	17,378.34	3.32%	11.50%	15.01%	0.06%	0.0083%
Carrier Global Corp	CARR	\$	34,834.66	1.20%	N/A	N/A	N/A	N/A
Caterpillar Inc	CAT	\$	120,185.00	1.86%	7.00%	8.93%	0.38%	0.0342%
Chubb Ltd	CB	\$	70,694.51	1.99%	10.00%	12.09%	0.23%	0.0272%
Cboe Global Markets Inc	CBOE	\$	11,058.24	1.63%	12.50%	14.23%	0.04%	0.0050%
CBRE Group Inc	CBRE	\$	24,885.21	0.00%	6.50%	6.50%	0.08%	0.0052%
Crown Castle International Corp	CCI	\$	72,270.08	3.33%	11.50%	15.02%	0.23%	0.0346%
Carnival Corp	CCL	\$	20,625.50	0.00%	-10.00%	-10.00%	0.07%	-0.0066%
Cadence Design Systems Inc	CDNS	\$	35,415.87	0.00%	13.00%	13.00%	0.11%	0.0147%
CDW Corp/DE	CDW	\$	22,194.58	1.02%	11.00%	12.08%	0.07%	0.0085%
Celanese Corp	CE	\$	16,754.51	1.90%	5.50%	7.45%	0.05%	0.0040%
Cerner Corp	CERN	\$	22,005.41	1.23%	8.00%	9.28%	0.07%	0.0065%
CF Industries Holdings Inc	CF	\$	9,579.05	2.73%	14.50%	17.43%	0.03%	0.0053%
Citizens Financial Group Inc	CFG	\$	18,039.56	3.69%	1.50%	5.22%	0.06%	0.0030%
Church & Dwight Co Inc	CHD	\$	20,750.10	1.19%	8.00%	9.24%	0.07%	0.0061%
CH Robinson Worldwide Inc	CHRW	\$	12,920.01	2.19%	7.00%	9.27%	0.04%	0.0038%
Charter Communications Inc	CHTR	\$	126,226.70	0.00%	26.50%	26.50%	0.40%	0.1065%
Cigna Corp	CI	\$	88,323.88	1.66%	11.00%	12.75%	0.28%	0.0359%
Cincinnati Financial Corp	CINF	\$	16,822.89	2.41%	10.50%	13.04%	0.05%	0.0070%
Colgate-Palmolive Co	CL	\$	66,096.18	2.32%	4.50%	6.87%	0.21%	0.0145%
Clorox Co/The	CLX	\$	23,789.49	2.35%	6.50%	8.93%	0.08%	0.0068%
Comerica Inc	CMA	\$	9,281.47	4.08%	1.00%	5.10%	0.03%	0.0015%
Comcast Corp	CMCSA	\$	256,150.30	1.79%	11.50%	13.39%	0.82%	0.1093%
CME Group Inc	CME	\$	73,334.38	1.76%	2.50%	4.28%	0.23%	0.0100%
Chipotle Mexican Grill Inc	CMG	\$	39,813.00	0.00%	18.00%	18.00%	0.13%	0.0228%

Cummins Inc	CMI	\$	38,165.37	2.10%	5.50%	7.66%	0.12%	0.0093%
CMS Energy Corp	CMS	\$	17,590.67	2.91%	7.50%	10.52%	0.06%	0.0059%
Centene Corp	CNC	\$	37,761.25	0.00%	9.50%	9.50%	0.12%	0.0114%
CenterPoint Energy Inc	CNP	\$	11,991.97	2.99%	8.00%	11.11%	0.04%	0.0042%
Capital One Financial Corp	COF	\$	56,676.06	1.29%	2.00%	3.30%	0.18%	0.0060%
Cabot Oil & Gas Corp	COG	\$	7,271.42	2.63%	13.50%	16.31%	0.02%	0.0038%
Cooper Cos Inc/The	COO	\$	18,673.22	0.02%	13.50%	13.52%	0.06%	0.0080%
ConocoPhillips	COP	\$	57,080.60	3.23%	3.50%	6.79%	0.18%	0.0123%
Costco Wholesale Corp	COST	\$	149,634.80	0.87%	11.00%	11.92%	0.48%	0.0568%
Campbell Soup Co	CPB	\$	14,777.75	3.04%	4.00%	7.10%	0.05%	0.0033%
Copart Inc	CPRT	\$	25,024.91	0.00%	12.00%	12.00%	0.08%	0.0096%
salesforce.com Inc	CRM	\$	191,510.40	0.00%	46.50%	46.50%	0.61%	0.2837%
Cisco Systems Inc/Delaware	CSCO	\$	209,572.70	2.98%	6.00%	9.07%	0.67%	0.0605%
CSX Corp	CSX	\$	71,807.35	1.19%	8.50%	9.74%	0.23%	0.0223%
Cintas Corp	CTAS	\$	35,270.05	0.89%	13.00%	13.95%	0.11%	0.0157%
Catalent Inc	CTLT	\$	17,520.30	0.00%	29.50%	29.50%	0.06%	0.0165%
Cognizant Technology Solutions Corp	CTSH	\$	41,470.66	1.25%	5.00%	6.28%	0.13%	0.0083%
Corteva Inc	CTVA	\$	34,340.33	1.23%	N/A	N/A	N/A	N/A
Citrix Systems Inc	CTXS	\$	16,607.21	1.10%	9.00%	10.15%	0.05%	0.0054%
CVS Health Corp	CVS	\$	95,831.90	2.73%	6.00%	8.81%	0.31%	0.0269%
Chevron Corp	CVX	\$	201,567.00	4.93%	8.00%	13.13%	0.64%	0.0843%
Caesars Entertainment Inc	CZR		N/A	0.00%	N/A	N/A	N/A	N/A
Dominion Energy Inc	D	\$	59,772.96	3.40%	7.00%	10.52%	0.19%	0.0200%
Delta Air Lines Inc	DAL	\$	29,107.48	0.00%	4.50%	4.50%	0.09%	0.0042%
DuPont de Nemours Inc	DD	\$	56,298.76	1.59%	N/A	N/A	N/A	N/A
Deere & Co	DE	\$	113,123.30	1.00%	13.50%	14.57%	0.36%	0.0525%
Discover Financial Services	DFS	\$	28,492.06	1.89%	5.50%	7.44%	0.09%	0.0068%
Dollar General Corp	DG	\$	48,284.60	0.85%	13.00%	13.91%	0.15%	0.0214%
Quest Diagnostics Inc	DGX	\$	16,876.37	1.95%	7.00%	9.02%	0.05%	0.0048%
DR Horton Inc	DHI	\$	30,386.43	0.97%	10.50%	11.52%	0.10%	0.0112%
Danaher Corp	DHR	\$	156,043.20	0.38%	16.50%	16.91%	0.50%	0.0841%
Walt Disney Co/The	DIS	\$	328,986.30	0.00%	17.00%	17.00%	1.05%	0.1781%
Discovery Inc	DISCA	\$	30,722.24	0.00%	15.50%	15.50%	0.10%	0.0152%
DISH Network Corp	DISH	\$	18,689.06	0.00%	N/A	N/A	N/A	N/A
Digital Realty Trust Inc	DLR	\$	39,265.82	3.36%	7.00%	10.48%	0.13%	0.0131%

Dollar Tree Inc	DLTR	\$	25,989.60	0.00%	8.50%	8.50%	0.08%	0.0070%
Dover Corp	DOV	\$	19,550.46	1.46%	6.50%	8.01%	0.06%	0.0050%
Dow Inc	DOW	\$	46,107.45	4.59%	N/A	N/A	N/A	N/A
Domino's Pizza Inc	DPZ	\$	14,234.24	1.03%	15.00%	16.11%	0.05%	0.0073%
Duke Realty Corp	DRE	\$	15,450.22	2.52%	-2.50%	-0.01%	0.05%	0.0000%
Darden Restaurants Inc	DRI	\$	17,454.83	1.11%	9.50%	10.66%	0.06%	0.0059%
DTE Energy Co	DTE	\$	25,292.80	3.43%	6.00%	9.53%	0.08%	0.0077%
Duke Energy Corp	DUK	\$	72,585.91	4.13%	5.00%	9.23%	0.23%	0.0213%
DaVita Inc	DVA	\$	11,986.00	0.00%	14.50%	14.50%	0.04%	0.0055%
Devon Energy Corp	DVN	\$	8,556.22	1.97%	5.50%	7.52%	0.03%	0.0021%
DXC Technology Co	DXC	\$	6,703.18	0.00%	2.50%	2.50%	0.02%	0.0005%
Dexcom Inc	DXCM	\$	34,150.08	0.00%	52.50%	52.50%	0.11%	0.0571%
Electronic Arts Inc	EA	\$	37,439.90	0.52%	9.50%	10.04%	0.12%	0.0120%
eBay Inc	EBAY	\$	39,425.76	1.25%	18.50%	19.87%	0.13%	0.0249%
Ecolab Inc	ECL	\$	59,557.02	0.92%	6.00%	6.95%	0.19%	0.0132%
Consolidated Edison Inc	ED	\$	25,134.87	4.22%	2.50%	6.77%	0.08%	0.0054%
Equifax Inc	EFX	\$	21,208.26	0.89%	5.50%	6.41%	0.07%	0.0043%
Edison International	EIX	\$	22,707.90	4.47%	12.00%	16.74%	0.07%	0.0121%
Estee Lauder Cos Inc/The	EL	\$	103,343.10	0.78%	11.00%	11.82%	0.33%	0.0389%
Eastman Chemical Co	EMN	\$	14,727.95	2.54%	5.00%	7.60%	0.05%	0.0036%
Emerson Electric Co	EMR	\$	52,818.39	2.31%	9.00%	11.41%	0.17%	0.0192%
Enphase Energy Inc	ENPH	\$	18,685.44	0.00%	48.50%	48.50%	0.06%	0.0289%
EOG Resources Inc	EOG	\$	42,332.16	2.28%	7.00%	9.36%	0.13%	0.0126%
Equinix Inc	EQIX	\$	59,037.01	1.77%	17.00%	18.92%	0.19%	0.0356%
Equity Residential	EQR	\$	26,585.63	3.37%	2.00%	5.40%	0.08%	0.0046%
Eversource Energy	ES	\$	29,367.15	2.81%	6.50%	9.40%	0.09%	0.0088%
Essex Property Trust Inc	ESS	\$	18,260.56	3.03%	1.00%	4.05%	0.06%	0.0024%
Eaton Corp PLC	ETN	\$	53,591.77	2.26%	5.50%	7.82%	0.17%	0.0134%
Entergy Corp	ETR	\$	19,509.77	4.02%	3.00%	7.08%	0.06%	0.0044%
Etsy Inc	ETSY	\$	25,063.81	0.00%	32.00%	32.00%	0.08%	0.0255%
Evergy Inc	EVRG	\$	13,392.40	3.73%	8.00%	11.88%	0.04%	0.0051%
Edwards Lifesciences Corp	EW	\$	50,075.11	0.00%	13.00%	13.00%	0.16%	0.0207%
Exelon Corp	EXC	\$	41,899.68	3.56%	4.00%	7.63%	0.13%	0.0102%
Expeditors International of Washington I	EXPD	\$	17,300.48	1.02%	5.50%	6.55%	0.06%	0.0036%
Expedia Group Inc	EXPE	\$	23,497.02	0.00%	12.00%	12.00%	0.07%	0.0090%

Extra Space Storage Inc	EXR	\$	16,965.07	3.05%	3.50%	6.60%	0.05%	0.0036%
Ford Motor Co	F	\$	47,437.97	0.00%	9.50%	9.50%	0.15%	0.0144%
Diamondback Energy Inc	FANG	\$	11,742.46	2.15%	-3.00%	-0.88%	0.04%	-0.0003%
Fastenal Co	FAST	\$	27,691.74	2.32%	9.50%	11.93%	0.09%	0.0105%
Facebook Inc	FB	\$	803,816.90	0.00%	15.50%	15.50%	2.56%	0.3969%
Fortune Brands Home & Security Inc	FBHS	\$	12,253.38	1.18%	10.00%	11.24%	0.04%	0.0044%
Freeport-McMoRan Inc	FCX	\$	46,087.38	1.01%	32.50%	33.67%	0.15%	0.0494%
FedEx Corp	FDX	\$	71,188.60	0.97%	8.50%	9.51%	0.23%	0.0216%
FirstEnergy Corp	FE	\$	18,645.21	4.54%	8.50%	13.23%	0.06%	0.0079%
F5 Networks Inc	FFIV	\$	12,185.26	0.00%	9.00%	9.00%	0.04%	0.0035%
Fidelity National Information Services I	FIS	\$	88,907.99	1.09%	28.00%	29.24%	0.28%	0.0828%
Fiserv Inc	FISV	\$	82,614.48	0.00%	14.00%	14.00%	0.26%	0.0368%
Fifth Third Bancorp	FITB	\$	25,858.93	2.98%	4.00%	7.04%	0.08%	0.0058%
FLIR Systems Inc	FLIR	\$	7,181.94	1.24%	6.50%	7.78%	0.02%	0.0018%
FleetCor Technologies Inc	FLT	\$	22,839.10	0.00%	14.00%	14.00%	0.07%	0.0102%
FMC Corp	FMC	\$	14,165.45	1.77%	8.50%	10.35%	0.05%	0.0047%
Fox Corp	FOXA	\$	23,732.19	1.15%	N/A	N/A	N/A	N/A
First Republic Bank/CA	FRC	\$	28,491.95	0.51%	10.50%	11.04%	0.09%	0.0100%
Federal Realty Investment Trust	FRT	\$	7,698.02	4.27%	-2.00%	2.23%	0.02%	0.0005%
Fortinet Inc	FTNT	\$	27,801.99	0.00%	21.00%	21.00%	0.09%	0.0186%
Fortive Corp	FTV	\$	23,354.47	0.40%	7.00%	7.41%	0.07%	0.0055%
General Dynamics Corp	GD	\$	50,502.70	2.70%	5.00%	7.77%	0.16%	0.0125%
General Electric Co	GE	\$	109,568.70	0.32%	4.00%	4.33%	0.35%	0.0151%
Gilead Sciences Inc	GILD	\$	80,694.91	4.41%	15.50%	20.25%	0.26%	0.0521%
General Mills Inc	GIS	\$	35,863.72	3.55%	4.00%	7.62%	0.11%	0.0087%
Globe Life Inc	GL	\$	10,153.86	0.78%	8.00%	8.81%	0.03%	0.0028%
Corning Inc	GLW	\$	30,791.25	2.39%	20.00%	22.63%	0.10%	0.0222%
General Motors Co	GM	\$	79,881.30	0.00%	7.00%	7.00%	0.25%	0.0178%
Generac Holdings Inc	GNRC	\$	21,378.92	0.00%	21.00%	21.00%	0.07%	0.0143%
Alphabet Inc	GOOGL		N/A	0.00%	N/A	N/A	N/A	N/A
Genuine Parts Co	GPC	\$	16,565.94	2.84%	7.00%	9.94%	0.05%	0.0052%
Global Payments Inc	GPN	\$	60,357.21	0.39%	11.50%	11.91%	0.19%	0.0229%
Gap Inc/The	GPS	\$	10,232.64	0.00%	2.50%	2.50%	0.03%	0.0008%
Garmin Ltd	GRMN	\$	24,175.17	2.11%	9.00%	11.20%	0.08%	0.0086%
Goldman Sachs Group Inc/The	GS	\$	113,084.50	1.52%	6.50%	8.07%	0.36%	0.0291%

WW Grainger Inc	GWW	\$	20,767.46	1.57%	4.50%	6.11%	0.07%	0.0040%
Halliburton Co	HAL	\$	18,850.50	0.85%	1.50%	2.36%	0.06%	0.0014%
Hasbro Inc	HAS	\$	13,104.18	2.84%	9.00%	11.97%	0.04%	0.0050%
Huntington Bancshares Inc/OH	HBAN	\$	15,583.44	3.92%	4.50%	8.51%	0.05%	0.0042%
Hanesbrands Inc	HBI	\$	6,701.06	3.12%	3.50%	6.67%	0.02%	0.0014%
HCA Healthcare Inc	HCA	\$	62,459.72	1.04%	10.50%	11.59%	0.20%	0.0231%
Home Depot Inc/The	HD	\$	314,999.00	2.25%	8.00%	10.34%	1.00%	0.1037%
Hess Corp	HES	\$	21,212.88	1.45%	N/A	N/A	N/A	N/A
HollyFrontier Corp	HFC	\$	5,788.83	4.14%	-2.00%	2.10%	0.02%	0.0004%
Hartford Financial Services Group Inc/Th	HIG	\$	24,019.59	2.09%	8.50%	10.68%	0.08%	0.0082%
Huntington Ingalls Industries Inc	HII	\$	7,861.86	2.35%	3.50%	5.89%	0.03%	0.0015%
Hilton Worldwide Holdings Inc	HLT	\$	32,875.45	0.00%	11.00%	11.00%	0.10%	0.0115%
Hologic Inc	HOLX	\$	18,531.61	0.00%	25.50%	25.50%	0.06%	0.0151%
Honeywell International Inc	HON	\$	147,874.90	1.75%	8.00%	9.82%	0.47%	0.0463%
Hewlett Packard Enterprise Co	HPE	\$	19,195.32	3.25%	6.50%	9.86%	0.06%	0.0060%
HP Inc	HPQ	\$	36,800.61	2.66%	11.50%	14.31%	0.12%	0.0168%
Hormel Foods Corp	HRL	\$	25,959.51	2.04%	10.00%	12.14%	0.08%	0.0100%
Henry Schein Inc	HSIC	\$	9,353.66	0.00%	4.50%	4.50%	0.03%	0.0013%
Host Hotels & Resorts Inc	HST	\$	12,041.18	0.00%	8.00%	8.00%	0.04%	0.0031%
Hershey Co/The	HSY	\$	32,745.78	2.05%	5.00%	7.10%	0.10%	0.0074%
Humana Inc	HUM	\$	54,786.12	0.68%	11.00%	11.72%	0.17%	0.0204%
Howmet Aerospace Inc	HWM	\$	13,159.88	0.00%	6.00%	6.00%	0.04%	0.0025%
International Business Machines Corp	IBM	\$	116,598.30	4.99%	1.50%	6.53%	0.37%	0.0242%
Intercontinental Exchange Inc	ICE	\$	63,174.21	1.17%	9.50%	10.73%	0.20%	0.0216%
IDEXX Laboratories Inc	IDXX	\$	40,344.34	0.00%	14.00%	14.00%	0.13%	0.0180%
IDEX Corp	IEX	\$	15,233.38	0.99%	7.50%	8.53%	0.05%	0.0041%
International Flavors & Fragrances Inc	IFF	\$	14,588.87	2.29%	6.00%	8.36%	0.05%	0.0039%
llumina Inc	ILMN	\$	59,392.80	0.00%	8.50%	8.50%	0.19%	0.0161%
Incyte Corp	INCY	\$	17,253.28	0.00%	66.50%	66.50%	0.05%	0.0365%
IHS Markit Ltd	INFO	\$	38,148.09	0.83%	10.50%	11.37%	0.12%	0.0138%
Intel Corp	INTC	\$	252,006.50	2.24%	7.00%	9.32%	0.80%	0.0748%
Intuit Inc	INTU	\$	98,796.02	0.66%	15.50%	16.21%	0.31%	0.0510%
International Paper Co	IP	\$	20,519.82	3.93%	11.00%	15.15%	0.07%	0.0099%
Interpublic Group of Cos Inc/The	IPG	\$	10,845.35	3.88%	10.00%	14.07%	0.03%	0.0049%
IPG Photonics Corp	IPGP	\$	10,836.60	0.00%	18.50%	18.50%	0.03%	0.0064%

IQVIA Holdings Inc	IQV	\$	35,677.29	0.00%	13.50%	13.50%	0.11%	0.0153%
Ingersoll Rand Inc	IR	\$	20,236.48	0.00%	N/A	N/A	N/A	N/A
Iron Mountain Inc	IRM	\$	10,506.42	6.80%	7.50%	14.56%	0.03%	0.0049%
Intuitive Surgical Inc	ISRG	\$	83,550.72	0.00%	13.00%	13.00%	0.27%	0.0346%
Gartner Inc	IT	\$	16,191.79	0.00%	10.50%	10.50%	0.05%	0.0054%
Illinois Tool Works Inc	ITW	\$	69,743.94	2.07%	9.00%	11.16%	0.22%	0.0248%
Invesco Ltd	IVZ	\$	10,679.54	2.67%	2.50%	5.20%	0.03%	0.0018%
Jacobs Engineering Group Inc	J	\$	16,033.32	0.68%	12.50%	13.22%	0.05%	0.0068%
JB Hunt Transport Services Inc	JBHT	\$	16,858.97	0.72%	7.50%	8.25%	0.05%	0.0044%
Johnson Controls International plc	JCI	\$	42,200.73	1.84%	8.00%	9.91%	0.13%	0.0133%
Jack Henry & Associates Inc	JKHY	\$	11,708.54	1.20%	10.50%	11.76%	0.04%	0.0044%
Johnson & Johnson	JNJ	\$	426,174.20	2.50%	9.50%	12.12%	1.36%	0.1645%
Juniper Networks Inc	JNPR	\$	8,028.65	3.35%	7.00%	10.47%	0.03%	0.0027%
JPMorgan Chase & Co	JPM	\$	459,305.70	2.39%	5.50%	7.96%	1.46%	0.1164%
Kellogg Co	K	\$	21,152.68	3.74%	2.50%	6.29%	0.07%	0.0042%
KeyCorp	KEY	\$	18,793.39	3.84%	4.50%	8.43%	0.06%	0.0050%
Keysight Technologies Inc	KEYS	\$	25,198.94	0.00%	16.50%	16.50%	0.08%	0.0132%
Kraft Heinz Co/The	KHC	\$	46,755.29	4.19%	-0.50%	3.68%	0.15%	0.0055%
Kimco Realty Corp	KIM	\$	7,897.80	4.38%	-2.00%	2.34%	0.03%	0.0006%
KLA Corp	KLAC	\$	45,923.02	1.21%	13.00%	14.29%	0.15%	0.0209%
Kimberly-Clark Corp	KMB	\$	45,958.07	3.36%	5.50%	8.95%	0.15%	0.0131%
Kinder Morgan Inc	KMI	\$	36,658.32	6.49%	19.00%	26.11%	0.12%	0.0305%
CarMax Inc	KMX	\$	20,925.41	0.00%	8.50%	8.50%	0.07%	0.0057%
Coca-Cola Co/The	KO	\$	221,639.00	3.26%	6.50%	9.87%	0.71%	0.0697%
Kroger Co/The	KR	\$	27,353.86	2.02%	7.50%	9.60%	0.09%	0.0084%
Kansas City Southern	KSU	\$	23,135.95	0.85%	13.00%	13.91%	0.07%	0.0102%
Loews Corp	L	\$	13,710.42	0.49%	13.00%	13.52%	0.04%	0.0059%
L Brands Inc	LB	\$	15,926.62	1.05%	16.00%	17.13%	0.05%	0.0087%
Leidos Holdings Inc	LDOS	\$	13,472.96	1.43%	10.50%	12.01%	0.04%	0.0052%
Leggett & Platt Inc	LEG	\$	5,841.03	3.63%	10.00%	13.81%	0.02%	0.0026%
Lennar Corp	LEN	\$	29,596.96	1.08%	7.00%	8.12%	0.09%	0.0077%
Laboratory Corp of America Holdings	LH	\$	24,390.91	0.00%	9.50%	9.50%	0.08%	0.0074%
L3Harris Technologies Inc	LHX	\$	42,502.94	2.08%	N/A	N/A	N/A	N/A
Linde PLC	LIN	\$	141,590.70	1.61%	N/A	N/A	N/A	N/A
LKQ Corp	LKQ	\$	12,486.82	0.00%	10.50%	10.50%	0.04%	0.0042%

Eli Lilly and Co	LLY	\$	172,348.80	1.89%	9.00%	10.98%	0.55%	0.0603%
Lockheed Martin Corp	LMT	\$	99,357.48	2.98%	7.50%	10.59%	0.32%	0.0335%
Lincoln National Corp	LNC	\$	11,253.17	2.97%	9.00%	12.10%	0.04%	0.0043%
Alliant Energy Corp	LNT	\$	13,322.96	3.02%	5.50%	8.60%	0.04%	0.0037%
Lowe's Cos Inc	LOW	\$	135,871.40	1.38%	15.50%	16.99%	0.43%	0.0735%
Lam Research Corp	LRCX	\$	79,113.59	1.00%	13.00%	14.07%	0.25%	0.0354%
Lumen Technologies Inc	LUMN	\$	14,501.29	7.56%	2.50%	10.15%	0.05%	0.0047%
Southwest Airlines Co	LUV	\$	34,070.35	0.00%	1.50%	1.50%	0.11%	0.0016%
Las Vegas Sands Corp	LVS	\$	45,188.95	0.00%	5.50%	5.50%	0.14%	0.0079%
Lamb Weston Holdings Inc	LW	\$	11,414.23	1.22%	4.00%	5.24%	0.04%	0.0019%
LyondellBasell Industries NV	LYB	\$	34,103.05	4.11%	N/A	N/A	N/A	N/A
Live Nation Entertainment Inc	LYV	\$	17,705.89	0.00%	N/A	N/A	N/A	N/A
Mastercard Inc	MA	\$	357,851.80	0.49%	12.00%	12.52%	1.14%	0.1427%
Mid-America Apartment Communities Inc	MAA	\$	16,489.12	2.84%	0.50%	3.35%	0.05%	0.0018%
Marriott International Inc/MD	MAR	\$	46,480.03	0.00%	4.00%	4.00%	0.15%	0.0059%
Masco Corp	MAS	\$	14,794.86	1.64%	7.50%	9.20%	0.05%	0.0043%
McDonald's Corp	MCD	\$	167,006.90	2.33%	8.00%	10.42%	0.53%	0.0554%
Microchip Technology Inc	MCHP	\$	39,516.31	1.07%	9.00%	10.12%	0.13%	0.0127%
McKesson Corp	MCK	\$	29,891.56	0.90%	9.00%	9.94%	0.10%	0.0095%
Moody's Corp	MCO	\$	55,647.01	0.84%	9.00%	9.88%	0.18%	0.0175%
Mondelez International Inc	MDLZ	\$	83,016.68	2.27%	8.00%	10.36%	0.26%	0.0274%
Medtronic PLC	MDT	\$	156,252.60	2.07%	7.00%	9.14%	0.50%	0.0455%
MetLife Inc	MET	\$	53,012.19	3.14%	6.50%	9.74%	0.17%	0.0165%
MGM Resorts International	MGM	\$	18,203.03	0.03%	30.00%	30.03%	0.06%	0.0174%
Mohawk Industries Inc	MHK	\$	13,029.54	0.00%	6.50%	6.50%	0.04%	0.0027%
McCormick & Co Inc/MD	MKC	\$	23,361.76	1.55%	6.50%	8.10%	0.07%	0.0060%
MarketAxess Holdings Inc	MKTX	\$	19,037.84	0.53%	17.00%	17.58%	0.06%	0.0107%
Martin Marietta Materials Inc	MLM	\$	20,076.18	0.72%	6.00%	6.74%	0.06%	0.0043%
Marsh & McLennan Cos Inc	MMC	\$	59,428.11	1.61%	9.00%	10.68%	0.19%	0.0202%
3M Co	MMM	\$	109,994.00	3.11%	5.00%	8.19%	0.35%	0.0287%
Monster Beverage Corp	MNST	\$	46,852.77	0.00%	12.50%	12.50%	0.15%	0.0187%
Altria Group Inc	MO	\$	92,010.33	6.95%	6.50%	13.68%	0.29%	0.0401%
Mosaic Co/The	MOS	\$	11,452.34	0.99%	30.00%	31.14%	0.04%	0.0114%
Marathon Petroleum Corp	MPC	\$	34,613.67	4.36%	3.50%	7.94%	0.11%	0.0088%
Monolithic Power Systems Inc	MPWR	\$	14,982.92	0.73%	17.50%	18.29%	0.05%	0.0087%

Merck & Co Inc	MRK	\$	192,904.40	3.41%	8.00%	11.55%	0.61%	0.0709%
Marathon Oil Corp	MRO	\$	8,247.60	1.15%	13.00%	14.22%	0.03%	0.0037%
Morgan Stanley	MS	\$	143,557.50	1.77%	7.50%	9.34%	0.46%	0.0427%
MSCI Inc	MSCI	\$	35,212.30	0.81%	18.00%	18.88%	0.11%	0.0212%
Microsoft Corp	MSFT	\$	1,776,781.00	0.95%	14.50%	15.52%	5.66%	0.8783%
Motorola Solutions Inc	MSI	\$	30,668.18	1.57%	7.00%	8.62%	0.10%	0.0084%
M&T Bank Corp	MTB	\$	18,963.77	2.98%	4.00%	7.04%	0.06%	0.0043%
Mettler-Toledo International Inc	MTD	\$	26,051.10	0.00%	12.00%	12.00%	0.08%	0.0100%
Micron Technology Inc	MU	\$	92,711.00	0.00%	12.50%	12.50%	0.30%	0.0369%
Maxim Integrated Products Inc	MXIM	\$	23,959.38	0.00%	8.00%	8.00%	0.08%	0.0061%
Norwegian Cruise Line Holdings Ltd	NCLH	\$	6,975.92	0.00%	-4.50%	-4.50%	0.02%	-0.0010%
Nasdaq Inc	NDAQ	\$	24,299.58	1.33%	7.00%	8.38%	0.08%	0.0065%
NextEra Energy Inc	NEE	\$	142,746.80	2.12%	10.50%	12.73%	0.45%	0.0579%
Newmont Corp	NEM	\$	48,296.00	3.64%	14.50%	18.40%	0.15%	0.0283%
Netflix Inc	NFLX	\$	230,664.20	0.00%	24.00%	24.00%	0.73%	0.1763%
NiSource Inc	NI	\$	9,148.76	3.69%	12.50%	16.42%	0.03%	0.0048%
NIKE Inc	NKE	\$	209,727.00	0.83%	26.50%	27.44%	0.67%	0.1833%
NortonLifeLock Inc	NLOK	\$	12,362.22	2.37%	6.50%	8.95%	0.04%	0.0035%
Nielsen Holdings PLC	NLSN	\$	8,924.98	0.96%	N/A	N/A	N/A	N/A
Northrop Grumman Corp	NOC	\$	52,687.58	1.84%	7.00%	8.90%	0.17%	0.0149%
NOV Inc	NOV	\$	5,240.35	0.00%	N/A	N/A	N/A	N/A
ServiceNow Inc	NOW	\$	92,126.02	0.00%	54.50%	54.50%	0.29%	0.1599%
NRG Energy Inc	NRG	\$	8,772.20	3.62%	N/A	N/A	N/A	N/A
Norfolk Southern Corp	NSC	\$	66,631.23	1.50%	9.50%	11.07%	0.21%	0.0235%
NetApp Inc	NTAP	\$	15,304.49	3.03%	5.50%	8.61%	0.05%	0.0042%
Northern Trust Corp	NTRS	\$	20,676.82	2.82%	5.00%	7.89%	0.07%	0.0052%
Nucor Corp	NUE	\$	20,974.94	2.33%	2.50%	4.86%	0.07%	0.0032%
NVIDIA Corp	NVDA	\$	313,546.40	0.13%	14.50%	14.64%	1.00%	0.1462%
NVR Inc	NVR	\$	16,778.55	0.00%	8.00%	8.00%	0.05%	0.0043%
Newell Brands Inc	NWL	\$	10,571.80	3.69%	N/A	N/A	N/A	N/A
News Corp	NWSA	\$	15,033.65	0.79%	N/A	N/A	N/A	N/A
NXP Semiconductors NV	NXPI	\$	52,527.35	1.20%	11.00%	12.27%	0.17%	0.0205%
Realty Income Corp	O	\$	21,094.73	4.56%	6.00%	10.70%	0.07%	0.0072%
Old Dominion Freight Line Inc	ODFL	\$	27,468.36	0.35%	10.00%	10.37%	0.09%	0.0091%
ONEOK Inc	OKE	\$	21,683.06	7.90%	9.50%	17.78%	0.07%	0.0123%

Omnicom Group Inc	OMC	\$	16,101.35	3.74%	5.50%	9.34%	0.05%	0.0048%
Oracle Corp	ORCL	\$	193,472.90	1.92%	10.50%	12.52%	0.62%	0.0772%
O'Reilly Automotive Inc	ORLY	\$	35,819.75	0.00%	14.00%	14.00%	0.11%	0.0160%
Otis Worldwide Corp	OTIS	\$	29,111.48	1.19%	N/A	N/A	N/A	N/A
Occidental Petroleum Corp	OXY	\$	25,203.28	0.30%	12.00%	12.32%	0.08%	0.0099%
Paycom Software Inc	PAYC	\$	20,989.53	0.00%	23.00%	23.00%	0.07%	0.0154%
Paychex Inc	PAYX	\$	34,966.79	2.72%	6.50%	9.31%	0.11%	0.0104%
People's United Financial Inc	PBCT	\$	7,338.47	4.23%	2.50%	6.78%	0.02%	0.0016%
PACCAR Inc	PCAR	\$	31,433.15	3.64%	3.50%	7.20%	0.10%	0.0072%
Healthpeak Properties Inc	PEAK	\$	15,833.66	3.83%	-13.00%	-9.42%	0.05%	-0.0048%
Public Service Enterprise Group Inc	PEG	\$	29,589.84	3.48%	5.00%	8.57%	0.09%	0.0081%
Penn National Gaming Inc	PENN	\$	16,155.73	0.00%	15.00%	15.00%	0.05%	0.0077%
PepsiCo Inc	PEP	\$	191,557.80	2.95%	6.00%	9.04%	0.61%	0.0552%
Pfizer Inc	PFE	\$	198,240.90	4.38%	9.50%	14.09%	0.63%	0.0890%
Principal Financial Group Inc	PFG	\$	15,907.27	3.87%	4.50%	8.46%	0.05%	0.0043%
Procter & Gamble Co/The	PG	\$	326,425.80	2.38%	7.00%	9.46%	1.04%	0.0984%
Progressive Corp/The	PGR	\$	54,162.15	0.43%	9.00%	9.45%	0.17%	0.0163%
Parker-Hannifin Corp	PH	\$	39,799.55	1.14%	11.50%	12.71%	0.13%	0.0161%
PulteGroup Inc	PHM	\$	12,846.23	1.18%	7.00%	8.22%	0.04%	0.0034%
Packaging Corp of America	PKG	\$	12,317.47	3.08%	5.00%	8.16%	0.04%	0.0032%
PerkinElmer Inc	PKI	\$	14,007.13	0.22%	17.50%	17.74%	0.04%	0.0079%
Prologis Inc	PLD	\$	76,762.54	2.48%	8.50%	11.09%	0.24%	0.0271%
Philip Morris International Inc	PM	\$	137,905.50	5.42%	5.00%	10.56%	0.44%	0.0464%
PNC Financial Services Group Inc/The	PNC	\$	72,186.00	2.70%	3.00%	5.74%	0.23%	0.0132%
Pentair PLC	PNR	\$	9,940.59	1.34%	5.50%	6.88%	0.03%	0.0022%
Pinnacle West Capital Corp	PNW	\$	8,975.70	4.30%	4.50%	8.90%	0.03%	0.0025%
Pool Corp	POOL	\$	13,656.03	0.68%	17.50%	18.24%	0.04%	0.0079%
PPG Industries Inc	PPG	\$	35,067.40	1.46%	6.00%	7.50%	0.11%	0.0084%
PPL Corp	PPL	\$	21,852.34	5.88%	2.50%	8.45%	0.07%	0.0059%
Perrigo Co PLC	PRGO	\$	5,643.44	2.29%	-2.00%	0.27%	0.02%	0.0000%
Prudential Financial Inc	PRU	\$	35,114.36	5.18%	4.50%	9.80%	0.11%	0.0110%
Public Storage	PSA	\$	42,059.40	3.34%	2.50%	5.88%	0.13%	0.0079%
Phillips 66	PSX	\$	35,830.70	4.51%	3.00%	7.58%	0.11%	0.0086%
PVH Corp	PVH	\$	6,803.46	0.00%	3.50%	3.50%	0.02%	0.0008%
Quanta Services Inc	PWR	\$	11,379.32	0.29%	13.50%	13.81%	0.04%	0.0050%

Pioneer Natural Resources Co	PXD	\$	26,530.14	1.40%	10.50%	11.97%	0.08%	0.0101%
PayPal Holdings Inc	PYPL	\$	274,564.40	0.00%	19.00%	19.00%	0.87%	0.1662%
QUALCOMM Inc	QCOM	\$	144,476.50	2.14%	16.50%	18.82%	0.46%	0.0866%
Qorvo Inc	QRVO	\$	19,463.64	0.00%	32.00%	32.00%	0.06%	0.0198%
Royal Caribbean Cruises Ltd	RCL	\$	17,515.47	0.00%	-0.50%	-0.50%	0.06%	-0.0003%
Everest Re Group Ltd	RE	\$	9,709.98	2.55%	10.50%	13.18%	0.03%	0.0041%
Regency Centers Corp	REG	\$	9,283.43	4.30%	10.00%	14.52%	0.03%	0.0043%
Regeneron Pharmaceuticals Inc	REGN	\$	48,380.09	0.00%	12.50%	12.50%	0.15%	0.0193%
Regions Financial Corp	RF	\$	19,132.64	3.11%	8.50%	11.74%	0.06%	0.0072%
Robert Half International Inc	RHI	\$	8,336.33	2.10%	7.50%	9.68%	0.03%	0.0026%
Raymond James Financial Inc	RJF	\$	16,287.65	1.32%	6.00%	7.36%	0.05%	0.0038%
Ralph Lauren Corp	RL	\$	8,330.48	0.00%	6.50%	6.50%	0.03%	0.0017%
ResMed Inc	RMD	\$	27,962.96	0.81%	13.00%	13.86%	0.09%	0.0123%
Rockwell Automation Inc	ROK	\$	30,560.31	1.65%	6.50%	8.20%	0.10%	0.0080%
Rollins Inc	ROL	\$	16,621.77	0.95%	11.50%	12.50%	0.05%	0.0066%
Roper Technologies Inc	ROP	\$	42,618.77	0.55%	10.00%	10.58%	0.14%	0.0144%
Ross Stores Inc	ROST	\$	41,162.73	0.00%	7.50%	7.50%	0.13%	0.0098%
Republic Services Inc	RSG	\$	34,809.17	1.78%	8.50%	10.36%	0.11%	0.0115%
Raytheon Technologies Corp	RTX	\$	114,793.50	2.54%	1.50%	4.06%	0.37%	0.0148%
SBA Communications Corp	SBAC	\$	30,363.76	0.85%	30.50%	31.48%	0.10%	0.0304%
Starbucks Corp	SBUX	\$	123,570.70	1.81%	16.00%	17.95%	0.39%	0.0707%
Charles Schwab Corp/The	SCHW	\$	115,500.50	1.17%	7.50%	8.71%	0.37%	0.0321%
Sealed Air Corp	SEE	\$	7,004.08	1.42%	13.50%	15.02%	0.02%	0.0034%
Sherwin-Williams Co/The	SHW	\$	64,853.43	0.95%	10.00%	11.00%	0.21%	0.0227%
SVB Financial Group	SIVB	\$	25,242.51	0.00%	7.50%	7.50%	0.08%	0.0060%
J M Smucker Co/The	SJM	\$	13,519.42	2.97%	2.50%	5.51%	0.04%	0.0024%
Schlumberger NV	SLB	\$	38,177.57	1.82%	N/A	N/A	N/A	N/A
Snap-on Inc	SNA	\$	11,658.44	2.28%	5.00%	7.34%	0.04%	0.0027%
Synopsys Inc	SNPS	\$	35,508.43	0.00%	13.50%	13.50%	0.11%	0.0153%
Southern Co/The	SO	\$	64,116.80	4.32%	3.50%	7.90%	0.20%	0.0161%
Simon Property Group Inc	SPG	\$	33,570.59	4.75%	-0.50%	4.24%	0.11%	0.0045%
S&P Global Inc	SPGI	\$	84,781.38	0.88%	10.00%	10.92%	0.27%	0.0295%
Sempra Energy	SRE	\$	37,203.98	3.49%	11.00%	14.68%	0.12%	0.0174%
STERIS PLC	STE	\$	16,022.02	0.85%	10.00%	10.89%	0.05%	0.0056%
State Street Corp	STT	\$	28,203.04	2.61%	5.00%	7.68%	0.09%	0.0069%

Seagate Technology PLC	STX	\$	17,101.37	3.76%	5.50%	9.36%	0.05%	0.0051%
Constellation Brands Inc	STZ	\$	44,392.09	1.39%	7.50%	8.94%	0.14%	0.0126%
Stanley Black & Decker Inc	SWK	\$	34,386.41	1.46%	6.00%	7.50%	0.11%	0.0082%
Skyworks Solutions Inc	SWKS	\$	28,229.23	1.17%	13.00%	14.25%	0.09%	0.0128%
Synchrony Financial	SYF	\$	23,052.92	2.23%	4.50%	6.78%	0.07%	0.0050%
Stryker Corp	SYK	\$	87,865.80	1.08%	9.50%	10.63%	0.28%	0.0298%
Sysco Corp	SYU	\$	39,601.34	2.32%	11.50%	13.95%	0.13%	0.0176%
AT&T Inc	T	\$	213,680.10	6.94%	2.50%	9.53%	0.68%	0.0648%
Molson Coors Beverage Co	TAP	\$	10,479.61	0.00%	5.50%	5.50%	0.03%	0.0018%
TransDigm Group Inc	TDG	\$	32,400.57	0.00%	9.50%	9.50%	0.10%	0.0098%
Teledyne Technologies Inc	TDY	\$	14,310.02	0.00%	9.00%	9.00%	0.05%	0.0041%
TE Connectivity Ltd	TEL	\$	41,353.20	1.60%	8.00%	9.66%	0.13%	0.0127%
Teradyne Inc	TER	\$	18,596.82	0.36%	13.00%	13.38%	0.06%	0.0079%
Truist Financial Corp	TFC	\$	75,251.95	3.23%	7.00%	10.34%	0.24%	0.0248%
Teleflex Inc	TFX	\$	18,797.23	0.34%	13.50%	13.86%	0.06%	0.0083%
Target Corp	TGT	\$	94,282.15	1.45%	12.50%	14.04%	0.30%	0.0422%
TJX Cos Inc/The	TJX	\$	77,236.59	1.62%	11.50%	13.21%	0.25%	0.0325%
Thermo Fisher Scientific Inc	TMO	\$	176,515.70	0.23%	17.50%	17.75%	0.56%	0.0998%
T-Mobile US Inc	TMUS	\$	151,947.40	0.00%	8.50%	8.50%	0.48%	0.0411%
Tapestry Inc	TPR	\$	11,289.79	0.00%	4.00%	4.00%	0.04%	0.0014%
Trimble Inc	TRMB	\$	17,789.24	0.00%	12.50%	12.50%	0.06%	0.0071%
T Rowe Price Group Inc	TROW	\$	38,553.93	2.54%	8.00%	10.64%	0.12%	0.0131%
Travelers Cos Inc/The	TRV	\$	37,678.27	2.28%	9.00%	11.38%	0.12%	0.0137%
Tractor Supply Co	TSCO	\$	19,652.55	1.23%	9.50%	10.79%	0.06%	0.0068%
Tesla Inc	TSLA	\$	597,496.00	0.00%	N/A	N/A	N/A	N/A
Tyson Foods Inc	TSN	\$	26,853.05	2.42%	6.50%	9.00%	0.09%	0.0077%
Trane Technologies PLC	TT	\$	38,498.23	1.46%	N/A	N/A	N/A	N/A
Take-Two Interactive Software Inc	TTWO	\$	19,594.03	0.00%	16.50%	16.50%	0.06%	0.0103%
Twitter Inc	TWTR	\$	49,303.38	0.00%	29.00%	29.00%	0.16%	0.0455%
Texas Instruments Inc	TXN	\$	164,472.40	2.28%	5.50%	7.84%	0.52%	0.0411%
Textron Inc	TXT	\$	11,904.16	0.15%	8.50%	8.66%	0.04%	0.0033%
Tyler Technologies Inc	TYL	\$	19,804.31	0.00%	10.50%	10.50%	0.06%	0.0066%
Under Armour Inc	UAA	\$	10,025.45	0.00%	11.00%	11.00%	0.03%	0.0035%
United Airlines Holdings Inc	UAL	\$	15,663.99	0.00%	1.50%	1.50%	0.05%	0.0007%
UDR Inc	UDR	\$	12,902.62	3.38%	6.00%	9.48%	0.04%	0.0039%

Universal Health Services Inc	UHS	\$	11,343.40	0.60%	10.00%	10.63%	0.04%	0.0038%
Ulta Beauty Inc	ULTA	\$	16,955.93	0.00%	7.00%	7.00%	0.05%	0.0038%
UnitedHealth Group Inc	UNH	\$	351,699.40	1.35%	12.00%	13.43%	1.12%	0.1505%
Unum Group	UNM	\$	5,309.60	4.37%	3.00%	7.44%	0.02%	0.0013%
Union Pacific Corp	UNP	\$	142,930.60	1.82%	10.00%	11.91%	0.46%	0.0542%
United Parcel Service Inc	UPS	\$	138,098.30	2.62%	8.00%	10.72%	0.44%	0.0472%
United Rentals Inc	URI	\$	22,049.68	0.00%	7.00%	7.00%	0.07%	0.0049%
US Bancorp	USB	\$	80,585.07	3.14%	3.00%	6.19%	0.26%	0.0159%
Visa Inc	V	\$	406,152.70	0.63%	15.50%	16.18%	1.29%	0.2093%
Varian Medical Systems Inc	VAR	\$	16,020.75	0.00%	14.50%	14.50%	0.05%	0.0074%
VF Corp	VFC	\$	29,972.99	2.56%	6.00%	8.64%	0.10%	0.0082%
ViacomCBS Inc	VIAC	\$	43,181.61	1.37%	8.00%	9.42%	0.14%	0.0130%
Valero Energy Corp	VLO	\$	29,315.31	5.46%	2.00%	7.51%	0.09%	0.0070%
Vulcan Materials Co	VMC	\$	21,275.44	0.92%	10.00%	10.97%	0.07%	0.0074%
Vornado Realty Trust	VNO	\$	8,643.09	4.69%	-18.50%	-14.24%	0.03%	-0.0039%
Verisk Analytics Inc	VRSK	\$	28,795.53	0.66%	11.50%	12.20%	0.09%	0.0112%
VeriSign Inc	VRSN	\$	22,130.05	0.00%	9.50%	9.50%	0.07%	0.0067%
Vertex Pharmaceuticals Inc	VRTX	\$	55,037.21	0.00%	28.50%	28.50%	0.18%	0.0500%
Ventas Inc	VTR	\$	20,086.54	3.45%	4.50%	8.03%	0.06%	0.0051%
Viatis Inc	VTRS		N/A	0.00%	N/A	N/A	N/A	N/A
Verizon Communications Inc	VZ	\$	235,912.80	4.46%	3.50%	8.04%	0.75%	0.0604%
Westinghouse Air Brake Technologies Cor	WAB	\$	14,362.97	0.63%	8.50%	9.16%	0.05%	0.0042%
Waters Corp	WAT	\$	16,687.56	0.00%	11.50%	11.50%	0.05%	0.0061%
Walgreens Boots Alliance Inc	WBA	\$	44,732.84	3.61%	5.00%	8.70%	0.14%	0.0124%
Western Digital Corp	WDC	\$	19,479.96	0.00%	5.00%	5.00%	0.06%	0.0031%
WEC Energy Group Inc	WEC	\$	29,004.15	3.00%	6.50%	9.60%	0.09%	0.0089%
Welltower Inc	WELL	\$	29,710.60	3.48%	N/A	N/A	N/A	N/A
Wells Fargo & Co	WFC	\$	157,531.60	1.05%	N/A	N/A	N/A	N/A
Whirlpool Corp	WHR	\$	13,085.72	2.37%	6.50%	8.95%	0.04%	0.0037%
Willis Towers Watson PLC	WLTW	\$	28,854.63	1.27%	11.50%	12.84%	0.09%	0.0118%
Waste Management Inc	WM	\$	52,747.31	1.84%	6.00%	7.90%	0.17%	0.0133%
Williams Cos Inc/The	WMB	\$	28,493.37	6.98%	12.00%	19.40%	0.09%	0.0176%
Walmart Inc	WMT	\$	376,834.40	1.65%	8.00%	9.72%	1.20%	0.1166%
W R Berkley Corp	WRB	\$	13,284.37	0.64%	13.50%	14.18%	0.04%	0.0060%
Westrock Co	WRK	\$	13,012.29	1.62%	6.50%	8.17%	0.04%	0.0034%

West Pharmaceutical Services Inc	WST	\$	20,550.11	0.25%	15.50%	15.77%	0.07%	0.0103%
Western Union Co/The	WU	\$	9,962.64	3.71%	6.00%	9.82%	0.03%	0.0031%
Weyerhaeuser Co	WY	\$	25,269.09	2.01%	20.50%	22.72%	0.08%	0.0183%
Wynn Resorts Ltd	WYNN	\$	13,503.42	0.00%	10.00%	10.00%	0.04%	0.0043%
Xcel Energy Inc	XEL	\$	35,245.18	2.79%	6.00%	8.87%	0.11%	0.0100%
Xilinx Inc	XLNX	\$	29,414.31	0.00%	7.50%	7.50%	0.09%	0.0070%
Exxon Mobil Corp	XOM	\$	238,487.20	6.18%	2.50%	8.76%	0.76%	0.0665%
DENTSPLY SIRONA Inc	XRAY	\$	13,186.47	0.66%	5.50%	6.18%	0.04%	0.0026%
Xylem Inc/NY	XYL	\$	18,209.91	1.11%	8.50%	9.66%	0.06%	0.0056%
Yum! Brands Inc	YUM	\$	32,124.00	1.87%	9.50%	11.46%	0.10%	0.0117%
Zimmer Biomet Holdings Inc	ZBH	\$	32,639.39	0.64%	5.50%	6.16%	0.10%	0.0064%
Zebra Technologies Corp	ZBRA	\$	24,796.21	0.00%	10.00%	10.00%	0.08%	0.0079%
Zions Bancorp NA	ZION	\$	8,698.41	2.57%	6.50%	9.15%	0.03%	0.0025%
Zoetis Inc	ZTS	\$	73,878.67	0.64%	10.00%	10.67%	0.24%	0.0251%
		\$	31,394,131.77					14.21%

Today:

3/31/2021

	NAME	TICKER	CUR_MKT_CAP	EQY_DVD_YLD_EST
AEE UN Equity	Ameren Corp	AEE	20780157356	2.656096362
AEP UN Equity	American Electric Power Co Inc	AEP	42067261067	3.515938607
AES UN Equity	AES Corp/The	AES	18180179717	2.290190228
ATO UN Equity	Atmos Energy Corp	ATO	12668684701	2.511886697
AWK UN Equity	American Water Works Co Inc	AWK	27205571169	1.559498399
CMS UN Equity	CMS Energy Corp	CMS	17718688616	2.848742241
CNP UN Equity	CenterPoint Energy Inc	CNP	12493308200	2.838852097
D UN Equity	Dominion Energy Inc	D	61223986741	3.308320169
DTE UN Equity	DTE Energy Co	DTE	25792840873	3.225176506
DUK UN Equity	Duke Energy Corp	DUK	74252470483	4.083704548
ED UN Equity	Consolidated Edison Inc	ED	25612953318	4.183155508
EIX UN Equity	Edison International	EIX	22229321011	4.510238908
ES UN Equity	Eversource Energy	ES	29728169633	2.78323132
ETR UN Equity	Entergy Corp	ETR	20000276434	3.907710868
EVRG UN Equity	Evergy Inc	EVRG	13512904601	3.618343692
EXC UW Equity	Exelon Corp	EXC	42723484106	3.598536808
FE UN Equity	FirstEnergy Corp	FE	18871587601	4.496973191
LNT UW Equity	Alliant Energy Corp	LNT	13533557668	2.985598227
NEE UN Equity	NextEra Energy Inc	NEE	1.48186E+11	2.040735352
NI UN Equity	NiSource Inc	NI	9447737632	3.691414351
NRG UN Equity	NRG Energy Inc	NRG	9232074731	3.445534058
PEG UN Equity	Public Service Enterprise Group Inc	PEG	30411654889	3.396445773
PNW UN Equity	Pinnacle West Capital Corp	PNW	9167461741	4.08973571
PPL UN Equity	PPL Corp	PPL	22177521199	5.76629681
SO UN Equity	Southern Co/The	SO	65669848922	4.222972973
SRE UN Equity	Sempra Energy	SRE	40132783091	3.353446975
WEC UN Equity	WEC Energy Group Inc	WEC	29521517756	2.890266054
XEL UW Equity	Xcel Energy Inc	XEL	35759023883	2.740941212

BEST_EST_LONG_TERM_GROWTH	EQY_SH_OUT	PX_LAST		Mkt Cap	Div Yield	LT EPS Growth
7.64	255.41	81.36	\$	20,780.16	2.66%	7.64%
6.35	496.6619	84.7	\$	42,067.26	3.52%	6.35%
8.325	678.1119	26.81	\$	18,180.18	2.29%	8.33%
7.098	128.1607	98.85	\$	12,668.68	2.51%	7.10%
8.54	181.4673	149.92	\$	27,205.57	1.56%	8.54%
7.03	289.4265	61.22	\$	17,718.69	2.85%	7.03%
3.5	551.5809	22.65	\$	12,493.31	2.84%	3.50%
7.02	806.003	75.96	\$	61,223.99	3.31%	7.02%
4.033	193.7272	133.14	\$	25,792.84	3.23%	4.03%
5	769.2165	96.53	\$	74,252.47	4.08%	5.00%
3.533	342.4192	74.8	\$	25,612.95	4.18%	3.53%
4.547	379.3399	58.6	\$	22,229.32	4.51%	4.55%
7.317	343.321	86.59	\$	29,728.17	2.78%	7.32%
3.087	201.0684	99.47	\$	20,000.28	3.91%	3.09%
7.267	226.9932	59.53	\$	13,512.90	3.62%	7.27%
3.53	976.76	43.74	\$	42,723.48	3.60%	3.53%
5.6	544.0066	34.69	\$	18,871.59	4.50%	5.60%
6.117	249.8811	54.16	\$	13,533.56	2.99%	6.12%
8.473	1959.875	75.61	\$	148,186.12	2.04%	8.47%
6.347	391.8597	24.11	\$	9,447.74	3.69%	6.35%
26.395	244.6879	37.73	\$	9,232.07	3.45%	26.40%
5.043	505.0931	60.21	\$	30,411.65	3.40%	5.04%
3.657	112.6916	81.35	\$	9,167.46	4.09%	3.66%
-2.65	768.9848	28.84	\$	22,177.52	5.77%	-2.65%
5.2	1056.465	62.16	\$	65,669.85	4.22%	5.20%
6.753	302.7062	132.58	\$	40,132.78	3.35%	6.75%
6.56	315.4345	93.59	\$	29,521.52	2.89%	6.56%
6.24	537.6488	66.51	\$	35,759.02	2.74%	6.24%
			\$	898,301.15		

DCF	% Total Mkt Cap	Wgtd DCF
10.40%	2.31%	0.2405%
9.98%	4.68%	0.4672%
10.71%	2.02%	0.2168%
9.70%	1.41%	0.1368%
10.17%	3.03%	0.3079%
9.98%	1.97%	0.1968%
6.39%	1.39%	0.0888%
10.44%	6.82%	0.7118%
7.32%	2.87%	0.2103%
9.19%	8.27%	0.7593%
7.79%	2.85%	0.2221%
9.16%	2.47%	0.2267%
10.20%	3.31%	0.3376%
7.06%	2.23%	0.1571%
11.02%	1.50%	0.1657%
7.19%	4.76%	0.3421%
10.22%	2.10%	0.2148%
9.19%	1.51%	0.1385%
10.60%	16.50%	1.7486%
10.16%	1.05%	0.1068%
30.30%	1.03%	0.3114%
8.53%	3.39%	0.2886%
7.82%	1.02%	0.0798%
3.04%	2.47%	0.0750%
9.53%	7.31%	0.6969%
10.22%	4.47%	0.4566%
9.55%	3.29%	0.3137%
9.07%	3.98%	0.3609%
		<hr/>
		9.58%

S&P 500

3/31/2021

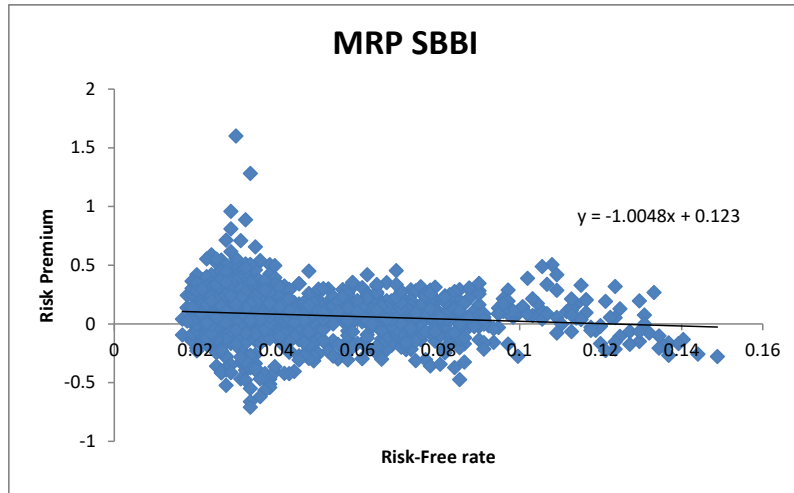
Company Name	Ticker	Market Capitalization	Dividend Yield	Projected EPS Growth	DCF Result	Weight in Index	Weighted DCF
Ameren Corp	AEE	\$ 20,514.77	2.77%	6.00%	8.85%	2.36%	0.2094%
American Electric Power Co Inc	AEP	\$ 42,206.38	3.58%	6.50%	10.20%	4.87%	0.4961%
AES Corp/The	AES	\$ 17,060.61	2.34%	21.50%	24.09%	1.97%	0.4738%
Atmos Energy Corp	ATO	\$ 12,283.47	2.71%	7.00%	9.80%	1.42%	0.1388%
American Water Works Co Inc	AWK	\$ 26,271.89	1.62%	8.50%	10.19%	3.03%	0.3086%
CMS Energy Corp	CMS	\$ 17,590.67	2.91%	7.50%	10.52%	2.03%	0.2133%
CenterPoint Energy Inc	CNP	\$ 11,991.97	2.99%	8.00%	11.11%	1.38%	0.1536%
Dominion Energy Inc	D	\$ 59,772.96	3.40%	7.00%	10.52%	6.89%	0.7248%
DTE Energy Co	DTE	\$ 25,292.80	3.43%	6.00%	9.53%	2.92%	0.2780%
Duke Energy Corp	DUK	\$ 72,585.91	4.13%	5.00%	9.23%	8.37%	0.7726%
Consolidated Edison Inc	ED	\$ 25,134.87	4.22%	2.50%	6.77%	2.90%	0.1962%
Edison International	EIX	\$ 22,707.90	4.47%	12.00%	16.74%	2.62%	0.4382%
Eversource Energy	ES	\$ 29,367.15	2.81%	6.50%	9.40%	3.39%	0.3183%
Entergy Corp	ETR	\$ 19,509.77	4.02%	3.00%	7.08%	2.25%	0.1592%
Evergy Inc	EVRG	\$ 13,392.40	3.73%	8.00%	11.88%	1.54%	0.1834%
Exelon Corp	EXC	\$ 41,899.68	3.56%	4.00%	7.63%	4.83%	0.3686%
FirstEnergy Corp	FE	\$ 18,645.21	4.54%	8.50%	13.23%	2.15%	0.2844%
Alliant Energy Corp	LNT	\$ 13,322.96	3.02%	5.50%	8.60%	1.54%	0.1321%
NextEra Energy Inc	NEE	\$ 142,746.80	2.12%	10.50%	12.73%	16.46%	2.0951%
NiSource Inc	NI	\$ 9,148.76	3.69%	12.50%	16.42%	1.05%	0.1732%
NRG Energy Inc	NRG	\$ 8,772.20	3.62%	N/A	N/A	N/A	N/A
Public Service Enterprise Group Inc	PEG	\$ 29,589.84	3.48%	5.00%	8.57%	3.41%	0.2922%
Pinnacle West Capital Corp	PNW	\$ 8,975.70	4.30%	4.50%	8.90%	1.03%	0.0921%
PPL Corp	PPL	\$ 21,852.34	5.88%	2.50%	8.45%	2.52%	0.2130%
Southern Co/The	SO	\$ 64,116.80	4.32%	3.50%	7.90%	7.39%	0.5836%
Sempra Energy	SRE	\$ 37,203.98	3.49%	11.00%	14.68%	4.29%	0.6297%
WEC Energy Group Inc	WEC	\$ 29,004.15	3.00%	6.50%	9.60%	3.34%	0.3209%
Xcel Energy Inc	XEL	\$ 35,245.18	2.79%	6.00%	8.87%	4.06%	0.3606%
		\$ 867,434.92					10.61%

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.1290614
R Square	0.0166568
Adjusted R Square	0.0157843
Standard Error	0.2096656
Observations	1129

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.839200212	0.8392002	19.09023935	1.36175E-05
Residual	1127	49.54252386	0.0439596		
Total	1128	50.38172407			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.1227418	0.012946251	9.4808754	1.43738E-20	0.097340326	0.1481433	0.0973403	0.1481433
X Variable 1	-1.0009412	0.229088295	-4.3692378	1.36175E-05	-1.450428782	-0.5514537	-1.4504288	-0.5514537



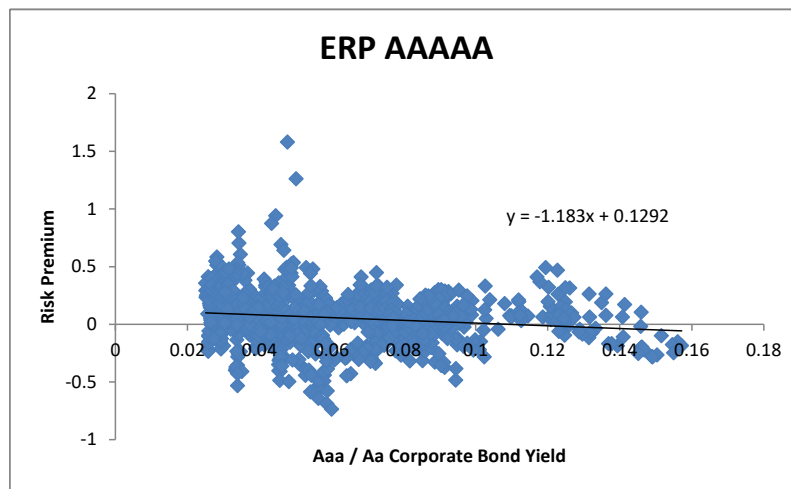
Risk-Free Rate	RP
2.73%	9.54%
Current	
Risk-Free Rate	RP
2.07%	10.20%

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.1586755
R Square	0.0251779
Adjusted R Square	0.0242941
Standard Error	0.2093502
Observations	1105

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	1.248581	1.248581	28.48853841	1.14368E-07
Residual	1103	48.341718	0.0438275		
Total	1104	49.590299			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.128949	0.014426	8.9386681	1.62214E-18	0.100643527	0.1572544	0.1006435	0.1572544
X Variable 1	-1.180319	0.2211385	-5.3374655	1.14368E-07	-1.614218557	-0.7464194	-1.6142186	-0.7464194



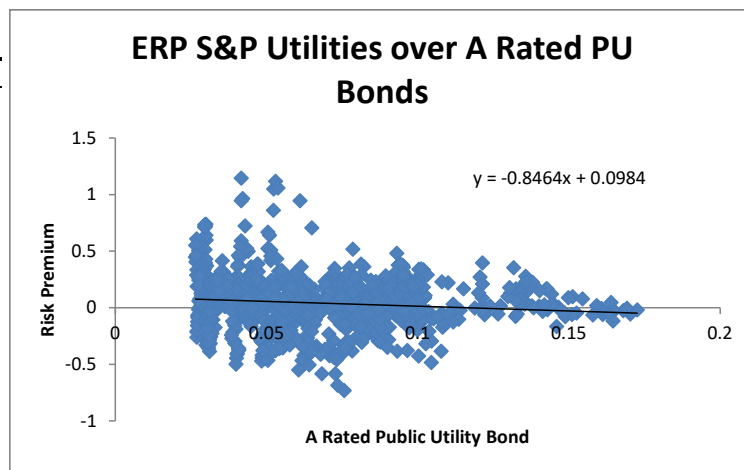
AAA Bond	3.44%	RP	8.83%
Current			
Average Aaa and Aa Corp. Bond	2.80%	RP	9.59%

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.1148279
R Square	0.0131855
Adjusted R Square	0.0122908
Standard Error	0.2191955
Observations	1105

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.7081061	0.7081061	14.73788512	0.0001306
Residual	1103	52.995459	0.0480467		
Total	1104	53.703565			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0962119	0.0150517	6.3921113	2.40998E-10	0.0666788	0.125745	0.0666788	0.125745
X Variable 1	-0.8220582	0.2141337	-3.8389953	0.000130561	-1.2422135	-0.4019028	-1.2422135	-0.4019028



A PU Bond	3.86%	RP	6.45%
Current			
A PU Bond	3.15%	RP	7.03%

ATO NJR NWN OGS SJI SWX SR MKTRP SPRP MKTAAAAA

Last updated: Last updated: Last updated: (Last updated: Last updated: Last updated: Last updated: Last updated: 0 Last updated: Last updated: 04/14/21 - 19:19
 Modified: 1 11 Modified: 1 11 Modified: 1 11 Modified: 1 11 Modified: 1 11 Modified: 1 11 Modified: 1 114 Modified: 1 11 Modified: 1 1143 // Conditional Variance

1926M01							0.07%	0.13%		
1926M02							0.07%	0.12%		
1926M03							0.07%	0.13%		
1926M04							0.08%	0.17%		
1926M05							0.08%	0.16%		
1926M06							0.08%	0.14%		
1926M07							0.08%	0.15%		
1926M08							0.11%	0.16%		
1926M09							0.10%	0.14%		
1926M10							0.10%	0.13%		
1926M11							0.10%	0.14%		
1926M12							0.15%	0.14%		
1927M01							0.16%	0.13%		
1927M02							0.15%	0.12%		
1927M03							0.18%	0.14%		
1927M04							0.17%	0.13%		
1927M05							0.24%	0.12%		
1927M06							0.69%	0.15%		
1927M07							0.64%	0.14%		
1927M08							0.58%	0.17%		
1927M09							0.53%	0.18%		
1927M10							0.60%	0.17%		
1927M11							0.55%	0.20%		
1927M12							0.51%	0.23%		
1928M01							0.57%	0.20%	0.27%	0.23%
1928M02							1.04%	0.18%	0.25%	0.20%
1928M03							0.94%	0.17%	0.23%	0.18%
1928M04							0.92%	0.28%	0.25%	0.30%
1928M05							0.83%	0.25%	0.31%	0.26%
1928M06							0.75%	0.22%	0.28%	0.23%
1928M07							0.70%	0.22%	0.27%	0.23%
1928M08							0.66%	0.19%	0.25%	0.20%
1928M09							0.81%	0.24%	0.26%	0.24%
1928M10							0.86%	0.21%	0.23%	0.21%
1928M11							0.78%	0.19%	0.21%	0.19%
1928M12							0.71%	0.35%	0.66%	0.35%
1929M01							0.64%	0.30%	0.58%	0.30%
1929M02							0.60%	0.29%	0.66%	0.29%
1929M03							0.55%	0.25%	0.60%	0.25%
1929M04							0.50%	0.22%	0.53%	0.22%
1929M05							0.47%	0.19%	0.47%	0.20%
1929M06							0.45%	0.20%	0.43%	0.20%
1929M07							0.42%	0.31%	0.85%	0.32%
1929M08							0.39%	0.29%	0.80%	0.29%
1929M09							0.59%	0.35%	0.78%	0.35%
1929M10							0.68%	0.35%	0.69%	0.35%
1929M11							1.24%	0.87%	1.70%	0.88%
1929M12							1.48%	1.03%	1.81%	1.03%
1930M01							1.34%	0.86%	1.59%	0.87%

1930M02						1.24%	0.73%	1.41%	0.74%
1930M03						1.12%	0.62%	1.28%	0.63%
1930M04						1.02%	0.56%	1.16%	0.58%
1930M05						0.92%	0.49%	1.02%	0.50%
1930M06						0.84%	0.42%	0.91%	0.43%
1930M07						0.76%	0.76%	1.27%	0.78%
1930M08						0.71%	0.64%	1.11%	0.65%
1930M09						0.65%	0.54%	0.97%	0.55%
1930M10						0.60%	0.74%	1.04%	0.75%
1930M11						0.55%	0.77%	1.02%	0.78%
1930M12						0.50%	0.67%	0.98%	0.67%
1931M01						0.47%	0.67%	0.89%	0.68%
1931M02						0.43%	0.58%	0.80%	0.58%
1931M03						0.41%	0.61%	0.90%	0.62%
1931M04						0.38%	0.62%	0.81%	0.62%
1931M05						0.34%	0.69%	0.87%	0.70%
1931M06						0.32%	0.87%	0.92%	0.88%
1931M07						0.30%	0.89%	0.96%	0.90%
1931M08						0.34%	0.88%	0.91%	0.89%
1931M09						0.32%	0.74%	0.80%	0.75%
1931M10						0.35%	1.94%	1.89%	1.96%
1931M11						0.32%	1.62%	1.70%	1.65%
1931M12						0.32%	1.57%	1.58%	1.59%
1932M01						1.01%	1.77%	1.65%	1.78%
1932M02						0.91%	1.56%	1.46%	1.57%
1932M03						0.94%	1.30%	1.31%	1.31%
1932M04						0.86%	1.41%	1.33%	1.41%
1932M05						1.21%	1.94%	1.51%	1.93%
1932M06						1.63%	2.62%	2.37%	2.60%
1932M07						2.67%	2.27%	2.08%	2.24%
1932M08						2.41%	3.08%	2.75%	3.14%
1932M09						3.30%	3.61%	3.77%	3.73%
1932M10						3.02%	3.26%	3.38%	3.35%
1932M11						2.72%	3.43%	3.22%	3.47%
1932M12						2.45%	3.12%	2.90%	3.14%
1933M01						2.30%	2.61%	2.54%	2.62%
1933M02						2.16%	2.23%	2.28%	2.24%
1933M03						2.19%	2.63%	2.60%	2.62%
1933M04						1.99%	2.21%	2.52%	2.20%
1933M05						3.00%	3.43%	2.72%	3.50%
1933M06						4.82%	2.88%	2.55%	2.96%
1933M07						5.31%	2.40%	2.33%	2.49%
1933M08						5.29%	2.33%	2.31%	2.39%
1933M09						4.78%	1.96%	2.04%	2.02%
1933M10						5.06%	2.01%	2.27%	2.06%
1933M11						5.16%	1.96%	2.11%	1.99%
1933M12						4.69%	1.66%	1.88%	1.69%
1934M01						4.29%	1.39%	1.64%	1.42%
1934M02						3.86%	1.20%	1.66%	1.24%
1934M03						3.48%	1.07%	1.48%	1.10%
1934M04						3.68%	0.91%	1.31%	0.93%
1934M05						3.32%	0.80%	1.18%	0.82%
1934M06						3.00%	0.80%	1.14%	0.82%

1934M07						3.36%	0.67%	1.01%	0.69%
1934M08						4.67%	0.80%	1.23%	0.81%
1934M09						4.21%	0.69%	1.08%	0.70%
1934M10						3.78%	0.59%	0.95%	0.60%
1934M11						3.46%	0.53%	0.91%	0.54%
1934M12						3.11%	0.52%	0.80%	0.53%
1935M01						2.84%	0.44%	0.78%	0.45%
1935M02						2.66%	0.42%	0.70%	0.43%
1935M03						3.18%	0.39%	0.80%	0.40%
1935M04						3.38%	0.35%	0.78%	0.36%
1935M05						4.16%	0.39%	0.80%	0.40%
1935M06						4.01%	0.35%	0.80%	0.35%
1935M07						4.49%	0.34%	0.78%	0.34%
1935M08						6.75%	0.36%	0.74%	0.36%
1935M09						6.20%	0.31%	0.67%	0.31%
1935M10						6.08%	0.27%	0.59%	0.27%
1935M11						5.46%	0.29%	0.65%	0.29%
1935M12						4.91%	0.27%	0.57%	0.27%
1936M01						4.47%	0.24%	0.52%	0.25%
1936M02						5.18%	0.25%	0.56%	0.26%
1936M03						5.25%	0.22%	0.52%	0.23%
1936M04						4.71%	0.20%	0.46%	0.20%
1936M05						4.80%	0.26%	0.49%	0.27%
1936M06						4.34%	0.25%	0.48%	0.26%
1936M07						3.95%	0.23%	0.43%	0.23%
1936M08						3.67%	0.25%	0.47%	0.25%
1936M09						3.31%	0.22%	0.42%	0.22%
1936M10						2.98%	0.19%	0.38%	0.19%
1936M11						2.75%	0.23%	0.36%	0.23%
1936M12						2.48%	0.20%	0.33%	0.20%
1937M01						2.69%	0.18%	0.30%	0.18%
1937M02						2.45%	0.17%	0.26%	0.17%
1937M03						2.39%	0.16%	0.25%	0.16%
1937M04						2.20%	0.14%	0.27%	0.14%
1937M05						2.13%	0.23%	0.31%	0.23%
1937M06						1.93%	0.20%	0.32%	0.20%
1937M07						2.08%	0.22%	0.31%	0.22%
1937M08						2.02%	0.31%	0.55%	0.31%
1937M09						1.83%	0.31%	0.60%	0.31%
1937M10						2.77%	0.56%	0.71%	0.57%
1937M11						2.53%	0.65%	0.67%	0.65%
1937M12						2.38%	0.70%	0.59%	0.70%
1938M01						2.46%	0.65%	0.64%	0.65%
1938M02						2.37%	0.55%	0.59%	0.55%
1938M03						2.25%	0.49%	0.53%	0.50%
1938M04						3.67%	1.32%	0.94%	1.32%
1938M05						3.50%	1.23%	1.03%	1.25%
1938M06						3.16%	1.09%	0.90%	1.11%
1938M07						3.56%	1.49%	1.02%	1.53%
1938M08						3.22%	1.25%	0.89%	1.29%
1938M09						3.36%	1.09%	0.84%	1.12%
1938M10						3.05%	0.92%	0.73%	0.94%
1938M11						2.76%	0.80%	0.94%	0.82%

1938M12						2.85%	0.70%	0.89%	0.73%
1939M01						2.59%	0.60%	0.79%	0.62%
1939M02						2.35%	0.60%	0.69%	0.62%
1939M03						2.17%	0.51%	0.65%	0.53%
1939M04						2.79%	0.73%	0.82%	0.74%
1939M05						2.54%	0.62%	0.72%	0.63%
1939M06						2.49%	0.56%	0.66%	0.57%
1939M07						2.52%	0.55%	0.62%	0.56%
1939M08						2.27%	0.57%	0.67%	0.59%
1939M09						2.05%	0.57%	0.65%	0.58%
1939M10						2.03%	0.76%	0.58%	0.78%
1939M11						1.86%	0.66%	0.51%	0.67%
1939M12						2.14%	0.60%	0.46%	0.61%
1940M01						1.92%	0.51%	0.41%	0.52%
1940M02						1.74%	0.46%	0.36%	0.47%
1940M03						1.58%	0.39%	0.32%	0.40%
1940M04						1.49%	0.34%	0.29%	0.34%
1940M05						1.59%	0.29%	0.26%	0.30%
1940M06						2.81%	0.98%	0.68%	0.99%
1940M07						4.44%	0.85%	0.80%	0.87%
1940M08						4.03%	0.71%	0.70%	0.73%
1940M09						3.77%	0.60%	0.62%	0.62%
1940M10						3.39%	0.51%	0.56%	0.52%
1940M11						3.11%	0.44%	0.50%	0.45%
1940M12						2.92%	0.40%	0.62%	0.41%
1941M01						2.77%	0.34%	0.55%	0.35%
1941M02						2.55%	0.34%	0.49%	0.35%
1941M03						2.31%	0.30%	0.44%	0.30%
1941M04						2.09%	0.26%	0.40%	0.26%
1941M05						1.94%	0.29%	0.45%	0.29%
1941M06						1.75%	0.25%	0.42%	0.25%
1941M07						1.67%	0.25%	0.37%	0.25%
1941M08						6.52%	0.24%	0.35%	0.25%
1941M09						5.89%	0.21%	0.32%	0.22%
1941M10						5.51%	0.19%	0.30%	0.19%
1941M11						4.96%	0.24%	0.36%	0.24%
1941M12						4.63%	0.23%	0.37%	0.23%
1942M01						5.30%	0.23%	0.39%	0.23%
1942M02						4.80%	0.20%	0.35%	0.20%
1942M03						4.31%	0.18%	0.33%	0.19%
1942M04						3.97%	0.23%	0.43%	0.23%
1942M05						3.80%	0.23%	0.41%	0.23%
1942M06						3.89%	0.27%	0.44%	0.27%
1942M07						3.66%	0.23%	0.39%	0.24%
1942M08						3.34%	0.21%	0.35%	0.21%
1942M09						3.03%	0.19%	0.31%	0.19%
1942M10						3.01%	0.17%	0.29%	0.17%
1942M11						2.72%	0.20%	0.44%	0.20%
1942M12						2.62%	0.18%	0.39%	0.18%
1943M01						2.36%	0.19%	0.35%	0.19%
1943M02						2.18%	0.22%	0.45%	0.22%
1943M03						2.01%	0.22%	0.44%	0.23%
1943M04						2.39%	0.22%	0.40%	0.23%

1943M05						2.16%	0.20%	0.36%	0.20%
1943M06						1.98%	0.20%	0.33%	0.20%
1943M07						1.81%	0.18%	0.31%	0.18%
1943M08						1.84%	0.21%	0.28%	0.21%
1943M09						1.68%	0.18%	0.25%	0.18%
1943M10						1.58%	0.17%	0.23%	0.17%
1943M11						1.54%	0.15%	0.20%	0.15%
1943M12						1.73%	0.20%	0.26%	0.20%
1944M01						1.57%	0.22%	0.26%	0.22%
1944M02						1.44%	0.19%	0.23%	0.19%
1944M03						1.33%	0.17%	0.21%	0.17%
1944M04						1.22%	0.15%	0.19%	0.15%
1944M05						1.16%	0.14%	0.17%	0.14%
1944M06						1.23%	0.15%	0.16%	0.15%
1944M07						1.14%	0.17%	0.17%	0.17%
1944M08						1.16%	0.16%	0.15%	0.16%
1944M09						1.05%	0.14%	0.15%	0.14%
1944M10						0.95%	0.13%	0.14%	0.13%
1944M11						0.85%	0.12%	0.13%	0.12%
1944M12						0.80%	0.11%	0.12%	0.11%
1945M01						0.75%	0.12%	0.12%	0.12%
1945M02						1.15%	0.11%	0.13%	0.11%
1945M03						1.04%	0.15%	0.17%	0.15%
1945M04						2.02%	0.17%	0.17%	0.17%
1945M05						1.83%	0.24%	0.26%	0.24%
1945M06						1.68%	0.21%	0.24%	0.21%
1945M07						1.54%	0.19%	0.25%	0.19%
1945M08						1.39%	0.17%	0.22%	0.17%
1945M09						1.26%	0.20%	0.20%	0.20%
1945M10						1.17%	0.19%	0.23%	0.19%
1945M11						1.10%	0.18%	0.24%	0.18%
1945M12						1.14%	0.17%	0.24%	0.17%
1946M01						1.07%	0.15%	0.21%	0.15%
1946M02						1.72%	0.19%	0.33%	0.19%
1946M03						1.75%	0.23%	0.35%	0.23%
1946M04						1.57%	0.22%	0.34%	0.23%
1946M05						1.44%	0.21%	0.31%	0.21%
1946M06						1.52%	0.19%	0.28%	0.19%
1946M07						1.52%	0.19%	0.26%	0.19%
1946M08						1.43%	0.18%	0.26%	0.18%
1946M09						1.31%	0.23%	0.30%	0.23%
1946M10						1.35%	0.35%	0.40%	0.36%
1946M11						1.23%	0.31%	0.36%	0.31%
1946M12						1.19%	0.27%	0.31%	0.27%
1947M01						1.11%	0.25%	0.32%	0.25%
1947M02						1.02%	0.22%	0.29%	0.22%
1947M03						1.03%	0.20%	0.26%	0.20%
1947M04						0.97%	0.18%	0.25%	0.18%
1947M05						0.97%	0.18%	0.24%	0.18%
1947M06						0.89%	0.16%	0.23%	0.16%
1947M07						0.81%	0.18%	0.22%	0.18%
1947M08						0.74%	0.17%	0.20%	0.17%
1947M09						0.91%	0.16%	0.18%	0.16%

1947M10						0.89%	0.15%	0.16%	0.15%
1947M11						0.84%	0.14%	0.15%	0.14%
1947M12						0.82%	0.13%	0.22%	0.13%
1948M01						0.75%	0.13%	0.20%	0.12%
1948M02						0.69%	0.14%	0.18%	0.14%
1948M03						0.64%	0.15%	0.18%	0.15%
1948M04						0.59%	0.20%	0.20%	0.20%
1948M05						0.57%	0.19%	0.18%	0.19%
1948M06						0.63%	0.25%	0.19%	0.25%
1948M07						0.58%	0.22%	0.17%	0.22%
1948M08						0.53%	0.23%	0.18%	0.23%
1948M09						0.49%	0.21%	0.17%	0.21%
1948M10						0.45%	0.20%	0.15%	0.20%
1948M11						0.42%	0.22%	0.15%	0.23%
1948M12						0.60%	0.34%	0.24%	0.34%
1949M01						0.55%	0.30%	0.21%	0.30%
1949M02						0.64%	0.26%	0.21%	0.26%
1949M03						0.58%	0.24%	0.19%	0.24%
1949M04						0.82%	0.22%	0.18%	0.22%
1949M05						0.76%	0.20%	0.16%	0.20%
1949M06						0.69%	0.19%	0.15%	0.19%
1949M07						0.64%	0.17%	0.14%	0.17%
1949M08						0.59%	0.20%	0.16%	0.20%
1949M09						0.58%	0.18%	0.15%	0.18%
1949M10						0.53%	0.16%	0.15%	0.16%
1949M11						0.52%	0.15%	0.13%	0.15%
1949M12						0.48%	0.14%	0.12%	0.14%
1950M01						0.43%	0.15%	0.13%	0.15%
1950M02						0.47%	0.14%	0.13%	0.14%
1950M03						0.43%	0.13%	0.12%	0.13%
1950M04						0.41%	0.12%	0.11%	0.12%
1950M05						0.38%	0.13%	0.10%	0.13%
1950M06						0.35%	0.15%	0.10%	0.15%
1950M07						0.42%	0.18%	0.16%	0.18%
1950M08						0.40%	0.16%	0.17%	0.16%
1950M09						0.38%	0.16%	0.15%	0.16%
1950M10						0.36%	0.18%	0.15%	0.18%
1950M11						0.33%	0.16%	0.14%	0.16%
1950M12						0.38%	0.15%	0.13%	0.14%
1951M01						0.35%	0.16%	0.13%	0.16%
1951M02						0.33%	0.18%	0.13%	0.18%
1951M03						0.30%	0.16%	0.13%	0.16%
1951M04						0.29%	0.15%	0.12%	0.15%
1951M05						0.27%	0.16%	0.11%	0.16%
1951M06						0.25%	0.16%	0.10%	0.16%
1951M07						0.23%	0.16%	0.10%	0.16%
1951M08						0.22%	0.19%	0.11%	0.19%
1951M09						0.21%	0.19%	0.10%	0.19%
1951M10						0.24%	0.17%	0.09%	0.17%
1951M11						0.22%	0.16%	0.09%	0.16%
1951M12						0.21%	0.14%	0.08%	0.14%
1952M01						0.25%	0.14%	0.09%	0.14%
1952M02						0.23%	0.13%	0.09%	0.13%

1952M03						0.22%	0.14%	0.08%	0.13%
1952M04						0.21%	0.15%	0.08%	0.15%
1952M05						0.20%	0.16%	0.08%	0.16%
1952M06						0.26%	0.15%	0.08%	0.15%
1952M07						0.26%	0.16%	0.07%	0.16%
1952M08						0.25%	0.15%	0.07%	0.15%
1952M09						0.23%	0.14%	0.07%	0.13%
1952M10						0.21%	0.13%	0.07%	0.13%
1952M11						0.20%	0.12%	0.06%	0.12%
1952M12						0.19%	0.14%	0.08%	0.14%
1953M01						0.23%	0.14%	0.08%	0.14%
1953M02						0.22%	0.13%	0.07%	0.13%
1953M03						0.25%	0.12%	0.07%	0.12%
1953M04						0.23%	0.12%	0.07%	0.12%
1953M05						0.24%	0.13%	0.07%	0.12%
1953M06						0.22%	0.11%	0.07%	0.11%
1953M07						0.21%	0.11%	0.07%	0.11%
1953M08						0.19%	0.11%	0.08%	0.11%
1953M09						0.18%	0.14%	0.07%	0.14%
1953M10						0.18%	0.13%	0.07%	0.13%
1953M11						0.26%	0.15%	0.08%	0.15%
1953M12						0.24%	0.14%	0.08%	0.13%
1954M01						0.23%	0.12%	0.08%	0.12%
1954M02						0.21%	0.14%	0.08%	0.14%
1954M03						0.22%	0.13%	0.08%	0.13%
1954M04						0.21%	0.13%	0.08%	0.13%
1954M05						0.19%	0.14%	0.07%	0.14%
1954M06						0.26%	0.15%	0.08%	0.14%
1954M07						0.24%	0.13%	0.07%	0.13%
1954M08						0.22%	0.16%	0.09%	0.15%
1954M09						0.21%	0.16%	0.09%	0.15%
1954M10						0.20%	0.22%	0.08%	0.22%
1954M11						0.20%	0.20%	0.10%	0.20%
1954M12						0.27%	0.26%	0.12%	0.26%
1955M01						0.32%	0.25%	0.12%	0.25%
1955M02						0.31%	0.22%	0.11%	0.22%
1955M03						0.32%	0.19%	0.11%	0.19%
1955M04						0.29%	0.17%	0.10%	0.17%
1955M05						0.27%	0.17%	0.10%	0.17%
1955M06						0.25%	0.15%	0.09%	0.15%
1955M07						0.23%	0.21%	0.09%	0.21%
1955M08						0.25%	0.22%	0.10%	0.22%
1955M09						0.24%	0.20%	0.09%	0.20%
1955M10						0.23%	0.17%	0.10%	0.17%
1955M11						0.22%	0.17%	0.09%	0.17%
1955M12						0.20%	0.22%	0.09%	0.23%
1956M01						0.23%	0.20%	0.09%	0.20%
1956M02						0.22%	0.20%	0.08%	0.20%
1956M03						0.21%	0.19%	0.08%	0.19%
1956M04						0.21%	0.22%	0.09%	0.22%
1956M05						0.20%	0.19%	0.09%	0.19%
1956M06						0.18%	0.23%	0.09%	0.23%
1956M07						0.18%	0.21%	0.09%	0.21%

1956M08						0.17%	0.21%	0.11%	0.21%
1956M09						0.16%	0.21%	0.11%	0.21%
1956M10						0.15%	0.22%	0.11%	0.22%
1956M11						0.14%	0.19%	0.11%	0.19%
1956M12						0.13%	0.17%	0.10%	0.17%
1957M01						0.13%	0.17%	0.09%	0.16%
1957M02						0.14%	0.18%	0.09%	0.18%
1957M03						0.13%	0.17%	0.09%	0.17%
1957M04						0.13%	0.16%	0.08%	0.16%
1957M05						0.12%	0.15%	0.09%	0.15%
1957M06						0.12%	0.15%	0.09%	0.15%
1957M07						0.13%	0.14%	0.10%	0.14%
1957M08						0.13%	0.13%	0.10%	0.13%
1957M09						0.12%	0.16%	0.10%	0.16%
1957M10						0.12%	0.20%	0.10%	0.20%
1957M11						0.17%	0.20%	0.09%	0.20%
1957M12						0.21%	0.18%	0.10%	0.18%
1958M01						0.19%	0.19%	0.10%	0.19%
1958M02						0.27%	0.18%	0.12%	0.18%
1958M03						0.31%	0.17%	0.11%	0.17%
1958M04						0.29%	0.16%	0.11%	0.16%
1958M05						0.28%	0.15%	0.12%	0.15%
1958M06						0.28%	0.14%	0.11%	0.14%
1958M07						0.26%	0.13%	0.10%	0.13%
1958M08						0.25%	0.14%	0.10%	0.14%
1958M09						0.23%	0.13%	0.09%	0.13%
1958M10				1.24%		0.21%	0.14%	0.09%	0.14%
1958M11				1.05%		0.20%	0.13%	0.10%	0.13%
1958M12				0.89%		0.19%	0.13%	0.10%	0.13%
1959M01				1.49%		0.33%	0.14%	0.13%	0.14%
1959M02				1.39%		0.30%	0.13%	0.12%	0.13%
1959M03				1.25%		0.29%	0.12%	0.11%	0.12%
1959M04				1.05%		0.27%	0.11%	0.10%	0.11%
1959M05				0.88%		0.30%	0.12%	0.10%	0.12%
1959M06				0.75%		0.33%	0.11%	0.09%	0.11%
1959M07				0.65%		0.32%	0.11%	0.09%	0.10%
1959M08				0.65%		0.30%	0.11%	0.09%	0.11%
1959M09				0.56%		0.27%	0.11%	0.09%	0.10%
1959M10				0.60%		0.27%	0.13%	0.10%	0.13%
1959M11				0.52%		0.25%	0.12%	0.10%	0.12%
1959M12				0.46%		0.23%	0.11%	0.09%	0.11%
1960M01				0.44%		0.26%	0.11%	0.09%	0.11%
1960M02				0.40%		0.31%	0.18%	0.08%	0.18%
1960M03				0.39%		0.29%	0.16%	0.08%	0.16%
1960M04				0.36%		0.31%	0.15%	0.08%	0.15%
1960M05				0.33%		0.37%	0.14%	0.07%	0.14%
1960M06				0.30%		0.34%	0.14%	0.07%	0.13%
1960M07				0.27%		0.32%	0.13%	0.08%	0.13%
1960M08				0.37%		0.29%	0.13%	0.08%	0.13%
1960M09				0.36%		0.36%	0.12%	0.10%	0.12%
1960M10				0.42%		0.35%	0.17%	0.12%	0.17%
1960M11				0.37%		0.36%	0.15%	0.11%	0.15%
1960M12				0.41%		0.44%	0.16%	0.12%	0.16%

1961M01				0.36%		0.42%	0.16%	0.16%	0.16%
1961M02				0.40%		0.39%	0.18%	0.17%	0.18%
1961M03				0.65%		0.41%	0.17%	0.17%	0.17%
1961M04				0.66%		0.40%	0.16%	0.16%	0.16%
1961M05				0.85%		0.37%	0.14%	0.14%	0.14%
1961M06				0.89%		0.39%	0.13%	0.13%	0.13%
1961M07				0.80%		0.44%	0.14%	0.13%	0.13%
1961M08				0.69%		0.40%	0.13%	0.13%	0.13%
1961M09				0.75%		0.37%	0.12%	0.14%	0.12%
1961M10				0.64%		0.36%	0.12%	0.13%	0.12%
1961M11				0.63%		0.33%	0.12%	0.13%	0.12%
1961M12				0.59%		0.30%	0.13%	0.13%	0.13%
1962M01				0.57%		0.31%	0.12%	0.13%	0.12%
1962M02				0.62%		0.35%	0.13%	0.14%	0.13%
1962M03				0.54%		0.32%	0.12%	0.13%	0.12%
1962M04				0.47%		0.29%	0.12%	0.12%	0.11%
1962M05				0.48%		0.28%	0.17%	0.13%	0.16%
1962M06				0.79%		0.37%	0.25%	0.22%	0.25%
1962M07				0.69%		0.34%	0.32%	0.24%	0.32%
1962M08				0.59%		0.32%	0.31%	0.25%	0.31%
1962M09				0.52%		0.29%	0.27%	0.23%	0.27%
1962M10				0.47%		0.27%	0.28%	0.22%	0.28%
1962M11				0.47%		0.25%	0.24%	0.20%	0.24%
1962M12				0.47%		0.27%	0.33%	0.23%	0.33%
1963M01				0.43%		0.28%	0.28%	0.22%	0.29%
1963M02				0.49%		0.38%	0.27%	0.22%	0.27%
1963M03				0.62%		0.37%	0.25%	0.20%	0.25%
1963M04				0.57%		0.42%	0.22%	0.18%	0.23%
1963M05				0.51%		0.40%	0.22%	0.17%	0.22%
1963M06				0.47%		0.38%	0.19%	0.15%	0.19%
1963M07				0.42%		0.35%	0.18%	0.14%	0.18%
1963M08				0.38%		0.32%	0.16%	0.13%	0.16%
1963M09				0.34%		0.30%	0.17%	0.13%	0.17%
1963M10				0.40%		0.30%	0.16%	0.13%	0.16%
1963M11				0.36%		0.28%	0.15%	0.12%	0.15%
1963M12				0.36%		0.27%	0.14%	0.11%	0.14%
1964M01				0.33%		0.26%	0.13%	0.11%	0.13%
1964M02				0.31%		0.26%	0.12%	0.10%	0.12%
1964M03				0.30%		0.26%	0.11%	0.09%	0.11%
1964M04				0.28%		0.24%	0.11%	0.09%	0.11%
1964M05				0.26%		0.23%	0.10%	0.08%	0.10%
1964M06				0.24%		0.22%	0.10%	0.08%	0.09%
1964M07				0.23%		0.20%	0.09%	0.08%	0.09%
1964M08				0.22%		0.20%	0.09%	0.09%	0.09%
1964M09				0.21%		0.21%	0.09%	0.08%	0.09%
1964M10				0.20%		0.19%	0.09%	0.08%	0.09%
1964M11				0.20%		0.18%	0.09%	0.08%	0.09%
1964M12				0.19%		0.17%	0.09%	0.07%	0.08%
1965M01				0.19%		0.16%	0.08%	0.07%	0.08%
1965M02				0.19%		0.15%	0.09%	0.08%	0.09%
1965M03				0.19%		0.17%	0.09%	0.07%	0.08%
1965M04				0.18%		0.18%	0.09%	0.07%	0.08%
1965M05				0.18%		0.17%	0.10%	0.07%	0.09%

1965M06				0.17%		0.16%	0.09%	0.06%	0.09%
1965M07				0.21%		0.16%	0.12%	0.08%	0.12%
1965M08				0.21%		0.15%	0.12%	0.07%	0.11%
1965M09				0.21%		0.15%	0.11%	0.07%	0.11%
1965M10				0.23%		0.14%	0.11%	0.07%	0.11%
1965M11				0.22%		0.14%	0.11%	0.07%	0.11%
1965M12				0.23%		0.14%	0.10%	0.07%	0.10%
1966M01				0.23%		0.16%	0.10%	0.06%	0.10%
1966M02				0.21%		0.18%	0.09%	0.07%	0.09%
1966M03				0.20%		0.18%	0.09%	0.09%	0.09%
1966M04				0.20%		0.17%	0.10%	0.09%	0.10%
1966M05				0.19%		0.17%	0.10%	0.08%	0.09%
1966M06				0.18%		0.16%	0.13%	0.09%	0.13%
1966M07				0.24%		0.15%	0.13%	0.09%	0.12%
1966M08				0.22%		0.15%	0.12%	0.08%	0.12%
1966M09				0.23%		0.15%	0.19%	0.17%	0.19%
1966M10				0.22%		0.14%	0.17%	0.17%	0.17%
1966M11				0.22%		0.14%	0.18%	0.24%	0.17%
1966M12				0.21%		0.13%	0.16%	0.22%	0.15%
1967M01				0.20%		0.14%	0.14%	0.20%	0.14%
1967M02				0.21%		0.28%	0.19%	0.18%	0.19%
1967M03				0.20%		0.26%	0.17%	0.17%	0.17%
1967M04				0.22%		0.24%	0.17%	0.16%	0.17%
1967M05				0.21%		0.23%	0.16%	0.14%	0.16%
1967M06				0.21%		0.21%	0.19%	0.17%	0.19%
1967M07				0.20%		0.20%	0.17%	0.15%	0.17%
1967M08				0.19%		0.19%	0.17%	0.14%	0.17%
1967M09				0.19%		0.18%	0.15%	0.13%	0.15%
1967M10				0.19%		0.17%	0.15%	0.12%	0.15%
1967M11				0.26%		0.16%	0.15%	0.15%	0.15%
1967M12				0.25%		0.15%	0.14%	0.15%	0.13%
1968M01				0.23%		0.15%	0.13%	0.14%	0.13%
1968M02				0.22%		0.18%	0.15%	0.12%	0.15%
1968M03				0.22%		0.19%	0.15%	0.12%	0.15%
1968M04				0.23%		0.18%	0.14%	0.14%	0.14%
1968M05				0.22%		0.17%	0.19%	0.13%	0.19%
1968M06				0.27%		0.16%	0.17%	0.12%	0.17%
1968M07				0.25%		0.18%	0.15%	0.17%	0.15%
1968M08				0.26%		0.17%	0.15%	0.15%	0.15%
1968M09				0.24%		0.18%	0.13%	0.14%	0.13%
1968M10				0.24%		0.17%	0.14%	0.13%	0.13%
1968M11				0.24%		0.16%	0.12%	0.12%	0.12%
1968M12				0.22%		0.26%	0.14%	0.16%	0.14%
1969M01				0.21%		0.29%	0.16%	0.16%	0.16%
1969M02				0.21%		0.27%	0.15%	0.15%	0.14%
1969M03				0.20%		0.29%	0.17%	0.17%	0.16%
1969M04				0.20%		0.27%	0.16%	0.16%	0.16%
1969M05				0.21%		0.25%	0.14%	0.15%	0.14%
1969M06				0.22%		0.23%	0.13%	0.13%	0.13%
1969M07				0.22%		0.25%	0.17%	0.16%	0.17%
1969M08				0.21%		0.24%	0.21%	0.17%	0.21%
1969M09				0.20%		0.23%	0.20%	0.16%	0.20%
1969M10				0.20%		0.22%	0.19%	0.16%	0.19%

1969M11				0.19%		0.20%	0.19%	0.20%	0.19%
1969M12				0.23%		0.19%	0.19%	0.23%	0.19%
1970M01				0.22%		0.18%	0.18%	0.21%	0.18%
1970M02				0.21%		0.17%	0.25%	0.22%	0.25%
1970M03				0.20%		0.18%	0.24%	0.30%	0.25%
1970M04				0.21%		0.19%	0.21%	0.27%	0.22%
1970M05				0.20%		0.23%	0.32%	0.35%	0.32%
1970M06				0.33%		0.22%	0.34%	0.36%	0.34%
1970M07				0.30%		0.22%	0.34%	0.37%	0.35%
1970M08				0.27%		0.21%	0.34%	0.41%	0.34%
1970M09				0.26%		0.25%	0.31%	0.38%	0.31%
1970M10				0.26%		0.23%	0.27%	0.34%	0.27%
1970M11				0.24%		0.22%	0.24%	0.31%	0.24%
1970M12				0.23%		0.32%	0.23%	0.36%	0.23%
1971M01				0.23%		0.31%	0.23%	0.36%	0.23%
1971M02				0.74%		0.28%	0.21%	0.32%	0.21%
1971M03				0.67%		0.26%	0.19%	0.30%	0.19%
1971M04				0.59%		0.24%	0.17%	0.27%	0.17%
1971M05				0.52%		0.22%	0.16%	0.26%	0.16%
1971M06				0.48%		0.30%	0.18%	0.26%	0.18%
1971M07				0.44%		0.28%	0.16%	0.24%	0.16%
1971M08				0.40%		0.26%	0.17%	0.22%	0.17%
1971M09				0.36%		0.25%	0.17%	0.21%	0.17%
1971M10				0.32%		0.24%	0.15%	0.20%	0.15%
1971M11				0.30%		0.22%	0.17%	0.18%	0.17%
1971M12				0.27%		0.21%	0.15%	0.16%	0.15%
1972M01				0.25%		0.19%	0.21%	0.20%	0.21%
1972M02				0.24%		0.18%	0.19%	0.19%	0.19%
1972M03				0.22%		0.17%	0.17%	0.18%	0.17%
1972M04				0.21%		0.16%	0.15%	0.16%	0.15%
1972M05				0.21%		0.16%	0.14%	0.16%	0.14%
1972M06				0.22%		0.16%	0.13%	0.15%	0.13%
1972M07				0.22%		0.15%	0.13%	0.14%	0.13%
1972M08				0.21%		0.14%	0.12%	0.13%	0.12%
1972M09				0.20%		0.13%	0.12%	0.15%	0.12%
1972M10				0.19%		0.13%	0.11%	0.13%	0.11%
1972M11				0.19%		0.15%	0.11%	0.16%	0.10%
1972M12				0.25%		0.14%	0.12%	0.17%	0.12%
1973M01	0.54%	0.23%		0.23%	0.20%	0.15%	0.11%	0.16%	0.11%
1973M02	0.77%	0.28%		0.26%	0.21%	0.18%	0.11%	0.18%	0.11%
1973M03	0.51%	0.27%		0.25%	0.22%	0.17%	0.13%	0.17%	0.12%
1973M04	0.43%	0.25%		0.23%	0.22%	0.16%	0.12%	0.16%	0.12%
1973M05	0.34%	0.23%		0.22%	0.26%	0.15%	0.14%	0.15%	0.14%
1973M06	0.35%	0.22%		0.23%	0.25%	0.17%	0.13%	0.13%	0.13%
1973M07	0.29%	0.22%		0.24%	0.25%	0.17%	0.12%	0.13%	0.12%
1973M08	0.27%	0.21%		0.24%	0.30%	0.17%	0.13%	0.13%	0.12%
1973M09	0.27%	0.22%		0.27%	0.28%	0.16%	0.14%	0.13%	0.14%
1973M10	0.26%	0.21%		0.26%	0.27%	0.15%	0.14%	0.17%	0.14%
1973M11	0.31%	0.20%		0.26%	0.26%	0.14%	0.13%	0.18%	0.12%
1973M12	0.50%	0.29%		0.39%	0.80%	0.16%	0.29%	0.34%	0.29%
1974M01	0.36%	0.29%		0.36%	0.78%	0.15%	0.25%	0.30%	0.25%
1974M02	0.39%	0.55%		0.36%	1.09%	0.15%	0.23%	0.28%	0.23%
1974M03	0.34%	0.46%		0.34%	0.95%	0.16%	0.20%	0.25%	0.20%

1974M04		0.39%	0.45%		0.31%	0.87%	0.17%	0.19%	0.25%	0.19%
1974M05		0.43%	0.43%		0.41%	0.83%	0.18%	0.20%	0.44%	0.20%
1974M06		0.60%	0.41%		0.47%	0.81%	0.27%	0.20%	0.43%	0.20%
1974M07		0.48%	0.36%		0.42%	0.85%	0.25%	0.18%	0.43%	0.18%
1974M08		0.62%	0.31%		0.38%	0.74%	0.23%	0.26%	0.39%	0.26%
1974M09		0.41%	0.54%		0.40%	0.82%	0.31%	0.40%	0.35%	0.35%
1974M10		0.38%	0.61%		0.38%	0.75%	0.30%	0.53%	0.41%	0.53%
1974M11		0.38%	0.70%		0.43%	0.66%	0.40%	0.71%	0.48%	0.72%
1974M12		0.45%	0.59%		0.38%	0.69%	0.53%	0.66%	0.43%	0.67%
1975M01		0.54%	0.64%		0.84%	0.61%	0.51%	0.58%	0.38%	0.59%
1975M02		3.06%	1.41%		3.26%	0.87%	1.73%	0.62%	0.67%	0.63%
1975M03		1.73%	1.14%		2.70%	0.88%	1.61%	0.54%	0.59%	0.56%
1975M04		1.05%	1.15%		2.23%	0.77%	1.45%	0.46%	0.53%	0.47%
1975M05		0.61%	0.95%		1.95%	0.69%	1.31%	0.40%	0.48%	0.41%
1975M06		0.43%	0.81%		1.62%	0.60%	1.32%	0.35%	0.48%	0.36%
1975M07		0.50%	1.25%		1.39%	0.75%	1.20%	0.31%	0.51%	0.32%
1975M08		0.60%	1.23%		1.30%	0.65%	1.11%	0.36%	0.50%	0.36%
1975M09		0.47%	0.99%		1.24%	0.60%	1.03%	0.32%	0.45%	0.33%
1975M10		0.35%	0.84%		1.04%	0.54%	0.93%	0.31%	0.41%	0.31%
1975M11		0.36%	0.79%		0.88%	0.52%	0.84%	0.29%	0.39%	0.30%
1975M12		0.51%	0.68%		0.92%	0.48%	0.76%	0.26%	0.35%	0.26%
1976M01		0.41%	0.56%		0.79%	0.43%	0.69%	0.23%	0.31%	0.23%
1976M02		0.63%	0.77%		0.75%	0.51%	0.63%	0.34%	0.34%	0.35%
1976M03		0.47%	0.66%		0.64%	0.51%	0.59%	0.30%	0.33%	0.31%
1976M04		0.34%	0.56%		0.55%	0.46%	0.58%	0.26%	0.29%	0.27%
1976M05		0.33%	0.47%		0.49%	0.42%	0.52%	0.24%	0.26%	0.24%
1976M06		0.30%	0.44%		0.44%	0.41%	0.49%	0.21%	0.24%	0.22%
1976M07		0.35%	0.37%		0.39%	0.37%	0.44%	0.20%	0.22%	0.20%
1976M08		0.30%	0.38%		0.35%	0.36%	0.43%	0.18%	0.20%	0.18%
1976M09		0.28%	0.33%		0.33%	0.33%	0.40%	0.16%	0.19%	0.16%
1976M10		0.28%	0.31%		0.30%	0.32%	0.37%	0.15%	0.18%	0.15%
1976M11		0.27%	0.28%		0.28%	0.30%	0.34%	0.15%	0.16%	0.15%
1976M12		0.27%	0.28%		0.26%	0.30%	0.32%	0.13%	0.15%	0.13%
1977M01		0.40%	0.42%		0.25%	0.32%	0.31%	0.15%	0.17%	0.15%
1977M02		0.32%	0.36%		0.23%	0.32%	0.59%	0.18%	0.15%	0.18%
1977M03		0.30%	0.34%		0.23%	0.32%	0.74%	0.17%	0.16%	0.17%
1977M04		0.27%	0.32%		0.22%	0.31%	0.68%	0.16%	0.14%	0.16%
1977M05		0.34%	0.28%		0.21%	0.30%	0.61%	0.14%	0.13%	0.14%
1977M06		0.31%	0.30%		0.20%	0.28%	0.59%	0.14%	0.12%	0.14%
1977M07		0.57%	0.43%		0.20%	0.27%	0.60%	0.14%	0.13%	0.14%
1977M08		0.38%	0.37%		0.19%	0.29%	0.55%	0.14%	0.12%	0.14%
1977M09		0.45%	0.37%		0.23%	0.29%	0.53%	0.13%	0.13%	0.13%
1977M10		0.34%	0.35%		0.22%	0.28%	0.49%	0.12%	0.12%	0.12%
1977M11		0.37%	0.31%		0.28%	0.28%	0.47%	0.15%	0.13%	0.15%
1977M12		0.36%	0.29%		0.26%	0.27%	0.44%	0.14%	0.13%	0.14%
1978M01		0.32%	0.27%		0.24%	0.26%	0.42%	0.13%	0.12%	0.13%
1978M02		0.30%	0.26%		0.22%	0.26%	0.38%	0.18%	0.15%	0.18%
1978M03		0.36%	0.24%		0.21%	0.26%	0.35%	0.17%	0.14%	0.17%
1978M04		0.30%	0.24%		0.21%	0.25%	0.32%	0.16%	0.13%	0.15%
1978M05		0.28%	0.38%		0.20%	0.25%	0.31%	0.21%	0.12%	0.21%
1978M06		0.28%	0.37%		0.19%	0.30%	0.29%	0.19%	0.11%	0.19%
1978M07		0.30%	0.33%		0.19%	0.29%	0.27%	0.18%	0.10%	0.18%
1978M08		0.28%	0.32%		0.19%	0.29%	0.25%	0.18%	0.10%	0.18%

1978M09		0.26%	0.29%		0.20%	0.29%	0.23%	0.17%	0.09%	0.17%
1978M10		0.31%	0.33%		0.22%	0.28%	0.22%	0.15%	0.09%	0.15%
1978M11		0.82%	0.30%		0.35%	0.50%	0.27%	0.27%	0.15%	0.27%
1978M12		0.49%	0.30%		0.32%	0.62%	0.27%	0.23%	0.14%	0.23%
1979M01		0.35%	0.26%		0.31%	0.60%	0.25%	0.20%	0.13%	0.20%
1979M02		0.45%	0.24%		0.39%	0.55%	0.30%	0.19%	0.16%	0.19%
1979M03		0.35%	0.22%		0.36%	0.49%	0.38%	0.19%	0.16%	0.19%
1979M04		0.35%	0.20%		0.32%	0.45%	0.35%	0.19%	0.14%	0.19%
1979M05		0.33%	0.30%		0.33%	0.41%	0.34%	0.17%	0.14%	0.17%
1979M06		0.28%	0.28%		0.30%	0.39%	0.35%	0.16%	0.13%	0.17%
1979M07		0.31%	0.25%		0.37%	0.37%	0.34%	0.16%	0.13%	0.16%
1979M08		0.42%	0.41%		0.33%	0.35%	0.32%	0.14%	0.12%	0.14%
1979M09		0.32%	0.79%		0.30%	0.33%	0.29%	0.16%	0.11%	0.16%
1979M10		0.29%	0.74%		0.28%	0.31%	0.27%	0.14%	0.11%	0.14%
1979M11		0.70%	0.78%		0.34%	0.42%	0.42%	0.21%	0.14%	0.21%
1979M12		0.46%	0.93%		0.46%	0.38%	0.38%	0.20%	0.16%	0.20%
1980M01		0.49%	0.77%		0.45%	0.36%	0.36%	0.18%	0.14%	0.18%
1980M02		0.58%	0.63%		0.39%	0.35%	0.42%	0.19%	0.13%	0.19%
1980M03		0.51%	0.53%		0.35%	0.33%	0.55%	0.17%	0.14%	0.17%
1980M04		0.46%	1.24%		0.57%	0.78%	0.75%	0.31%	0.17%	0.32%
1980M05		0.96%	1.14%		0.55%	0.91%	0.84%	0.28%	0.27%	0.28%
1980M06		0.60%	0.93%		0.52%	0.81%	0.78%	0.26%	0.25%	0.26%
1980M07		0.40%	0.76%		0.45%	0.71%	0.72%	0.23%	0.22%	0.23%
1980M08		0.42%	0.64%		0.40%	0.63%	0.67%	0.23%	0.20%	0.24%
1980M09		0.32%	0.66%		0.39%	0.63%	0.65%	0.20%	0.19%	0.21%
1980M10		0.37%	0.55%		0.46%	0.65%	0.73%	0.18%	0.18%	0.18%
1980M11		0.34%	0.48%		0.74%	0.60%	0.66%	0.16%	0.16%	0.16%
1980M12		0.30%	0.63%		0.70%	0.62%	0.79%	0.26%	0.16%	0.26%
1981M01		0.41%	0.79%		0.61%	0.56%	0.71%	0.26%	0.15%	0.26%
1981M02		0.32%	0.67%		0.58%	0.57%	0.78%	0.27%	0.15%	0.27%
1981M03		0.28%	0.65%		0.53%	0.51%	0.71%	0.24%	0.15%	0.24%
1981M04		0.28%	0.55%		0.46%	0.46%	0.67%	0.21%	0.14%	0.21%
1981M05		0.48%	0.50%		0.49%	0.48%	0.62%	0.20%	0.14%	0.21%
1981M06		0.41%	0.42%		0.43%	0.46%	0.57%	0.18%	0.13%	0.18%
1981M07		0.45%	0.36%		0.38%	0.43%	0.51%	0.17%	0.12%	0.17%
1981M08		0.35%	0.33%		0.45%	0.42%	0.51%	0.15%	0.11%	0.16%
1981M09		0.31%	0.30%		0.40%	0.39%	0.47%	0.20%	0.10%	0.21%
1981M10		0.39%	0.26%		0.40%	0.39%	0.46%	0.24%	0.13%	0.24%
1981M11		0.31%	0.24%		0.36%	0.37%	0.42%	0.22%	0.14%	0.23%
1981M12		0.51%	0.28%		0.33%	0.59%	0.86%	0.20%	0.14%	0.21%
1982M01		0.36%	0.32%		0.32%	0.69%	0.79%	0.20%	0.15%	0.21%
1982M02		0.30%	0.28%		0.33%	0.67%	0.77%	0.19%	0.14%	0.20%
1982M03		0.27%	0.30%		0.32%	0.61%	0.69%	0.23%	0.13%	0.24%
1982M04		0.34%	0.27%		0.30%	0.56%	0.64%	0.21%	0.12%	0.21%
1982M05		0.29%	0.24%		0.28%	0.50%	0.58%	0.19%	0.13%	0.20%
1982M06		0.27%	0.23%		0.30%	0.52%	0.55%	0.19%	0.13%	0.20%
1982M07		0.30%	0.29%		0.27%	0.53%	0.50%	0.19%	0.13%	0.19%
1982M08		0.31%	0.26%		0.28%	0.48%	0.46%	0.19%	0.13%	0.19%
1982M09		0.46%	0.25%		0.26%	0.47%	0.42%	0.32%	0.24%	0.32%
1982M10		0.34%	0.26%		0.27%	0.42%	0.40%	0.27%	0.22%	0.28%
1982M11		0.34%	0.31%		0.29%	0.49%	0.38%	0.35%	0.22%	0.36%
1982M12		0.33%	0.28%		0.27%	0.47%	0.38%	0.31%	0.20%	0.31%
1983M01		0.42%	0.25%		0.27%	0.43%	0.37%	0.27%	0.18%	0.27%

1983M02		0.59%	0.28%		0.25%	0.44%	0.34%	0.24%	0.17%	0.24%
1983M03		0.49%	0.32%		0.25%	0.43%	0.31%	0.21%	0.16%	0.21%
1983M04		0.36%	0.33%		0.24%	0.40%	0.29%	0.19%	0.14%	0.19%
1983M05		0.30%	0.29%		0.22%	0.40%	0.27%	0.22%	0.15%	0.22%
1983M06		0.30%	0.30%		0.21%	0.37%	0.25%	0.19%	0.14%	0.19%
1983M07		0.34%	0.28%		0.33%	0.35%	0.24%	0.18%	0.13%	0.18%
1983M08		0.29%	0.26%		0.34%	0.33%	0.23%	0.19%	0.12%	0.19%
1983M09		0.28%	0.25%		0.32%	0.33%	0.26%	0.16%	0.11%	0.17%
1983M10		0.37%	0.25%		0.30%	0.35%	0.26%	0.15%	0.12%	0.15%
1983M11		0.36%	0.27%		0.33%	0.58%	0.27%	0.14%	0.12%	0.14%
1983M12		6.74%	0.25%		0.30%	0.52%	0.37%	0.13%	0.13%	0.13%
1984M01	0.13%	4.14%	0.25%		0.43%	0.47%	0.35%	0.12%	0.13%	0.12%
1984M02	0.13%	3.27%	0.25%		0.51%	0.43%	0.32%	0.12%	0.13%	0.12%
1984M03	0.12%	1.52%	0.29%		0.45%	0.40%	0.30%	0.14%	0.15%	0.14%
1984M04	0.12%	0.90%	0.26%		0.49%	0.38%	0.31%	0.13%	0.14%	0.12%
1984M05	0.18%	0.52%	0.26%		0.49%	0.35%	0.32%	0.12%	0.13%	0.11%
1984M06	0.17%	0.63%	0.24%		0.45%	0.45%	0.34%	0.16%	0.13%	0.17%
1984M07	0.18%	0.49%	0.25%		0.43%	0.46%	0.31%	0.15%	0.12%	0.15%
1984M08	0.21%	0.35%	0.25%		0.38%	0.43%	0.29%	0.15%	0.12%	0.14%
1984M09	0.24%	0.34%	0.23%		0.34%	0.40%	0.27%	0.25%	0.14%	0.25%
1984M10	0.27%	0.31%	0.23%		0.31%	0.43%	0.48%	0.22%	0.14%	0.22%
1984M11	0.26%	0.28%	0.27%		0.35%	0.40%	0.54%	0.20%	0.12%	0.20%
1984M12	0.33%	0.28%	0.25%		0.31%	0.36%	0.49%	0.18%	0.12%	0.18%
1985M01	0.30%	0.26%	0.23%		0.31%	0.44%	0.47%	0.16%	0.11%	0.16%
1985M02	0.29%	0.30%	0.27%		0.28%	0.40%	0.43%	0.20%	0.10%	0.20%
1985M03	0.26%	0.27%	0.24%		0.26%	0.37%	0.39%	0.17%	0.10%	0.17%
1985M04	0.25%	0.27%	0.23%		0.24%	0.39%	0.36%	0.16%	0.09%	0.16%
1985M05	0.32%	0.26%	0.21%		0.23%	0.36%	0.41%	0.15%	0.09%	0.15%
1985M06	0.48%	0.36%	0.21%		0.24%	0.36%	0.47%	0.16%	0.11%	0.16%
1985M07	0.48%	0.32%	0.21%		0.23%	0.35%	0.43%	0.14%	0.10%	0.14%
1985M08	0.55%	0.30%	0.30%		0.28%	0.33%	0.43%	0.13%	0.13%	0.13%
1985M09	0.49%	0.27%	0.27%		0.26%	0.31%	0.39%	0.13%	0.12%	0.13%
1985M10	0.43%	0.33%	0.25%		0.26%	0.36%	0.43%	0.14%	0.15%	0.14%
1985M11	0.52%	0.31%	0.24%		0.26%	0.38%	0.39%	0.14%	0.17%	0.14%
1985M12	0.57%	0.28%	0.24%		0.28%	0.35%	0.47%	0.17%	0.17%	0.17%
1986M01	0.52%	0.26%	0.23%		0.27%	0.33%	0.46%	0.17%	0.19%	0.17%
1986M02	0.48%	0.28%	0.27%		0.25%	0.31%	0.44%	0.15%	0.17%	0.15%
1986M03	0.52%	0.41%	0.25%		0.28%	0.29%	0.52%	0.19%	0.18%	0.19%
1986M04	0.46%	0.32%	0.48%		0.33%	0.31%	0.49%	0.19%	0.18%	0.19%
1986M05	0.62%	0.31%	0.53%		0.30%	0.30%	0.46%	0.18%	0.18%	0.18%
1986M06	0.58%	0.28%	0.49%		0.41%	0.29%	0.42%	0.18%	0.19%	0.18%
1986M07	0.53%	0.30%	0.41%		0.36%	0.29%	0.43%	0.16%	0.19%	0.16%
1986M08	0.68%	0.32%	0.40%		0.33%	0.28%	0.40%	0.20%	0.18%	0.20%
1986M09	0.75%	0.32%	0.67%		0.52%	0.29%	0.41%	0.23%	0.22%	0.23%
1986M10	0.66%	0.52%	0.75%		0.68%	0.32%	0.38%	0.32%	0.37%	0.32%
1986M11	0.58%	0.37%	0.66%		0.59%	0.33%	0.35%	0.29%	0.34%	0.29%
1986M12	0.51%	0.30%	0.55%		0.52%	0.32%	0.35%	0.25%	0.30%	0.26%
1987M01	0.54%	0.27%	0.62%		0.47%	0.39%	0.33%	0.24%	0.29%	0.24%
1987M02	0.48%	1.15%	0.73%		0.57%	0.60%	0.30%	0.40%	0.34%	0.40%
1987M03	0.46%	0.64%	0.61%		0.50%	0.54%	0.28%	0.34%	0.32%	0.35%
1987M04	0.45%	0.41%	0.56%		0.46%	0.89%	0.26%	0.30%	0.29%	0.30%
1987M05	0.40%	0.32%	0.50%		0.47%	0.98%	0.38%	0.26%	0.29%	0.27%
1987M06	0.41%	0.34%	0.44%		0.41%	0.86%	0.37%	0.23%	0.26%	0.23%

1987M07	0.36%	0.30%	0.40%		0.37%	0.94%	0.35%	0.22%	0.24%	0.22%
1987M08	0.37%	0.36%	0.35%		0.35%	0.84%	0.32%	0.21%	0.22%	0.21%
1987M09	0.38%	0.30%	0.38%		0.31%	0.73%	0.29%	0.19%	0.22%	0.19%
1987M10	0.36%	0.30%	0.39%		0.48%	0.64%	0.29%	0.18%	0.19%	0.19%
1987M11	0.47%	0.98%	0.40%		0.53%	0.89%	0.42%	0.83%	0.25%	0.84%
1987M12	0.42%	0.56%	0.35%		0.47%	0.78%	0.40%	0.86%	0.27%	0.87%
1988M01	0.41%	0.60%	0.32%		0.45%	0.68%	0.36%	0.74%	0.24%	0.75%
1988M02	0.51%	0.48%	0.28%		0.40%	0.66%	0.33%	0.62%	0.33%	0.64%
1988M03	0.57%	0.46%	0.25%		0.37%	0.59%	0.32%	0.53%	0.30%	0.54%
1988M04	0.50%	0.34%	0.24%		0.36%	0.61%	0.30%	0.49%	0.32%	0.50%
1988M05	0.45%	0.30%	0.22%		0.32%	0.54%	0.27%	0.41%	0.28%	0.42%
1988M06	0.41%	0.31%	0.20%		0.29%	0.49%	0.27%	0.36%	0.26%	0.36%
1988M07	0.37%	0.28%	0.21%		0.27%	0.48%	0.27%	0.31%	0.24%	0.32%
1988M08	0.36%	0.32%	0.20%		0.27%	0.48%	0.25%	0.28%	0.21%	0.28%
1988M09	0.38%	0.28%	0.19%		0.25%	0.46%	0.24%	0.27%	0.20%	0.28%
1988M10	0.37%	0.45%	0.18%		0.24%	0.41%	0.25%	0.24%	0.19%	0.25%
1988M11	0.34%	0.38%	0.17%		0.23%	0.40%	0.24%	0.21%	0.17%	0.22%
1988M12	0.33%	0.31%	0.17%		0.22%	0.45%	0.24%	0.20%	0.16%	0.20%
1989M01	0.30%	0.37%	0.17%		0.22%	0.47%	0.22%	0.18%	0.14%	0.18%
1989M02	0.32%	0.31%	0.17%		0.20%	0.44%	0.24%	0.20%	0.15%	0.20%
1989M03	0.29%	0.28%	0.24%		0.19%	0.40%	0.22%	0.20%	0.15%	0.20%
1989M04	0.26%	0.30%	0.22%		0.19%	0.37%	0.22%	0.17%	0.14%	0.18%
1989M05	0.24%	0.28%	0.31%		0.18%	0.36%	0.20%	0.17%	0.16%	0.18%
1989M06	0.22%	0.50%	0.43%		0.19%	0.35%	0.19%	0.17%	0.17%	0.17%
1989M07	0.21%	0.36%	0.38%		0.22%	0.46%	0.18%	0.15%	0.15%	0.15%
1989M08	0.23%	0.30%	0.33%		0.24%	0.47%	0.18%	0.21%	0.19%	0.22%
1989M09	0.21%	0.29%	0.34%		0.24%	0.42%	0.18%	0.19%	0.17%	0.19%
1989M10	0.20%	0.28%	0.31%		0.22%	0.39%	0.18%	0.17%	0.16%	0.17%
1989M11	0.20%	0.26%	0.28%		0.24%	0.38%	0.18%	0.17%	0.14%	0.17%
1989M12	0.19%	0.31%	0.25%		0.23%	0.36%	0.20%	0.15%	0.14%	0.15%
1990M01	0.23%	0.28%	0.25%		0.21%	0.34%	0.19%	0.14%	0.17%	0.14%
1990M02	0.21%	0.56%	0.23%		0.42%	0.34%	0.21%	0.21%	0.24%	0.20%
1990M03	0.20%	0.38%	0.21%		0.39%	0.32%	0.21%	0.18%	0.22%	0.18%
1990M04	0.19%	0.32%	0.20%		0.35%	0.38%	0.25%	0.16%	0.20%	0.16%
1990M05	0.23%	0.32%	0.19%		0.31%	0.40%	0.25%	0.16%	0.20%	0.16%
1990M06	0.22%	0.31%	0.18%		0.28%	0.38%	0.24%	0.24%	0.22%	0.24%
1990M07	0.22%	0.29%	0.25%		0.33%	0.41%	0.23%	0.21%	0.21%	0.21%
1990M08	0.21%	0.30%	0.34%		0.30%	0.38%	0.22%	0.19%	0.19%	0.19%
1990M09	0.22%	0.35%	0.32%		0.28%	0.40%	0.21%	0.31%	0.26%	0.31%
1990M10	0.26%	0.36%	0.29%		0.26%	0.43%	0.19%	0.32%	0.24%	0.32%
1990M11	0.25%	0.32%	0.27%		0.31%	0.61%	0.20%	0.28%	0.24%	0.28%
1990M12	0.23%	0.29%	0.28%		0.28%	0.77%	0.21%	0.27%	0.22%	0.27%
1991M01	0.22%	0.27%	0.26%		0.26%	0.71%	0.19%	0.24%	0.20%	0.24%
1991M02	0.25%	0.29%	0.23%		0.24%	0.66%	0.19%	0.22%	0.19%	0.22%
1991M03	0.34%	0.28%	0.23%		0.23%	0.64%	0.18%	0.24%	0.18%	0.24%
1991M04	0.31%	0.28%	0.21%		0.21%	0.61%	0.19%	0.21%	0.16%	0.21%
1991M05	0.30%	0.32%	0.21%		0.22%	0.54%	0.19%	0.18%	0.16%	0.18%
1991M06	0.31%	0.29%	0.20%		0.21%	1.36%	0.21%	0.18%	0.15%	0.18%
1991M07	0.29%	0.30%	0.28%		0.22%	1.17%	0.20%	0.20%	0.14%	0.20%
1991M08	0.26%	0.28%	0.33%		0.23%	1.01%	0.19%	0.19%	0.13%	0.19%
1991M09	0.35%	0.27%	0.29%		0.23%	1.10%	0.18%	0.17%	0.12%	0.17%
1991M10	0.34%	0.32%	0.26%		0.23%	0.96%	0.21%	0.16%	0.11%	0.16%
1991M11	0.34%	0.31%	0.32%		0.22%	0.87%	0.20%	0.14%	0.10%	0.15%

1991M12	0.31%	0.32%	0.32%		0.21%	0.76%	0.19%	0.16%	0.10%	0.17%
1992M01	0.38%	0.28%	0.34%		0.20%	0.73%	0.18%	0.28%	0.14%	0.28%
1992M02	0.47%	0.39%	0.35%		0.20%	0.78%	0.25%	0.26%	0.17%	0.26%
1992M03	0.42%	0.32%	0.30%		0.19%	0.69%	0.24%	0.22%	0.17%	0.23%
1992M04	0.39%	0.28%	0.29%		0.19%	0.70%	0.26%	0.21%	0.16%	0.21%
1992M05	0.35%	0.28%	0.34%		0.21%	0.62%	0.24%	0.19%	0.18%	0.19%
1992M06	0.32%	0.27%	0.40%		0.20%	0.57%	0.24%	0.17%	0.16%	0.17%
1992M07	0.30%	0.26%	0.34%		0.19%	0.52%	0.23%	0.16%	0.14%	0.16%
1992M08	0.28%	0.52%	0.31%		0.21%	0.49%	0.27%	0.15%	0.18%	0.15%
1992M09	0.41%	0.36%	0.28%		0.20%	0.46%	0.26%	0.15%	0.17%	0.15%
1992M10	0.38%	0.30%	0.25%		0.19%	0.42%	0.28%	0.14%	0.15%	0.14%
1992M11	0.34%	0.29%	0.28%		0.19%	0.50%	0.26%	0.12%	0.14%	0.12%
1992M12	0.33%	0.29%	0.28%		0.19%	0.50%	0.31%	0.12%	0.13%	0.12%
1993M01	0.29%	0.39%	0.26%		0.19%	0.47%	0.28%	0.11%	0.13%	0.11%
1993M02	0.27%	0.32%	0.26%		0.18%	0.43%	0.27%	0.10%	0.12%	0.10%
1993M03	0.31%	0.32%	0.29%		0.22%	0.48%	0.25%	0.10%	0.15%	0.10%
1993M04	0.28%	0.28%	0.28%		0.22%	0.55%	0.25%	0.09%	0.14%	0.09%
1993M05	0.31%	0.28%	0.26%		0.25%	0.50%	0.23%	0.10%	0.13%	0.10%
1993M06	0.30%	0.26%	0.30%		0.23%	0.45%	0.22%	0.10%	0.12%	0.10%
1993M07	0.27%	0.37%	0.27%		0.22%	0.44%	0.21%	0.10%	0.13%	0.09%
1993M08	0.26%	0.31%	0.30%		0.23%	0.41%	0.20%	0.09%	0.12%	0.09%
1993M09	0.25%	0.28%	0.27%		0.24%	0.37%	0.19%	0.10%	0.13%	0.10%
1993M10	0.23%	0.28%	0.24%		0.23%	0.35%	0.18%	0.10%	0.12%	0.09%
1993M11	0.21%	0.36%	0.22%		0.23%	0.33%	0.18%	0.09%	0.11%	0.09%
1993M12	0.35%	0.40%	0.23%		0.26%	0.35%	0.17%	0.09%	0.14%	0.09%
1994M01	0.31%	0.31%	0.22%		0.24%	0.34%	0.16%	0.09%	0.13%	0.09%
1994M02	0.30%	0.28%	0.24%		0.22%	0.49%	0.16%	0.09%	0.12%	0.09%
1994M03	0.27%	0.28%	0.22%		0.27%	0.46%	0.17%	0.10%	0.15%	0.10%
1994M04	0.37%	0.32%	0.26%		0.25%	0.55%	0.20%	0.13%	0.16%	0.13%
1994M05	0.37%	0.28%	0.23%		0.27%	0.53%	0.23%	0.12%	0.14%	0.12%
1994M06	0.35%	0.30%	0.32%		0.30%	0.51%	0.27%	0.11%	0.15%	0.11%
1994M07	0.31%	0.40%	0.30%		0.33%	0.46%	0.25%	0.12%	0.13%	0.12%
1994M08	0.31%	0.31%	0.27%		0.29%	0.43%	0.23%	0.12%	0.13%	0.11%
1994M09	0.30%	0.28%	0.24%		0.28%	0.39%	0.22%	0.12%	0.12%	0.12%
1994M10	0.28%	0.32%	0.24%		0.34%	0.37%	0.23%	0.13%	0.12%	0.12%
1994M11	0.34%	0.28%	0.26%		0.31%	0.35%	0.22%	0.12%	0.11%	0.12%
1994M12	0.35%	0.30%	0.27%		0.30%	0.44%	0.20%	0.14%	0.11%	0.14%
1995M01	0.32%	0.27%	0.24%		0.35%	0.47%	0.21%	0.12%	0.10%	0.12%
1995M02	0.32%	0.27%	0.24%		0.35%	0.42%	0.20%	0.12%	0.14%	0.12%
1995M03	0.41%	0.27%	0.22%		0.32%	0.43%	0.19%	0.12%	0.13%	0.12%
1995M04	0.37%	0.28%	0.21%		0.29%	0.41%	0.17%	0.12%	0.12%	0.11%
1995M05	0.33%	0.26%	0.19%		0.26%	0.38%	0.18%	0.11%	0.12%	0.11%
1995M06	0.30%	0.26%	0.22%		0.26%	0.36%	0.17%	0.11%	0.12%	0.11%
1995M07	0.29%	0.26%	0.23%		0.31%	0.34%	0.18%	0.11%	0.11%	0.11%
1995M08	0.27%	0.26%	0.21%		0.34%	0.32%	0.17%	0.11%	0.10%	0.11%
1995M09	0.24%	0.26%	0.20%		0.30%	0.44%	0.16%	0.10%	0.10%	0.10%
1995M10	0.24%	0.40%	0.19%		0.34%	0.44%	0.17%	0.11%	0.12%	0.11%
1995M11	0.26%	0.36%	0.20%		0.32%	0.42%	0.16%	0.11%	0.11%	0.10%
1995M12	0.44%	0.51%	0.20%		0.30%	0.71%	0.16%	0.11%	0.11%	0.11%
1996M01	0.47%	0.49%	0.20%		0.37%	0.64%	0.15%	0.11%	0.14%	0.10%
1996M02	0.51%	0.58%	0.19%		0.37%	0.59%	0.16%	0.11%	0.13%	0.11%
1996M03	0.49%	0.44%	0.18%		0.33%	0.56%	0.20%	0.10%	0.14%	0.10%
1996M04	0.43%	0.33%	0.20%		0.30%	0.53%	0.26%	0.10%	0.14%	0.09%

1996M05	0.42%	0.30%	0.20%		0.35%	0.50%	0.25%	0.09%	0.13%	0.09%
1996M06	0.38%	0.31%	0.21%		0.33%	0.46%	0.24%	0.09%	0.12%	0.09%
1996M07	1.05%	0.32%	0.20%		0.34%	0.47%	0.23%	0.09%	0.12%	0.08%
1996M08	2.10%	0.33%	0.18%		0.35%	0.43%	0.21%	0.12%	0.16%	0.12%
1996M09	1.81%	0.29%	0.18%		0.51%	0.48%	0.20%	0.11%	0.15%	0.11%
1996M10	1.56%	0.28%	0.19%		0.45%	0.45%	0.21%	0.13%	0.14%	0.13%
1996M11	1.35%	0.27%	0.32%		0.40%	0.47%	0.21%	0.12%	0.14%	0.12%
1996M12	1.17%	0.34%	0.29%		0.35%	0.43%	0.20%	0.17%	0.13%	0.17%
1997M01	1.05%	0.29%	0.29%		0.32%	0.39%	0.19%	0.16%	0.12%	0.16%
1997M02	0.97%	0.27%	0.28%		0.30%	0.37%	0.17%	0.18%	0.11%	0.18%
1997M03	0.88%	0.31%	0.27%		0.36%	0.38%	0.18%	0.16%	0.11%	0.16%
1997M04	0.77%	0.28%	0.24%		0.32%	0.39%	0.25%	0.18%	0.11%	0.18%
1997M05	0.86%	0.26%	0.22%		0.30%	0.39%	0.26%	0.19%	0.11%	0.19%
1997M06	0.75%	0.35%	0.20%		0.29%	0.37%	0.25%	0.20%	0.11%	0.20%
1997M07	0.65%	0.29%	0.24%		0.26%	0.54%	0.23%	0.19%	0.11%	0.19%
1997M08	0.57%	0.27%	0.22%		0.25%	0.54%	0.27%	0.23%	0.10%	0.23%
1997M09	0.67%	0.26%	0.23%		0.25%	0.53%	0.26%	0.26%	0.10%	0.26%
1997M10	0.72%	0.26%	0.22%		0.27%	0.48%	0.24%	0.24%	0.11%	0.25%
1997M11	0.62%	0.26%	0.22%		0.25%	0.46%	0.22%	0.24%	0.10%	0.24%
1997M12	0.57%	0.34%	0.41%		0.23%	0.42%	0.21%	0.22%	0.14%	0.23%
1998M01	0.66%	0.75%	0.47%		0.74%	0.38%	0.28%	0.20%	0.17%	0.20%
1998M02	0.64%	0.83%	0.66%		0.64%	0.38%	0.39%	0.17%	0.18%	0.18%
1998M03	0.56%	0.49%	0.57%		0.55%	0.53%	0.36%	0.20%	0.17%	0.20%
1998M04	0.49%	0.45%	0.48%		0.48%	0.47%	0.33%	0.20%	0.19%	0.20%
1998M05	0.44%	0.39%	0.42%		0.51%	0.51%	0.31%	0.18%	0.18%	0.18%
1998M06	0.41%	0.38%	0.36%		0.45%	0.48%	0.28%	0.17%	0.16%	0.17%
1998M07	0.37%	0.31%	0.31%		0.39%	0.54%	0.26%	0.16%	0.15%	0.16%
1998M08	0.36%	0.33%	0.32%		0.42%	0.51%	0.27%	0.15%	0.18%	0.15%
1998M09	0.33%	0.30%	0.36%		0.57%	0.90%	0.26%	0.44%	0.16%	0.44%
1998M10	0.30%	0.34%	0.51%		0.71%	0.89%	0.25%	0.40%	0.21%	0.40%
1998M11	0.28%	0.38%	0.43%		0.61%	0.95%	0.33%	0.39%	0.19%	0.40%
1998M12	0.26%	0.31%	0.37%		0.53%	0.82%	0.31%	0.36%	0.17%	0.37%
1999M01	0.26%	0.28%	0.44%		0.46%	0.82%	0.34%	0.33%	0.16%	0.34%
1999M02	0.31%	0.43%	0.48%		0.42%	0.72%	0.47%	0.29%	0.18%	0.30%
1999M03	0.70%	0.38%	0.41%		0.41%	0.70%	0.43%	0.28%	0.18%	0.28%
1999M04	0.62%	0.31%	0.53%		0.50%	0.65%	0.46%	0.25%	0.17%	0.25%
1999M05	0.55%	0.29%	0.46%		0.54%	0.58%	0.44%	0.23%	0.22%	0.23%
1999M06	0.48%	0.27%	0.42%		0.75%	0.52%	0.47%	0.21%	0.23%	0.22%
1999M07	0.44%	0.26%	0.36%		0.64%	0.46%	0.46%	0.21%	0.22%	0.22%
1999M08	0.39%	0.30%	0.43%		0.57%	0.42%	0.42%	0.21%	0.20%	0.21%
1999M09	0.35%	0.29%	0.42%		0.54%	0.40%	0.45%	0.19%	0.18%	0.19%
1999M10	0.34%	0.29%	0.36%		0.54%	0.38%	0.44%	0.19%	0.20%	0.19%
1999M11	0.36%	0.27%	0.31%		0.47%	0.55%	0.45%	0.20%	0.18%	0.20%
1999M12	0.33%	0.27%	0.29%		0.57%	0.49%	0.41%	0.18%	0.24%	0.18%
2000M01	0.39%	0.28%	0.50%		0.50%	0.45%	0.38%	0.19%	0.22%	0.19%
2000M02	0.62%	0.30%	0.47%		0.44%	0.65%	0.53%	0.21%	0.30%	0.22%
2000M03	0.55%	0.29%	0.45%		0.38%	0.60%	0.50%	0.20%	0.32%	0.20%
2000M04	0.52%	0.74%	0.38%		0.36%	0.54%	0.46%	0.27%	0.29%	0.27%
2000M05	0.49%	0.58%	0.55%		0.36%	0.48%	0.42%	0.26%	0.31%	0.26%
2000M06	0.69%	0.45%	0.47%		0.34%	0.44%	0.39%	0.24%	0.29%	0.24%
2000M07	0.65%	0.34%	0.40%		0.30%	0.49%	0.35%	0.21%	0.31%	0.21%
2000M08	0.84%	0.32%	0.36%		0.29%	0.44%	0.33%	0.20%	0.31%	0.20%
2000M09	0.73%	0.28%	0.31%		0.26%	0.42%	0.36%	0.21%	0.44%	0.21%

2000M10	0.64%	0.27%	0.28%		0.33%	0.48%	0.33%	0.23%	0.46%	0.24%
2000M11	0.68%	0.28%	0.26%		0.30%	0.43%	0.31%	0.21%	0.43%	0.21%
2000M12	0.66%	0.26%	0.24%		0.27%	0.43%	0.29%	0.29%	0.39%	0.29%
2001M01	0.60%	0.37%	0.33%		0.25%	0.51%	0.28%	0.25%	0.42%	0.25%
2001M02	0.53%	0.77%	0.40%		0.24%	0.46%	0.35%	0.22%	0.50%	0.23%
2001M03	0.50%	0.47%	0.34%		0.29%	0.43%	0.45%	0.33%	0.45%	0.34%
2001M04	0.44%	0.45%	0.31%		0.33%	0.39%	0.41%	0.36%	0.40%	0.37%
2001M05	0.43%	0.36%	0.34%		0.32%	0.36%	0.38%	0.36%	0.38%	0.36%
2001M06	0.39%	0.31%	0.35%		0.29%	0.42%	0.35%	0.31%	0.36%	0.31%
2001M07	0.36%	0.28%	0.32%		0.28%	0.39%	0.36%	0.28%	0.41%	0.29%
2001M08	0.70%	0.31%	0.29%		0.25%	0.36%	0.53%	0.25%	0.40%	0.26%
2001M09	0.66%	0.29%	0.27%		0.25%	0.37%	0.54%	0.29%	0.37%	0.30%
2001M10	0.58%	0.27%	0.31%		0.27%	0.38%	0.49%	0.36%	0.50%	0.37%
2001M11	0.51%	0.26%	0.28%		0.30%	0.37%	0.48%	0.31%	0.44%	0.32%
2001M12	0.54%	0.28%	0.25%		0.28%	0.34%	0.44%	0.32%	0.44%	0.32%
2002M01	0.53%	0.26%	0.24%		0.26%	0.37%	0.41%	0.28%	0.39%	0.28%
2002M02	0.47%	0.29%	0.23%		0.26%	0.37%	0.39%	0.25%	0.40%	0.25%
2002M03	0.45%	0.27%	0.21%		0.27%	0.35%	0.35%	0.23%	0.37%	0.23%
2002M04	0.42%	0.26%	0.23%		0.26%	0.37%	0.33%	0.21%	0.46%	0.21%
2002M05	0.37%	0.30%	0.22%		0.40%	0.34%	0.31%	0.25%	0.41%	0.25%
2002M06	0.34%	0.34%	0.21%		0.36%	0.33%	0.29%	0.22%	0.48%	0.23%
2002M07	0.31%	0.30%	0.20%		0.34%	0.31%	0.28%	0.28%	0.50%	0.29%
2002M08	0.40%	0.27%	0.19%		0.36%	0.44%	0.27%	0.35%	0.69%	0.36%
2002M09	0.36%	0.27%	0.18%		0.34%	0.41%	0.27%	0.30%	0.61%	0.31%
2002M10	0.32%	0.32%	0.19%		0.30%	0.39%	0.26%	0.45%	0.76%	0.46%
2002M11	0.29%	0.33%	0.19%		0.29%	0.36%	0.24%	0.45%	0.68%	0.45%
2002M12	0.26%	0.29%	0.48%		0.26%	0.34%	0.22%	0.40%	0.60%	0.41%
2003M01	0.25%	0.27%	0.43%		0.25%	0.33%	0.21%	0.41%	0.53%	0.42%
2003M02	0.26%	0.26%	0.38%		0.24%	0.38%	0.20%	0.38%	0.49%	0.38%
2003M03	0.26%	0.25%	0.39%		0.23%	0.39%	0.20%	0.33%	0.47%	0.34%
2003M04	0.24%	0.26%	0.33%		0.21%	0.36%	0.20%	0.29%	0.43%	0.29%
2003M05	0.26%	0.29%	0.31%		0.32%	0.33%	0.19%	0.31%	0.44%	0.31%
2003M06	0.32%	0.28%	0.33%		0.33%	0.32%	0.23%	0.29%	0.48%	0.29%
2003M07	0.29%	0.26%	0.30%		0.30%	0.30%	0.23%	0.25%	0.42%	0.25%
2003M08	0.27%	0.27%	0.29%		0.27%	0.29%	0.21%	0.22%	0.44%	0.22%
2003M09	0.25%	0.27%	0.26%		0.25%	0.31%	0.20%	0.19%	0.39%	0.19%
2003M10	0.23%	0.26%	0.23%		0.23%	0.30%	0.18%	0.18%	0.35%	0.18%
2003M11	0.22%	0.29%	0.21%		0.22%	0.28%	0.19%	0.18%	0.31%	0.19%
2003M12	0.20%	0.27%	0.22%		0.22%	0.27%	0.18%	0.16%	0.28%	0.16%
2004M01	0.19%	0.26%	0.20%		0.22%	0.26%	0.17%	0.17%	0.29%	0.17%
2004M02	0.20%	0.26%	0.19%		0.21%	0.27%	0.18%	0.15%	0.26%	0.15%
2004M03	0.20%	0.25%	0.19%		0.20%	0.26%	0.18%	0.14%	0.23%	0.14%
2004M04	0.20%	0.27%	0.19%		0.20%	0.25%	0.17%	0.13%	0.20%	0.13%
2004M05	0.21%	0.26%	0.22%		0.19%	0.26%	0.24%	0.13%	0.20%	0.13%
2004M06	0.19%	0.26%	0.21%		0.18%	0.25%	0.23%	0.12%	0.18%	0.12%
2004M07	0.18%	0.32%	0.21%		0.21%	0.28%	0.21%	0.11%	0.17%	0.11%
2004M08	0.18%	0.30%	0.21%		0.20%	0.27%	0.20%	0.12%	0.15%	0.12%
2004M09	0.17%	0.27%	0.22%		0.20%	0.26%	0.23%	0.11%	0.15%	0.11%
2004M10	0.16%	0.26%	0.21%		0.23%	0.25%	0.22%	0.11%	0.13%	0.10%
2004M11	0.15%	0.26%	0.19%		0.22%	0.25%	0.21%	0.10%	0.14%	0.10%
2004M12	0.17%	0.30%	0.23%		0.28%	0.26%	0.23%	0.11%	0.14%	0.11%
2005M01	0.16%	0.27%	0.21%		0.26%	0.25%	0.22%	0.11%	0.13%	0.11%
2005M02	0.16%	0.26%	0.20%		0.24%	0.25%	0.21%	0.12%	0.12%	0.11%

2005M03	0.15%	0.26%	0.24%		0.25%	0.24%	0.21%	0.11%	0.11%	0.11%
2005M04	0.15%	0.26%	0.22%		0.23%	0.25%	0.23%	0.11%	0.10%	0.11%
2005M05	0.15%	0.26%	0.21%		0.24%	0.25%	0.26%	0.11%	0.10%	0.11%
2005M06	0.22%	0.27%	0.19%		0.24%	0.25%	0.31%	0.11%	0.10%	0.11%
2005M07	0.20%	0.36%	0.21%		0.29%	0.24%	0.33%	0.10%	0.12%	0.10%
2005M08	0.19%	0.32%	0.20%		0.29%	0.25%	0.31%	0.11%	0.11%	0.11%
2005M09	0.18%	0.28%	0.22%		0.27%	0.25%	0.28%	0.11%	0.10%	0.10%
2005M10	0.20%	0.28%	0.21%		0.25%	0.25%	0.26%	0.10%	0.11%	0.10%
2005M11	0.25%	0.36%	0.25%		0.26%	0.24%	0.31%	0.10%	0.15%	0.10%
2005M12	0.23%	0.31%	0.23%		0.24%	0.24%	0.29%	0.11%	0.14%	0.10%
2006M01	0.21%	0.28%	0.21%		0.23%	0.24%	0.27%	0.10%	0.12%	0.10%
2006M02	0.20%	0.38%	0.22%		0.21%	0.25%	0.36%	0.10%	0.12%	0.10%
2006M03	0.18%	0.31%	0.23%		0.22%	0.25%	0.34%	0.09%	0.11%	0.09%
2006M04	0.17%	0.28%	0.22%		0.23%	0.25%	0.32%	0.09%	0.13%	0.09%
2006M05	0.16%	0.28%	0.21%		0.23%	0.25%	0.29%	0.09%	0.12%	0.08%
2006M06	0.16%	0.26%	0.19%		0.21%	0.26%	0.27%	0.10%	0.11%	0.10%
2006M07	0.16%	0.29%	0.22%		0.21%	0.30%	0.26%	0.09%	0.10%	0.09%
2006M08	0.16%	0.33%	0.21%		0.26%	0.30%	0.25%	0.09%	0.12%	0.09%
2006M09	0.15%	0.29%	0.20%		0.25%	0.29%	0.24%	0.09%	0.11%	0.09%
2006M10	0.14%	0.27%	0.19%		0.25%	0.28%	0.22%	0.09%	0.11%	0.09%
2006M11	0.19%	0.30%	0.22%		0.24%	0.31%	0.31%	0.09%	0.13%	0.09%
2006M12	0.23%	0.27%	0.20%		0.28%	0.31%	0.29%	0.09%	0.12%	0.09%
2007M01	0.22%	0.34%	0.19%		0.26%	0.30%	0.28%	0.09%	0.11%	0.08%
2007M02	0.21%	0.34%	0.20%		0.24%	0.28%	0.32%	0.09%	0.10%	0.08%
2007M03	0.20%	0.34%	0.27%		0.24%	0.30%	0.31%	0.09%	0.11%	0.09%
2007M04	0.19%	0.29%	0.25%		0.34%	0.30%	0.29%	0.09%	0.12%	0.08%
2007M05	0.17%	0.35%	0.39%		0.31%	0.30%	0.26%	0.10%	0.12%	0.10%
2007M06	0.17%	0.29%	0.34%		0.29%	0.28%	0.25%	0.11%	0.11%	0.10%
2007M07	0.23%	0.37%	0.38%		0.36%	0.40%	0.23%	0.11%	0.14%	0.10%
2007M08	0.27%	0.47%	0.46%		0.40%	0.45%	0.28%	0.12%	0.15%	0.11%
2007M09	0.25%	0.36%	0.53%		0.36%	0.45%	0.35%	0.11%	0.14%	0.11%
2007M10	0.23%	0.30%	0.45%		0.33%	0.42%	0.32%	0.11%	0.13%	0.11%
2007M11	0.21%	0.28%	0.41%		0.36%	0.40%	0.34%	0.11%	0.16%	0.10%
2007M12	0.24%	0.27%	0.36%		0.33%	0.38%	0.31%	0.13%	0.15%	0.13%
2008M01	0.26%	0.26%	0.31%		0.30%	0.35%	0.29%	0.12%	0.13%	0.12%
2008M02	0.24%	0.36%	0.28%		0.29%	0.35%	0.27%	0.17%	0.18%	0.17%
2008M03	0.31%	0.32%	0.43%		0.28%	0.43%	0.25%	0.18%	0.20%	0.18%
2008M04	0.29%	0.28%	0.37%		0.26%	0.45%	0.25%	0.16%	0.18%	0.16%
2008M05	0.32%	0.27%	0.34%		0.25%	0.41%	0.26%	0.16%	0.19%	0.16%
2008M06	0.29%	0.29%	0.29%		0.25%	0.44%	0.27%	0.15%	0.17%	0.15%
2008M07	0.26%	0.28%	0.26%		0.24%	0.43%	0.25%	0.24%	0.16%	0.24%
2008M08	0.27%	0.29%	0.24%		0.23%	0.40%	0.25%	0.22%	0.20%	0.22%
2008M09	0.26%	0.32%	0.28%		0.24%	0.39%	0.26%	0.19%	0.18%	0.19%
2008M10	0.26%	0.28%	0.29%		0.23%	0.36%	0.30%	0.29%	0.33%	0.30%
2008M11	0.34%	0.28%	0.26%		0.24%	0.53%	0.33%	0.67%	0.47%	0.68%
2008M12	0.31%	0.36%	0.25%		0.45%	0.47%	0.30%	0.68%	0.42%	0.69%
2009M01	0.32%	0.31%	0.41%		0.40%	0.44%	0.39%	0.57%	0.38%	0.58%
2009M02	0.30%	0.28%	0.36%		0.41%	0.40%	0.37%	0.62%	0.33%	0.64%
2009M03	0.39%	0.63%	0.35%		0.39%	0.90%	0.51%	0.74%	0.50%	0.75%
2009M04	0.37%	0.44%	0.34%		0.35%	0.82%	0.47%	0.67%	0.44%	0.68%
2009M05	0.37%	0.37%	0.34%		0.32%	0.74%	0.56%	0.63%	0.39%	0.64%
2009M06	0.34%	0.30%	0.30%		0.31%	0.66%	0.63%	0.54%	0.35%	0.55%
2009M07	0.31%	0.53%	0.28%		0.31%	0.61%	0.62%	0.46%	0.33%	0.47%

2009M08	0.34%	0.38%	0.25%		0.31%	0.60%	0.56%	0.43%	0.30%	0.45%
2009M09	0.31%	0.38%	0.28%		0.33%	0.53%	0.52%	0.37%	0.27%	0.38%
2009M10	0.28%	0.31%	0.25%		0.30%	0.49%	0.48%	0.33%	0.24%	0.34%
2009M11	0.26%	0.31%	0.23%		0.28%	0.45%	0.46%	0.29%	0.23%	0.30%
2009M12	0.24%	0.28%	0.21%		0.26%	0.43%	0.42%	0.28%	0.22%	0.29%
2010M01	0.26%	0.34%	0.22%		0.28%	0.45%	0.45%	0.25%	0.22%	0.25%
2010M02	0.29%	0.31%	0.22%		0.26%	0.42%	0.44%	0.24%	0.23%	0.25%
2010M03	0.26%	0.28%	0.20%		0.25%	0.40%	0.40%	0.22%	0.21%	0.22%
2010M04	0.25%	0.28%	0.22%		0.26%	0.38%	0.37%	0.22%	0.20%	0.23%
2010M05	0.24%	0.27%	0.21%		0.30%	0.36%	0.34%	0.19%	0.18%	0.20%
2010M06	0.29%	0.36%	0.27%		0.28%	0.35%	0.33%	0.27%	0.21%	0.28%
2010M07	0.26%	0.30%	0.25%		0.26%	0.33%	0.30%	0.29%	0.19%	0.29%
2010M08	0.28%	0.32%	0.33%		0.32%	0.37%	0.30%	0.29%	0.22%	0.30%
2010M09	0.26%	0.29%	0.32%		0.29%	0.35%	0.30%	0.30%	0.20%	0.30%
2010M10	0.24%	0.33%	0.30%		0.29%	0.36%	0.29%	0.33%	0.18%	0.33%
2010M11	0.22%	0.29%	0.28%		0.27%	0.34%	0.27%	0.29%	0.17%	0.30%
2010M12	0.21%	0.33%	0.25%		0.25%	0.32%	0.25%	0.26%	0.17%	0.26%
2011M01	0.20%	0.29%	0.27%		0.24%	0.32%	0.24%	0.26%	0.16%	0.26%
2011M02	0.20%	0.29%	0.26%		0.23%	0.30%	0.24%	0.23%	0.14%	0.23%
2011M03	0.21%	0.27%	0.26%		0.24%	0.30%	0.22%	0.21%	0.13%	0.21%
2011M04	0.19%	0.27%	0.24%		0.23%	0.29%	0.21%	0.18%	0.12%	0.18%
2011M05	0.18%	0.26%	0.22%		0.22%	0.28%	0.19%	0.17%	0.12%	0.17%
2011M06	0.19%	0.30%	0.21%		0.22%	0.27%	0.18%	0.16%	0.11%	0.16%
2011M07	0.18%	0.29%	0.20%		0.21%	0.26%	0.17%	0.15%	0.10%	0.15%
2011M08	0.16%	0.29%	0.19%		0.27%	0.27%	0.17%	0.14%	0.10%	0.14%
2011M09	0.16%	0.37%	0.18%		0.25%	0.26%	0.19%	0.18%	0.09%	0.18%
2011M10	0.16%	0.50%	0.18%		0.25%	0.26%	0.18%	0.24%	0.09%	0.24%
2011M11	0.18%	0.53%	0.22%		0.41%	0.32%	0.18%	0.33%	0.09%	0.34%
2011M12	0.17%	0.37%	0.21%		0.37%	0.31%	0.17%	0.29%	0.09%	0.29%
2012M01	0.17%	0.33%	0.19%		0.33%	0.31%	0.16%	0.25%	0.09%	0.25%
2012M02	0.17%	0.32%	0.18%		0.32%	0.30%	0.15%	0.23%	0.10%	0.23%
2012M03	0.19%	0.30%	0.20%		0.33%	0.29%	0.15%	0.22%	0.09%	0.22%
2012M04	0.18%	0.31%	0.19%		0.31%	0.27%	0.16%	0.20%	0.09%	0.20%
2012M05	0.18%	0.31%	0.18%		0.29%	0.27%	0.15%	0.18%	0.08%	0.18%
2012M06	0.17%	0.30%	0.17%		0.27%	0.26%	0.15%	0.22%	0.08%	0.22%
2012M07	0.19%	0.31%	0.17%		0.28%	0.26%	0.17%	0.20%	0.09%	0.21%
2012M08	0.18%	0.31%	0.17%		0.27%	0.26%	0.18%	0.18%	0.09%	0.18%
2012M09	0.17%	0.30%	0.17%		0.27%	0.26%	0.17%	0.16%	0.11%	0.16%
2012M10	0.17%	0.29%	0.16%		0.28%	0.26%	0.16%	0.15%	0.10%	0.15%
2012M11	0.16%	0.29%	0.19%		0.29%	0.26%	0.16%	0.14%	0.09%	0.14%
2012M12	0.15%	0.45%	0.23%		0.26%	0.26%	0.16%	0.13%	0.12%	0.13%
2013M01	0.15%	0.35%	0.21%		0.24%	0.25%	0.17%	0.12%	0.11%	0.12%
2013M02	0.18%	0.35%	0.21%		0.29%	0.27%	0.17%	0.14%	0.11%	0.14%
2013M03	0.17%	0.34%	0.19%		0.26%	0.26%	0.16%	0.13%	0.11%	0.12%
2013M04	0.30%	0.29%	0.20%		0.24%	0.27%	0.18%	0.13%	0.13%	0.13%
2013M05	0.28%	0.31%	0.19%		0.35%	0.29%	0.24%	0.12%	0.15%	0.12%
2013M06	0.28%	0.32%	0.21%		0.36%	0.32%	0.22%	0.11%	0.23%	0.11%
2013M07	0.27%	0.43%	0.19%		0.32%	0.30%	0.22%	0.11%	0.21%	0.11%
2013M08	0.29%	0.41%	0.20%		0.33%	0.31%	0.20%	0.13%	0.20%	0.13%
2013M09	0.35%	0.37%	0.25%		0.34%	0.33%	0.20%	0.13%	0.21%	0.13%
2013M10	0.34%	0.31%	0.23%		0.31%	0.34%	0.19%	0.13%	0.19%	0.13%
2013M11	0.31%	0.30%	0.23%		0.28%	0.37%	0.19%	0.14%	0.18%	0.14%
2013M12	0.28%	0.28%	0.22%		0.29%	0.35%	0.18%	0.13%	0.17%	0.13%

2014M01	0.25%	0.27%	0.20%		0.27%	0.35%	0.17%	0.13%	0.15%	0.12%
2014M02	0.26%	0.27%	0.20%	0.17%	0.28%	0.34%	0.16%	0.14%	0.14%	0.13%
2014M03	0.25%	0.27%	0.19%	0.18%	0.31%	0.32%	0.15%	0.14%	0.14%	0.14%
2014M04	0.23%	0.50%	0.19%	0.20%	0.28%	0.31%	0.15%	0.13%	0.14%	0.13%
2014M05	0.28%	0.36%	0.18%	0.20%	0.26%	0.29%	0.14%	0.12%	0.14%	0.12%
2014M06	0.25%	0.49%	0.17%	0.20%	0.24%	0.30%	0.14%	0.11%	0.13%	0.11%
2014M07	0.27%	0.37%	0.18%	0.21%	0.26%	0.29%	0.15%	0.11%	0.13%	0.11%
2014M08	0.36%	0.58%	0.25%	0.23%	0.41%	0.32%	0.15%	0.11%	0.18%	0.10%
2014M09	0.34%	0.39%	0.25%	0.23%	0.42%	0.33%	0.17%	0.11%	0.18%	0.11%
2014M10	0.35%	0.33%	0.30%	0.30%	0.45%	0.36%	0.19%	0.11%	0.17%	0.11%
2014M11	0.43%	0.74%	0.43%	0.36%	0.48%	0.65%	0.25%	0.11%	0.21%	0.10%
2014M12	0.38%	0.47%	0.37%	0.33%	0.44%	0.58%	0.23%	0.11%	0.19%	0.10%
2015M01	0.35%	0.40%	0.38%	0.32%	0.40%	0.54%	0.24%	0.10%	0.18%	0.10%
2015M02	0.31%	0.34%	0.32%	0.32%	0.36%	0.49%	0.22%	0.11%	0.17%	0.11%
2015M03	0.33%	0.30%	0.33%	0.33%	0.33%	0.49%	0.22%	0.14%	0.20%	0.13%
2015M04	0.31%	0.27%	0.29%	0.31%	0.32%	0.44%	0.21%	0.13%	0.18%	0.13%
2015M05	0.29%	0.27%	0.26%	0.30%	0.30%	0.44%	0.19%	0.12%	0.17%	0.12%
2015M06	0.26%	0.27%	0.26%	0.30%	3.29%	0.40%	0.19%	0.11%	0.15%	0.11%
2015M07	0.28%	0.41%	0.29%	0.30%	2.84%	0.38%	0.18%	0.11%	0.18%	0.11%
2015M08	0.30%	0.35%	0.27%	0.30%	2.39%	0.37%	0.18%	0.11%	0.19%	0.10%
2015M09	0.27%	0.31%	0.24%	0.30%	2.00%	0.35%	0.17%	0.16%	0.19%	0.15%
2015M10	0.28%	0.36%	0.23%	0.29%	1.66%	0.35%	0.17%	0.15%	0.18%	0.15%
2015M11	0.31%	0.34%	0.24%	0.31%	1.39%	0.35%	0.21%	0.21%	0.16%	0.21%
2015M12	0.28%	0.36%	0.22%	0.29%	1.45%	0.39%	0.20%	0.19%	0.15%	0.19%
2016M01	0.26%	0.48%	0.22%	0.27%	1.21%	0.37%	0.19%	0.17%	0.14%	0.17%
2016M02	0.32%	0.41%	0.21%	0.36%	1.03%	0.37%	0.22%	0.20%	0.15%	0.20%
2016M03	0.29%	0.33%	0.22%	0.33%	0.86%	0.36%	0.21%	0.18%	0.14%	0.18%
2016M04	0.30%	0.34%	0.27%	0.31%	0.88%	0.38%	0.21%	0.20%	0.19%	0.20%
2016M05	0.28%	0.31%	0.26%	0.32%	0.76%	0.36%	0.23%	0.18%	0.18%	0.18%
2016M06	0.26%	0.28%	0.28%	0.29%	0.65%	0.37%	0.21%	0.16%	0.16%	0.16%
2016M07	0.36%	0.45%	0.64%	0.39%	0.66%	0.49%	0.33%	0.14%	0.20%	0.14%
2016M08	0.33%	0.38%	0.53%	0.37%	0.56%	0.45%	0.31%	0.14%	0.18%	0.14%
2016M09	0.37%	0.53%	0.54%	0.37%	0.56%	0.50%	0.33%	0.13%	0.21%	0.13%
2016M10	0.33%	0.39%	0.45%	0.34%	0.48%	0.45%	0.31%	0.12%	0.18%	0.12%
2016M11	0.29%	0.32%	0.39%	0.31%	0.42%	0.42%	0.29%	0.12%	0.17%	0.12%
2016M12	0.29%	0.28%	0.35%	0.30%	0.50%	0.39%	0.27%	0.12%	0.19%	0.12%
2017M01	0.27%	0.28%	0.32%	0.30%	0.44%	0.36%	0.25%	0.11%	0.19%	0.11%
2017M02	0.25%	0.32%	0.28%	0.28%	0.40%	0.36%	0.23%	0.11%	0.17%	0.11%
2017M03	0.24%	0.31%	0.25%	0.27%	0.38%	0.36%	0.21%	0.12%	0.18%	0.11%
2017M04	0.22%	0.28%	0.24%	0.26%	0.34%	0.35%	0.20%	0.11%	0.17%	0.10%
2017M05	0.20%	0.26%	0.22%	0.25%	0.33%	0.33%	0.19%	0.10%	0.15%	0.10%
2017M06	0.20%	0.28%	0.21%	0.24%	0.31%	0.33%	0.19%	0.10%	0.15%	0.09%
2017M07	0.18%	0.32%	0.20%	0.24%	0.33%	0.38%	0.17%	0.09%	0.15%	0.09%
2017M08	0.19%	0.34%	0.23%	0.24%	0.30%	0.42%	0.18%	0.09%	0.14%	0.09%
2017M09	0.18%	0.30%	0.23%	0.24%	0.30%	0.39%	0.19%	0.09%	0.13%	0.08%
2017M10	0.20%	0.30%	0.23%	0.24%	0.29%	0.37%	0.18%	0.09%	0.13%	0.08%
2017M11	0.20%	0.32%	0.22%	0.24%	0.27%	0.37%	0.20%	0.09%	0.13%	0.08%
2017M12	0.22%	0.28%	0.22%	0.24%	0.25%	0.36%	0.20%	0.09%	0.13%	0.09%
2018M01	0.26%	0.47%	0.46%	0.29%	0.30%	0.38%	0.25%	0.09%	0.16%	0.08%
2018M02	0.26%	0.39%	0.41%	0.29%	0.32%	0.43%	0.37%	0.12%	0.16%	0.12%
2018M03	0.25%	0.32%	0.48%	0.37%	0.45%	0.49%	0.34%	0.13%	0.17%	0.13%
2018M04	0.24%	0.33%	0.52%	0.34%	0.46%	0.45%	0.36%	0.13%	0.16%	0.13%
2018M05	0.23%	0.30%	0.48%	0.32%	0.49%	0.45%	0.33%	0.12%	0.15%	0.12%

2018M06	0.21%	0.36%	0.42%	0.33%	0.47%	0.42%	0.30%	0.12%	0.14%	0.11%
2018M07	0.20%	0.30%	0.40%	0.31%	0.41%	0.39%	0.28%	0.11%	0.13%	0.11%
2018M08	0.19%	0.28%	0.35%	0.29%	0.37%	0.36%	0.26%	0.11%	0.12%	0.11%
2018M09	0.17%	0.27%	0.30%	0.27%	0.34%	0.34%	0.25%	0.11%	0.11%	0.11%
2018M10	0.16%	0.26%	0.28%	0.27%	0.35%	0.32%	0.23%	0.11%	0.10%	0.10%
2018M11	0.16%	0.27%	0.26%	0.28%	0.66%	0.31%	0.22%	0.17%	0.10%	0.16%
2018M12	0.16%	0.36%	0.24%	0.30%	0.58%	0.29%	0.27%	0.15%	0.10%	0.15%
2019M01	0.16%	0.38%	0.33%	0.33%	0.65%	0.29%	0.28%	0.26%	0.12%	0.26%
2019M02	0.18%	0.36%	0.30%	0.31%	0.60%	0.28%	0.30%	0.29%	0.13%	0.29%
2019M03	0.17%	0.30%	0.27%	0.30%	0.53%	0.29%	0.27%	0.25%	0.13%	0.25%
2019M04	0.17%	0.29%	0.25%	0.28%	0.60%	0.28%	0.27%	0.22%	0.12%	0.22%
2019M05	0.16%	0.27%	0.23%	0.27%	0.51%	0.27%	0.25%	0.21%	0.11%	0.21%
2019M06	0.15%	0.33%	0.22%	0.26%	0.46%	0.26%	0.23%	0.25%	0.11%	0.25%
2019M07	0.16%	0.33%	0.20%	0.25%	0.46%	0.27%	0.22%	0.26%	0.11%	0.26%
2019M08	0.16%	0.28%	0.20%	0.24%	0.40%	0.27%	0.20%	0.23%	0.10%	0.23%
2019M09	0.15%	0.43%	0.18%	0.23%	0.39%	0.26%	0.20%	0.21%	0.11%	0.21%
2019M10	0.15%	0.33%	0.18%	0.24%	0.35%	0.26%	0.19%	0.19%	0.12%	0.19%
2019M11	0.15%	0.33%	0.18%	0.25%	0.33%	0.27%	0.19%	0.17%	0.11%	0.17%
2019M12	0.17%	0.30%	0.17%	0.26%	0.31%	0.41%	0.25%	0.16%	0.11%	0.16%
2020M01	0.18%	0.32%	0.22%	0.26%	0.32%	0.38%	0.29%	0.15%	0.11%	0.15%
2020M02	0.18%	0.42%	0.20%	0.25%	0.35%	0.35%	0.27%	0.14%	0.14%	0.14%
2020M03	0.32%	0.82%	0.34%	0.39%	0.51%	0.51%	0.37%	0.22%	0.25%	0.22%
2020M04	0.31%	0.53%	0.35%	0.35%	0.51%	0.50%	0.34%	0.42%	0.34%	0.42%
2020M05	0.29%	0.37%	0.35%	0.35%	0.65%	0.51%	0.32%	0.52%	0.31%	0.53%
2020M06	0.26%	0.32%	0.31%	0.34%	0.56%	0.46%	0.29%	0.45%	0.29%	0.46%
2020M07	0.25%	0.38%	0.50%	0.38%	0.65%	0.50%	0.35%	0.38%	0.29%	0.39%
2020M08	0.27%	0.37%	0.44%	0.36%	0.63%	0.45%	0.36%	0.35%	0.31%	0.36%
2020M09	0.28%	0.33%	0.41%	0.33%	0.58%	0.50%	0.37%	0.35%	0.29%	0.35%
2020M10	0.28%	0.49%	0.53%	0.36%	0.69%	0.45%	0.40%	0.33%	0.26%	0.34%
2020M11	0.28%	0.45%	0.45%	0.33%	0.59%	0.42%	0.38%	0.30%	0.25%	0.31%
2020M12	0.27%	0.64%	0.44%	0.45%	0.91%	0.39%	0.53%	0.38%	0.22%	0.39%
2021M01	0.25%	0.52%	0.40%	0.42%	0.82%	0.39%	0.48%	0.34%	0.20%	0.34%
2021M02	0.29%	0.38%	0.35%	0.41%	0.73%	0.36%	0.46%	0.29%	0.18%	0.29%
2021M03	0.29%	0.57%	0.31%	0.44%	0.69%	0.35%	0.48%	0.26%	0.21%	0.26%
Avg Pred. Variance	0.34%	0.38%	0.33%	0.30%	0.39%	0.44%	0.71%	0.28%	0.30%	0.28%
Spot Variance	0.29%	0.57%	0.31%	0.44%	0.69%	0.35%	0.48%	0.26%	0.21%	0.26%
GARCH Coefficient	2.251472	2.041229	1.541797	4.362963	1.587803	1.375194	0.944845	3.107979	1.531041	2.756527
Predicted RP Based on Avg								10.95%	5.60%	9.84%
Predicted RP Based on Spot								9.98%	3.95%	8.97%
Predicted RP								10.46%	4.77%	9.40%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Jan-26	0.0000%		0.3100%								
Feb-26	-3.8500%		0.2800%						-4.1300%		
Mar-26	-5.7500%		0.3200%						-6.0700%		
Apr-26	2.5300%		0.3000%						2.2300%		
May-26	1.7900%		0.2800%						1.5100%		
Jun-26	4.5700%		0.3300%						4.2400%		
Jul-26	4.7900%		0.3100%						4.4800%		
Aug-26	2.4800%		0.3100%						2.1700%		
Sep-26	2.5200%		0.3000%						2.2200%		
Oct-26	-2.8400%		0.3000%						-3.1400%		
Nov-26	3.4700%		0.3100%						3.1600%		
Dec-26	1.9600%		0.3000%						1.6600%		
Jan-27	-1.9300%		0.3000%						-2.2300%		
Feb-27	5.3700%		0.2700%						5.1000%		
Mar-27	0.8700%		0.2900%						0.5800%		
Apr-27	2.0100%		0.2700%						1.7400%		
May-27	6.0700%		0.2800%						5.7900%		
Jun-27	-0.6700%		0.2700%						-0.9400%		
Jul-27	6.7000%		0.2700%						6.4300%		
Aug-27	5.1500%		0.2900%						4.8600%		
Sep-27	4.5000%		0.2700%						4.2300%		
Oct-27	-5.0200%		0.2800%						-5.3000%		
Nov-27	7.2100%		0.2700%						6.9400%		
Dec-27	2.7900%		0.2700%						2.5200%		
Jan-28	-0.4000%	3.7500%	0.2700%	0.3717%	0.3842%	0.3779%	0.3842%	0.4042%	-0.6700%	-0.7779%	3.3658%
Feb-28	-1.2500%	-0.8000%	0.2500%	0.3717%	0.3842%	0.3779%	0.3825%	0.4042%	-1.5000%	-1.6279%	-1.1825%
Mar-28	11.0100%	7.2300%	0.2700%	0.3717%	0.3825%	0.3771%	0.3808%	0.4017%	10.7400%	10.6329%	6.8492%
Apr-28	3.4500%	9.8600%	0.2600%	0.3717%	0.3833%	0.3775%	0.3808%	0.4017%	3.1900%	3.0725%	9.4792%
May-28	1.9700%	2.0800%	0.2700%	0.3742%	0.3867%	0.3804%	0.3833%	0.4058%	1.7000%	1.5896%	1.6967%
Jun-28	-3.8500%	-4.0100%	0.2700%	0.3808%	0.3958%	0.3883%	0.3917%	0.4158%	-4.1200%	-4.2383%	-4.4017%
Jul-28	1.4100%	-0.7600%	0.2700%	0.3842%	0.3992%	0.3917%	0.3925%	0.4200%	1.1400%	1.0183%	-1.1525%
Aug-28	8.0300%	6.8200%	0.2900%	0.3867%	0.4017%	0.3942%	0.3983%	0.4233%	7.7400%	7.6358%	6.4217%
Sep-28	2.5900%	2.8700%	0.2700%	0.3842%	0.3992%	0.3917%	0.3975%	0.4208%	2.3200%	2.1983%	2.4725%
Oct-28	1.6800%	-0.9200%	0.3000%	0.3842%	0.3983%	0.3913%	0.3958%	0.4158%	1.3800%	1.2888%	-1.3158%
Nov-28	12.9200%	21.4700%	0.2700%	0.3817%	0.3933%	0.3875%	0.3933%	0.4150%	12.6500%	12.5325%	21.0767%
Dec-28	0.4900%	1.0000%	0.2900%	0.3842%	0.3975%	0.3908%	0.3958%	0.4208%	0.2000%	0.0992%	0.6042%
Jan-29	5.8300%	13.2500%	0.2900%	0.3850%	0.3992%	0.3921%	0.3958%	0.4208%	5.5400%	5.4379%	12.8542%
Feb-29	-0.1900%	-2.3200%	0.2700%	0.3883%	0.4050%	0.3967%	0.4008%	0.4250%	-0.4600%	-0.5867%	-2.7208%
Mar-29	-0.1200%	-1.1000%	0.2800%	0.3917%	0.4100%	0.4008%	0.4075%	0.4283%	-0.4000%	-0.5208%	-1.5075%
Apr-29	1.7600%	3.4700%	0.3400%	0.3908%	0.4092%	0.4000%	0.4067%	0.4283%	1.4200%	1.3600%	3.0633%
May-29	-3.6200%	4.7000%	0.3000%	0.3917%	0.4092%	0.4004%	0.4083%	0.4283%	-3.9200%	-4.0204%	4.2917%
Jun-29	11.4000%	21.7800%	0.2900%	0.3975%	0.4150%	0.4063%	0.4083%	0.4358%	11.1100%	10.9938%	21.3717%
Jul-29	4.7100%	9.0500%	0.3200%	0.3975%	0.4142%	0.4058%	0.4092%	0.4367%	4.3900%	4.3042%	8.6408%

	Avg Aaa and Aa										
Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA	
Aug-29	10.2800%	10.3300%	0.3000%	0.3992%	0.4158%	0.4075%	0.4142%	0.4417%	9.9800%	9.8725%	9.9158%
Sep-29	-4.7600%	0.0400%	0.3200%	0.4000%	0.4175%	0.4088%	0.4183%	0.4483%	-5.0800%	-5.1688%	-0.3783%
Oct-29	-19.7300%	-30.2200%	0.3100%	0.3975%	0.4175%	0.4075%	0.4208%	0.4450%	-20.0400%	-20.1375%	-30.6408%
Nov-29	-12.4600%	-14.2400%	0.2600%	0.3967%	0.4117%	0.4042%	0.4133%	0.4408%	-12.7200%	-12.8642%	-14.6533%
Dec-29	2.8200%	6.8000%	0.3100%	0.3892%	0.4033%	0.3963%	0.4058%	0.4358%	2.5100%	2.4238%	6.3942%
Jan-30	6.3900%	7.4000%	0.2900%	0.3883%	0.4050%	0.3967%	0.4075%	0.4383%	6.1000%	5.9933%	6.9925%
Feb-30	2.5900%	8.8500%	0.2600%	0.3908%	0.4075%	0.3992%	0.4108%	0.4408%	2.3300%	2.1908%	8.4392%
Mar-30	8.1200%	8.9100%	0.2900%	0.3850%	0.4000%	0.3925%	0.4025%	0.4317%	7.8300%	7.7275%	8.5075%
Apr-30	-0.8000%	3.4100%	0.2700%	0.3833%	0.3983%	0.3908%	0.3992%	0.4292%	-1.0700%	-1.1908%	3.0108%
May-30	-0.9600%	-2.3600%	0.2700%	0.3833%	0.3975%	0.3904%	0.3975%	0.4200%	-1.2300%	-1.3504%	-2.7575%
Jun-30	-16.2500%	-19.0300%	0.2900%	0.3808%	0.3967%	0.3888%	0.3967%	0.4175%	-16.5400%	-16.6388%	-19.4267%
Jul-30	3.8600%	1.7600%	0.2800%	0.3767%	0.3950%	0.3858%	0.3942%	0.4158%	3.5800%	3.4742%	1.3658%
Aug-30	1.4100%	0.7600%	0.2600%	0.3725%	0.3900%	0.3813%	0.3892%	0.4125%	1.1500%	1.0288%	0.3708%
Sep-30	-12.8200%	-11.0800%	0.2900%	0.3683%	0.3875%	0.3779%	0.3850%	0.4050%	-13.1100%	-13.1979%	-11.4650%
Oct-30	-8.5500%	-8.1800%	0.2700%	0.3683%	0.3892%	0.3788%	0.3858%	0.4067%	-8.8200%	-8.9288%	-8.5658%
Nov-30	-0.8900%	-7.3000%	0.2600%	0.3725%	0.3958%	0.3842%	0.3900%	0.4133%	-1.1500%	-1.2742%	-7.6900%
Dec-30	-7.0600%	-3.3900%	0.2800%	0.3767%	0.4042%	0.3904%	0.3950%	0.4258%	-7.3400%	-7.4504%	-3.7850%
Jan-31	5.0200%	5.4000%	0.2800%	0.3683%	0.3917%	0.3800%	0.3867%	0.4175%	4.7400%	4.6400%	5.0133%
Feb-31	11.9300%	15.2400%	0.2600%	0.3692%	0.3917%	0.3804%	0.3867%	0.4175%	11.6700%	11.5496%	14.8533%
Mar-31	-6.7500%	-2.3900%	0.2900%	0.3658%	0.3892%	0.3775%	0.3808%	0.4150%	-7.0400%	-7.1275%	-2.7708%
Apr-31	-9.3500%	-10.5400%	0.2700%	0.3667%	0.3967%	0.3817%	0.3783%	0.4050%	-9.6200%	-9.7317%	-10.9183%
May-31	-12.7900%	-10.2900%	0.2600%	0.3642%	0.3967%	0.3804%	0.3725%	0.4033%	-13.0500%	-13.1704%	-10.6625%
Jun-31	14.2100%	13.7300%	0.2800%	0.3633%	0.4008%	0.3821%	0.3733%	0.4058%	13.9300%	13.8279%	13.3567%
Jul-31	-7.2200%	-6.2200%	0.2700%	0.3633%	0.4008%	0.3821%	0.3733%	0.4025%	-7.4900%	-7.6021%	-6.5933%
Aug-31	1.8200%	2.5600%	0.2700%	0.3667%	0.4042%	0.3854%	0.3717%	0.4008%	1.5500%	1.4346%	2.1883%
Sep-31	-29.7300%	-31.4900%	0.2700%	0.3792%	0.4233%	0.4013%	0.3817%	0.4208%	-30.0000%	-30.1313%	-31.8717%
Oct-31	8.9600%	9.9000%	0.2900%	0.4158%	0.4642%	0.4400%	0.4158%	0.4617%	8.6700%	8.5200%	9.4842%
Nov-31	-7.9800%	-6.1400%	0.3100%	0.4117%	0.4675%	0.4396%	0.4142%	0.4592%	-8.2900%	-8.4196%	-6.5542%
Dec-31	-14.0000%	-12.8300%	0.3200%	0.4433%	0.5217%	0.4825%	0.4467%	0.5200%	-14.3200%	-14.4825%	-13.2767%
Jan-32	-2.7100%	-2.0000%	0.3200%	0.4333%	0.5067%	0.4700%	0.4617%	0.5142%	-3.0300%	-3.1800%	-2.4617%
Feb-32	5.7000%	7.9900%	0.3200%	0.4358%	0.5108%	0.4733%	0.4742%	0.5342%	5.3800%	5.2267%	7.5158%
Mar-32	-11.5800%	-10.5800%	0.3100%	0.4150%	0.4875%	0.4513%	0.4467%	0.5050%	-11.8900%	-12.0313%	-11.0267%
Apr-32	-19.9700%	-15.3500%	0.3000%	0.4308%	0.5092%	0.4700%	0.4600%	0.5692%	-20.2700%	-20.4400%	-15.8100%
May-32	-21.9600%	-28.0600%	0.2800%	0.4467%	0.5317%	0.4892%	0.4692%	0.6133%	-22.2400%	-22.4492%	-28.5292%
Jun-32	-0.2200%	0.9000%	0.2800%	0.4508%	0.5500%	0.5004%	0.4767%	0.6308%	-0.5000%	-0.7204%	0.4233%
Jul-32	38.1500%	33.1800%	0.2800%	0.4383%	0.5425%	0.4904%	0.4750%	0.6067%	37.8700%	37.6596%	32.7050%
Aug-32	38.6900%	40.3000%	0.2800%	0.4092%	0.4858%	0.4475%	0.4392%	0.5292%	38.4100%	38.2425%	39.8608%
Sep-32	-3.4600%	-2.7000%	0.2600%	0.3917%	0.4617%	0.4267%	0.4158%	0.4925%	-3.7200%	-3.8867%	-3.1158%
Oct-32	-13.4900%	-10.4700%	0.2700%	0.3867%	0.4592%	0.4229%	0.4050%	0.4842%	-13.7600%	-13.9129%	-10.8750%
Nov-32	-4.1700%	-3.5400%	0.2600%	0.3858%	0.4642%	0.4250%	0.4033%	0.4900%	-4.4300%	-4.5950%	-3.9433%
Dec-32	5.6500%	8.9300%	0.2700%	0.3825%	0.4667%	0.4246%	0.3958%	0.4875%	5.3800%	5.2254%	8.5342%
Jan-33	0.8700%	-3.1100%	0.2700%	0.3700%	0.4417%	0.4058%	0.3842%	0.4492%	0.6000%	0.4642%	-3.4942%
Feb-33	-17.7200%	-19.8400%	0.2300%	0.3733%	0.4458%	0.4096%	0.3967%	0.4808%	-17.9500%	-18.1296%	-20.2367%
Mar-33	3.5300%	-10.8000%	0.2700%	0.3900%	0.4675%	0.4288%	0.4217%	0.5283%	3.2600%	3.1013%	-11.2217%
Apr-33	42.5600%	26.3500%	0.2500%	0.3983%	0.4842%	0.4413%	0.4375%	0.5742%	42.3100%	42.1188%	25.9125%

	Avg Aaa and Aa										
	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
May-33	16.8300%	17.3200%	0.2800%	0.3858%	0.4500%	0.4179%	0.4292%	0.5417%	16.5500%	16.4121%	16.8908%
Jun-33	13.3800%	14.2600%	0.2500%	0.3717%	0.4242%	0.3979%	0.4108%	0.5092%	13.1300%	12.9821%	13.8492%
Jul-33	-8.6200%	-12.0400%	0.2600%	0.3633%	0.4025%	0.3829%	0.3958%	0.4925%	-8.8800%	-9.0029%	-12.4358%
Aug-33	12.0600%	-0.5600%	0.2600%	0.3583%	0.3975%	0.3779%	0.3942%	0.4983%	11.8000%	11.6821%	-0.9542%
Sep-33	-11.1800%	-17.5900%	0.2500%	0.3633%	0.4133%	0.3883%	0.4142%	0.5300%	-11.4300%	-11.5683%	-18.0042%
Oct-33	-8.5500%	-7.1200%	0.2600%	0.3617%	0.4142%	0.3879%	0.4200%	0.5300%	-8.8100%	-8.9379%	-7.5400%
Nov-33	11.2700%	-1.8000%	0.2500%	0.3783%	0.4458%	0.4121%	0.4558%	0.5883%	11.0200%	10.8579%	-2.2558%
Dec-33	2.5300%	1.2600%	0.2800%	0.3750%	0.4392%	0.4071%	0.4558%	0.6017%	2.2500%	2.1229%	0.8042%
Jan-34	10.6900%	17.4600%	0.2900%	0.3625%	0.4167%	0.3896%	0.4408%	0.5467%	10.4000%	10.3004%	17.0192%
Feb-34	-3.2200%	-2.4200%	0.2400%	0.3500%	0.3917%	0.3708%	0.4067%	0.4817%	-3.4600%	-3.5908%	-2.8267%
Mar-34	0.0000%	-1.1100%	0.2700%	0.3442%	0.3792%	0.3617%	0.3942%	0.4717%	-0.2700%	-0.3617%	-1.5042%
Apr-34	-2.5100%	-3.5100%	0.2500%	0.3392%	0.3692%	0.3542%	0.3883%	0.4533%	-2.7600%	-2.8642%	-3.8983%
May-34	-7.3600%	-7.6500%	0.2500%	0.3342%	0.3642%	0.3492%	0.3833%	0.4492%	-7.6100%	-7.7092%	-8.0333%
Jun-34	2.2900%	4.7800%	0.2400%	0.3275%	0.3583%	0.3429%	0.3767%	0.4500%	2.0500%	1.9471%	4.4033%
Jul-34	-11.3200%	-16.0300%	0.2400%	0.3242%	0.3567%	0.3404%	0.3717%	0.4408%	-11.5600%	-11.6604%	-16.4017%
Aug-34	6.1100%	2.6900%	0.2400%	0.3275%	0.3617%	0.3446%	0.3792%	0.4525%	5.8700%	5.7654%	2.3108%
Sep-34	-0.3300%	0.9500%	0.2300%	0.3300%	0.3683%	0.3492%	0.3875%	0.4633%	-0.5600%	-0.6792%	0.5625%
Oct-34	-2.8600%	-6.6600%	0.2700%	0.3250%	0.3633%	0.3442%	0.3825%	0.4500%	-3.1300%	-3.2042%	-7.0425%
Nov-34	9.4200%	-0.4800%	0.2500%	0.3217%	0.3567%	0.3392%	0.3742%	0.4483%	9.1700%	9.0808%	-0.8542%
Dec-34	-0.1000%	-7.0100%	0.2500%	0.3175%	0.3558%	0.3367%	0.3733%	0.4467%	-0.3500%	-0.4367%	-7.3833%
Jan-35	-4.1100%	-2.3100%	0.2500%	0.3142%	0.3508%	0.3325%	0.3667%	0.4317%	-4.3600%	-4.4425%	-2.6767%
Feb-35	-3.4100%	-11.3600%	0.2100%	0.3075%	0.3442%	0.3258%	0.3550%	0.4133%	-3.6200%	-3.7358%	-11.7150%
Mar-35	-2.8600%	10.4300%	0.2200%	0.3058%	0.3425%	0.3242%	0.3492%	0.4067%	-3.0800%	-3.1842%	10.0808%
Apr-35	9.8000%	11.7800%	0.2300%	0.3050%	0.3400%	0.3225%	0.3425%	0.3992%	9.5700%	9.4775%	11.4375%
May-35	4.0900%	11.0600%	0.2300%	0.3042%	0.3358%	0.3200%	0.3375%	0.3842%	3.8600%	3.7700%	10.7225%
Jun-35	6.9900%	10.3600%	0.2200%	0.3008%	0.3325%	0.3167%	0.3333%	0.3775%	6.7700%	6.6733%	10.0267%
Jul-35	8.5000%	8.7000%	0.2400%	0.2967%	0.3242%	0.3104%	0.3275%	0.3683%	8.2600%	8.1896%	8.3725%
Aug-35	2.8000%	5.6300%	0.2300%	0.3000%	0.3225%	0.3113%	0.3275%	0.3700%	2.5700%	2.4888%	5.3025%
Sep-35	2.5600%	-1.2200%	0.2300%	0.2992%	0.3208%	0.3100%	0.3250%	0.3692%	2.3300%	2.2500%	-1.5450%
Oct-35	7.7700%	12.2400%	0.2300%	0.2933%	0.3183%	0.3058%	0.3208%	0.3667%	7.5400%	7.4642%	11.9192%
Nov-35	4.7400%	1.0800%	0.2400%	0.2892%	0.3108%	0.3000%	0.3175%	0.3625%	4.5000%	4.4400%	0.7625%
Dec-35	3.9400%	4.7900%	0.2400%	0.2867%	0.3042%	0.2954%	0.3133%	0.3575%	3.7000%	3.6446%	4.4767%
Jan-36	6.7000%	11.0300%	0.2400%	0.2808%	0.2975%	0.2892%	0.3083%	0.3508%	6.4600%	6.4108%	10.7217%
Feb-36	2.2400%	-3.4200%	0.2300%	0.2767%	0.2958%	0.2863%	0.3067%	0.3475%	2.0100%	1.9538%	-3.7267%
Mar-36	2.6800%	0.3300%	0.2400%	0.2742%	0.2958%	0.2850%	0.3058%	0.3475%	2.4400%	2.3950%	0.0242%
Apr-36	-7.5100%	-8.1400%	0.2200%	0.2742%	0.2975%	0.2858%	0.3075%	0.3475%	-7.7300%	-7.7958%	-8.4475%
May-36	5.4500%	7.6100%	0.2200%	0.2725%	0.2942%	0.2833%	0.3042%	0.3450%	5.2300%	5.1667%	7.3058%
Jun-36	3.3300%	3.5000%	0.2400%	0.2700%	0.2925%	0.2813%	0.3000%	0.3433%	3.0900%	3.0488%	3.2000%
Jul-36	7.0100%	10.0900%	0.2300%	0.2692%	0.2900%	0.2796%	0.2975%	0.3392%	6.7800%	6.7304%	9.7925%
Aug-36	1.5100%	-0.1800%	0.2300%	0.2675%	0.2867%	0.2771%	0.2958%	0.3383%	1.2800%	1.2329%	-0.4758%
Sep-36	0.3100%	-2.2500%	0.2100%	0.2650%	0.2842%	0.2746%	0.2950%	0.3375%	0.1000%	0.0354%	-2.5450%
Oct-36	7.7500%	5.6600%	0.2300%	0.2650%	0.2808%	0.2729%	0.2900%	0.3367%	7.5200%	7.4771%	5.3700%
Nov-36	1.3400%	-1.6900%	0.2200%	0.2625%	0.2758%	0.2692%	0.2792%	0.3292%	1.1200%	1.0708%	-1.9692%
Dec-36	-0.2900%	-1.7400%	0.2200%	0.2583%	0.2733%	0.2658%	0.2758%	0.3192%	-0.5100%	-0.5558%	-2.0158%
Jan-37	3.9000%	1.9500%	0.2100%	0.2583%	0.2750%	0.2667%	0.2775%	0.3183%	3.6900%	3.6333%	1.6725%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp		Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Feb-37	1.9100%	-3.5300%	0.2000%	0.2683%	0.2833%	0.2758%	0.2858%	0.3242%	1.7100%	1.6342%	-3.8158%	
Mar-37	-0.7700%	-5.7300%	0.2200%	0.2767%	0.2917%	0.2842%	0.2942%	0.3333%	-0.9900%	-1.0542%	-6.0242%	
Apr-37	-8.0900%	-7.3600%	0.2300%	0.2850%	0.2975%	0.2913%	0.2967%	0.3392%	-8.3200%	-8.3813%	-7.6567%	
May-37	-0.2400%	-5.1600%	0.2200%	0.2775%	0.2900%	0.2838%	0.2900%	0.3333%	-0.4600%	-0.5238%	-5.4500%	
Jun-37	-5.0400%	-4.6700%	0.2500%	0.2733%	0.2858%	0.2796%	0.2892%	0.3325%	-5.2900%	-5.3196%	-4.9592%	
Jul-37	10.4500%	16.7100%	0.2400%	0.2708%	0.2842%	0.2775%	0.2867%	0.3283%	10.2100%	10.1725%	16.4233%	
Aug-37	-4.8300%	-9.0300%	0.2300%	0.2700%	0.2842%	0.2771%	0.2842%	0.3242%	-5.0600%	-5.1071%	-9.3142%	
Sep-37	-14.0300%	-11.7400%	0.2300%	0.2733%	0.2883%	0.2808%	0.2858%	0.3300%	-14.2600%	-14.3108%	-12.0258%	
Oct-37	-9.8100%	-5.1600%	0.2300%	0.2725%	0.2942%	0.2833%	0.2900%	0.3408%	-10.0400%	-10.0933%	-5.4500%	
Nov-37	-8.6600%	0.8000%	0.2400%	0.2700%	0.2950%	0.2825%	0.2850%	0.3400%	-8.9000%	-8.9425%	0.5150%	
Dec-37	-4.5900%	-9.5100%	0.2300%	0.2675%	0.2917%	0.2796%	0.2808%	0.3358%	-4.8200%	-4.8696%	-9.7908%	
Jan-38	1.5200%	-3.6800%	0.2300%	0.2642%	0.2917%	0.2779%	0.2792%	0.3342%	1.2900%	1.2421%	-3.9592%	
Feb-38	6.7400%	3.4100%	0.2100%	0.2667%	0.2925%	0.2796%	0.2792%	0.3358%	6.5300%	6.4604%	3.1308%	
Mar-38	-24.8700%	-19.8400%	0.2300%	0.2683%	0.2967%	0.2825%	0.2783%	0.3325%	-25.1000%	-25.1525%	-20.1183%	
Apr-38	14.4700%	15.3800%	0.2200%	0.2750%	0.3108%	0.2929%	0.2850%	0.3400%	14.2500%	14.1771%	15.0950%	
May-38	-3.3000%	1.8100%	0.2200%	0.2683%	0.2967%	0.2825%	0.2758%	0.3292%	-3.5200%	-3.5825%	1.5342%	
Jun-38	25.0300%	16.2200%	0.2100%	0.2717%	0.3067%	0.2892%	0.2733%	0.3292%	24.8200%	24.7408%	15.9467%	
Jul-38	7.4400%	1.4800%	0.2100%	0.2683%	0.3017%	0.2850%	0.2717%	0.3217%	7.2300%	7.1550%	1.2083%	
Aug-38	-2.2600%	-5.5700%	0.2200%	0.2650%	0.2975%	0.2813%	0.2717%	0.3200%	-2.4800%	-2.5413%	-5.8417%	
Sep-38	1.6600%	1.9100%	0.2100%	0.2675%	0.3000%	0.2838%	0.2758%	0.3233%	1.4500%	1.3763%	1.6342%	
Oct-38	7.7600%	18.0100%	0.2200%	0.2625%	0.2942%	0.2783%	0.2692%	0.3158%	7.5400%	7.4817%	17.7408%	
Nov-38	-2.7300%	-6.2000%	0.2100%	0.2583%	0.2883%	0.2733%	0.2617%	0.3108%	-2.9400%	-3.0033%	-6.4617%	
Dec-38	4.0100%	3.9100%	0.2200%	0.2567%	0.2850%	0.2708%	0.2583%	0.3117%	3.7900%	3.7392%	3.6517%	
Jan-39	-6.7400%	1.6500%	0.2100%	0.2508%	0.2767%	0.2638%	0.2542%	0.3067%	-6.9500%	-7.0038%	1.3958%	
Feb-39	3.9000%	8.0100%	0.1900%	0.2500%	0.2717%	0.2608%	0.2508%	0.2992%	3.7100%	3.6392%	7.7592%	
Mar-39	-13.3900%	-13.7800%	0.2100%	0.2492%	0.2683%	0.2588%	0.2492%	0.2950%	-13.6000%	-13.6488%	-14.0292%	
Apr-39	-0.2700%	2.8500%	0.1900%	0.2517%	0.2683%	0.2600%	0.2508%	0.2958%	-0.4600%	-0.5300%	2.5992%	
May-39	7.3300%	6.6500%	0.2000%	0.2475%	0.2633%	0.2554%	0.2467%	0.2917%	7.1300%	7.0746%	6.4033%	
Jun-39	-6.1200%	-4.2300%	0.1800%	0.2433%	0.2608%	0.2521%	0.2475%	0.2892%	-6.3000%	-6.3721%	-4.4775%	
Jul-39	11.0500%	12.0800%	0.1900%	0.2408%	0.2567%	0.2488%	0.2442%	0.2858%	10.8600%	10.8013%	11.8358%	
Aug-39	-6.4800%	-6.4700%	0.1800%	0.2442%	0.2592%	0.2517%	0.2475%	0.2842%	-6.6600%	-6.7317%	-6.7175%	
Sep-39	16.7300%	4.2100%	0.1900%	0.2708%	0.2908%	0.2808%	0.2758%	0.3092%	16.5400%	16.4492%	3.9342%	
Oct-39	-1.2300%	1.3000%	0.2300%	0.2625%	0.2792%	0.2708%	0.2667%	0.2983%	-1.4600%	-1.5008%	1.0333%	
Nov-39	-3.9800%	-1.5700%	0.2000%	0.2500%	0.2633%	0.2567%	0.2492%	0.2842%	-4.1800%	-4.2367%	-1.8192%	
Dec-39	2.7000%	2.7200%	0.1900%	0.2450%	0.2617%	0.2533%	0.2475%	0.2817%	2.5100%	2.4467%	2.4725%	
Jan-40	-3.3600%	0.6900%	0.2000%	0.2400%	0.2567%	0.2483%	0.2450%	0.2783%	-3.5600%	-3.6083%	0.4450%	
Feb-40	1.3300%	-1.0200%	0.1800%	0.2383%	0.2542%	0.2463%	0.2450%	0.2792%	1.1500%	1.0838%	-1.2650%	
Mar-40	1.2400%	0.9400%	0.1900%	0.2367%	0.2533%	0.2450%	0.2433%	0.2783%	1.0500%	0.9950%	0.6967%	
Apr-40	-0.2400%	-0.9200%	0.1800%	0.2350%	0.2492%	0.2421%	0.2400%	0.2708%	-0.4200%	-0.4821%	-1.1600%	
May-40	-22.8900%	-19.6400%	0.1900%	0.2442%	0.2567%	0.2504%	0.2492%	0.2750%	-23.0800%	-23.1404%	-19.8892%	
Jun-40	8.0900%	15.0600%	0.1900%	0.2467%	0.2583%	0.2525%	0.2492%	0.2783%	7.9000%	7.8375%	14.8108%	
Jul-40	3.4100%	0.6500%	0.2000%	0.2400%	0.2508%	0.2454%	0.2433%	0.2692%	3.2100%	3.1646%	0.4067%	
Aug-40	3.5000%	-0.9400%	0.1900%	0.2375%	0.2525%	0.2450%	0.2433%	0.2675%	3.3100%	3.2550%	-1.1833%	
Sep-40	1.2300%	-2.1100%	0.1800%	0.2350%	0.2508%	0.2429%	0.2400%	0.2650%	1.0500%	0.9871%	-2.3500%	
Oct-40	4.2200%	3.1700%	0.1800%	0.2325%	0.2508%	0.2417%	0.2408%	0.2625%	4.0400%	3.9783%	2.9292%	

	Avg Aaa and Aa											
Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Corp	Aa PU	A PU	RPMKT	RPAAAA	RPSPAA		
Nov-40	-3.1600%	-12.0700%	0.1800%	0.2292%	0.2467%	0.2379%	0.2383%	0.2592%	-3.3400%	-3.3979%	-12.3083%	
Dec-40	0.0900%	1.5400%	0.1700%	0.2258%	0.2433%	0.2346%	0.2375%	0.2583%	-0.0800%	-0.1446%	1.3025%	
Jan-41	-4.6300%	-0.8400%	0.1600%	0.2292%	0.2458%	0.2375%	0.2400%	0.2625%	-4.7900%	-4.8675%	-1.0800%	
Feb-41	-0.6000%	-2.3300%	0.1600%	0.2317%	0.2500%	0.2408%	0.2400%	0.2667%	-0.7600%	-0.8408%	-2.5700%	
Mar-41	0.7100%	-2.8000%	0.1800%	0.2333%	0.2508%	0.2421%	0.2392%	0.2633%	0.5300%	0.4679%	-3.0392%	
Apr-41	-6.1200%	-8.4400%	0.1700%	0.2350%	0.2533%	0.2442%	0.2417%	0.2617%	-6.2900%	-6.3642%	-8.6817%	
May-41	1.8300%	-3.3700%	0.1700%	0.2342%	0.2492%	0.2417%	0.2392%	0.2567%	1.6600%	1.5883%	-3.6092%	
Jun-41	5.7800%	2.5700%	0.1600%	0.2308%	0.2458%	0.2383%	0.2367%	0.2525%	5.6200%	5.5417%	2.3333%	
Jul-41	5.7900%	5.3800%	0.1600%	0.2283%	0.2417%	0.2350%	0.2333%	0.2500%	5.6300%	5.5550%	5.1467%	
Aug-41	0.1000%	-1.9200%	0.1600%	0.2283%	0.2417%	0.2350%	0.2342%	0.2483%	-0.0600%	-0.1350%	-2.1542%	
Sep-41	-0.6800%	-2.8200%	0.1600%	0.2292%	0.2425%	0.2358%	0.2342%	0.2500%	-0.8400%	-0.9158%	-3.0542%	
Oct-41	-6.5700%	-8.4800%	0.1600%	0.2275%	0.2392%	0.2333%	0.2300%	0.2500%	-6.7300%	-6.8033%	-8.7100%	
Nov-41	-2.8400%	-6.5200%	0.1400%	0.2267%	0.2383%	0.2325%	0.2283%	0.2483%	-2.9800%	-3.0725%	-6.7483%	
Dec-41	-4.0700%	-6.7800%	0.1600%	0.2333%	0.2458%	0.2396%	0.2375%	0.2550%	-4.2300%	-4.3096%	-7.0175%	
Jan-42	1.6100%	2.5200%	0.2100%	0.2358%	0.2467%	0.2413%	0.2392%	0.2575%	1.4000%	1.3688%	2.2808%	
Feb-42	-1.5900%	-3.3900%	0.1900%	0.2375%	0.2483%	0.2429%	0.2425%	0.2575%	-1.7800%	-1.8329%	-3.6325%	
Mar-42	-6.5200%	-10.4600%	0.2100%	0.2383%	0.2500%	0.2442%	0.2433%	0.2600%	-6.7300%	-6.7642%	-10.7033%	
Apr-42	-4.0000%	-4.3200%	0.2000%	0.2358%	0.2483%	0.2421%	0.2408%	0.2575%	-4.2000%	-4.2421%	-4.5608%	
May-42	7.9600%	9.5600%	0.1900%	0.2375%	0.2500%	0.2438%	0.2408%	0.2583%	7.7700%	7.7163%	9.3192%	
Jun-42	2.2100%	0.5700%	0.2100%	0.2375%	0.2508%	0.2442%	0.2408%	0.2600%	2.0000%	1.9658%	0.3292%	
Jul-42	3.3700%	0.4000%	0.2100%	0.2358%	0.2492%	0.2425%	0.2383%	0.2583%	3.1600%	3.1275%	0.1617%	
Aug-42	1.6400%	0.2600%	0.2100%	0.2342%	0.2492%	0.2417%	0.2383%	0.2583%	1.4300%	1.3983%	0.0217%	
Sep-42	2.9000%	4.6600%	0.2000%	0.2333%	0.2483%	0.2408%	0.2375%	0.2567%	2.7000%	2.6592%	4.4225%	
Oct-42	6.7800%	13.6200%	0.2100%	0.2333%	0.2458%	0.2396%	0.2358%	0.2567%	6.5700%	6.5404%	13.3842%	
Nov-42	-0.2100%	-0.1500%	0.2000%	0.2325%	0.2450%	0.2388%	0.2342%	0.2558%	-0.4100%	-0.4488%	-0.3842%	
Dec-42	5.4900%	3.2800%	0.2100%	0.2342%	0.2467%	0.2404%	0.2358%	0.2550%	5.2800%	5.2496%	3.0442%	
Jan-43	7.3700%	12.1700%	0.2000%	0.2325%	0.2442%	0.2383%	0.2325%	0.2542%	7.1700%	7.1317%	11.9375%	
Feb-43	5.8300%	7.1900%	0.1900%	0.2308%	0.2408%	0.2358%	0.2300%	0.2517%	5.6400%	5.5942%	6.9600%	
Mar-43	5.4500%	4.1200%	0.2100%	0.2300%	0.2400%	0.2350%	0.2292%	0.2508%	5.2400%	5.2150%	3.8908%	
Apr-43	0.3500%	3.8700%	0.2000%	0.2300%	0.2400%	0.2350%	0.2292%	0.2500%	0.1500%	0.1150%	3.6408%	
May-43	5.5200%	3.4700%	0.1900%	0.2283%	0.2392%	0.2338%	0.2283%	0.2500%	5.3300%	5.2863%	3.2417%	
Jun-43	2.2300%	5.3800%	0.2100%	0.2267%	0.2375%	0.2321%	0.2258%	0.2483%	2.0200%	1.9979%	5.1542%	
Jul-43	-5.2600%	0.3800%	0.2100%	0.2242%	0.2350%	0.2296%	0.2233%	0.2467%	-5.4700%	-5.4896%	0.1567%	
Aug-43	1.7100%	1.0500%	0.2100%	0.2242%	0.2342%	0.2292%	0.2242%	0.2467%	1.5000%	1.4808%	0.8258%	
Sep-43	2.6300%	3.2300%	0.2000%	0.2242%	0.2350%	0.2296%	0.2250%	0.2467%	2.4300%	2.4004%	3.0050%	
Oct-43	-1.0800%	0.8200%	0.2000%	0.2250%	0.2358%	0.2304%	0.2250%	0.2475%	-1.2800%	-1.3104%	0.5950%	
Nov-43	-6.5400%	-7.7500%	0.2100%	0.2258%	0.2367%	0.2313%	0.2275%	0.2483%	-6.7500%	-6.7713%	-7.9775%	
Dec-43	6.1700%	5.7800%	0.2100%	0.2283%	0.2392%	0.2338%	0.2308%	0.2492%	5.9600%	5.9363%	5.5492%	
Jan-44	1.7100%	1.0600%	0.2100%	0.2267%	0.2358%	0.2313%	0.2283%	0.2492%	1.5000%	1.4788%	0.8317%	
Feb-44	0.4200%	1.7900%	0.2000%	0.2283%	0.2358%	0.2321%	0.2283%	0.2492%	0.2200%	0.1879%	1.5617%	
Mar-44	1.9500%	1.0400%	0.2100%	0.2283%	0.2350%	0.2317%	0.2267%	0.2475%	1.7400%	1.7183%	0.8133%	
Apr-44	-1.0000%	-0.9100%	0.2000%	0.2283%	0.2350%	0.2317%	0.2258%	0.2492%	-1.2000%	-1.2317%	-1.1358%	
May-44	5.0500%	3.0100%	0.2200%	0.2275%	0.2342%	0.2308%	0.2250%	0.2492%	4.8300%	4.8192%	2.7850%	
Jun-44	5.4300%	5.2600%	0.2000%	0.2275%	0.2342%	0.2308%	0.2250%	0.2492%	5.2300%	5.1992%	5.0350%	
Jul-44	-1.9300%	0.2900%	0.2100%	0.2267%	0.2333%	0.2300%	0.2250%	0.2467%	-2.1400%	-2.1600%	0.0650%	

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp			RPMKT	RPAAAAA	RPSPAA
						Aa PU	A PU				
Aug-44	1.5700%	3.5700%	0.2100%	0.2258%	0.2325%	0.2292%	0.2242%	0.2450%	1.3600%	1.3408%	3.3458%
Sep-44	-0.0800%	-1.5000%	0.2000%	0.2267%	0.2325%	0.2296%	0.2242%	0.2442%	-0.2800%	-0.3096%	-1.7242%
Oct-44	0.2300%	1.3900%	0.2100%	0.2267%	0.2342%	0.2304%	0.2267%	0.2450%	0.0200%	-0.0004%	1.1633%
Nov-44	1.3300%	-1.3000%	0.2000%	0.2267%	0.2333%	0.2300%	0.2292%	0.2467%	1.1300%	1.1000%	-1.5292%
Dec-44	3.7400%	3.2400%	0.2000%	0.2250%	0.2300%	0.2275%	0.2267%	0.2475%	3.5400%	3.5125%	3.0133%
Jan-45	1.5800%	4.9700%	0.2100%	0.2242%	0.2300%	0.2271%	0.2267%	0.2492%	1.3700%	1.3529%	4.7433%
Feb-45	6.8300%	6.9500%	0.1800%	0.2208%	0.2275%	0.2242%	0.2242%	0.2483%	6.6500%	6.6058%	6.7258%
Mar-45	-4.4100%	-3.5700%	0.2000%	0.2183%	0.2267%	0.2225%	0.2225%	0.2475%	-4.6100%	-4.6325%	-3.7925%
Apr-45	9.0200%	10.6600%	0.1900%	0.2175%	0.2275%	0.2225%	0.2242%	0.2458%	8.8300%	8.7975%	10.4358%
May-45	1.9500%	1.7100%	0.1900%	0.2183%	0.2267%	0.2225%	0.2242%	0.2433%	1.7600%	1.7275%	1.4858%
Jun-45	-0.0700%	6.6200%	0.1900%	0.2175%	0.2242%	0.2208%	0.2208%	0.2392%	-0.2600%	-0.2908%	6.3992%
Jul-45	-1.8000%	-0.5100%	0.1800%	0.2167%	0.2233%	0.2200%	0.2192%	0.2358%	-1.9800%	-2.0200%	-0.7292%
Aug-45	6.4100%	0.3100%	0.1900%	0.2175%	0.2250%	0.2213%	0.2208%	0.2333%	6.2200%	6.1888%	0.0892%
Sep-45	4.3800%	7.3900%	0.1800%	0.2183%	0.2250%	0.2217%	0.2217%	0.2325%	4.2000%	4.1583%	7.1683%
Oct-45	3.2200%	6.4100%	0.1900%	0.2183%	0.2250%	0.2217%	0.2225%	0.2325%	3.0300%	2.9983%	6.1875%
Nov-45	3.9600%	4.7100%	0.1800%	0.2183%	0.2233%	0.2208%	0.2200%	0.2308%	3.7800%	3.7392%	4.4900%
Dec-45	1.1600%	-1.1700%	0.1800%	0.2175%	0.2233%	0.2204%	0.2208%	0.2292%	0.9800%	0.9396%	-1.3908%
Jan-46	7.1400%	11.9900%	0.1700%	0.2117%	0.2183%	0.2150%	0.2142%	0.2242%	6.9700%	6.9250%	11.7758%
Feb-46	-6.4100%	-6.4000%	0.1500%	0.2067%	0.2133%	0.2100%	0.2092%	0.2225%	-6.5600%	-6.6200%	-6.6092%
Mar-46	4.8000%	6.3100%	0.1600%	0.2058%	0.2117%	0.2088%	0.2075%	0.2217%	4.6400%	4.5913%	6.1025%
Apr-46	3.9300%	3.3800%	0.1700%	0.2050%	0.2133%	0.2092%	0.2092%	0.2208%	3.7600%	3.7208%	3.1708%
May-46	2.8800%	3.0100%	0.1800%	0.2092%	0.2150%	0.2121%	0.2133%	0.2242%	2.7000%	2.6679%	2.7967%
Jun-46	-3.7000%	-2.7600%	0.1600%	0.2075%	0.2158%	0.2117%	0.2133%	0.2250%	-3.8600%	-3.9117%	-2.9733%
Jul-46	-2.3900%	-3.9500%	0.1900%	0.2067%	0.2158%	0.2113%	0.2125%	0.2242%	-2.5800%	-2.6013%	-4.1625%
Aug-46	-6.7400%	-7.2400%	0.1700%	0.2092%	0.2183%	0.2138%	0.2142%	0.2258%	-6.9100%	-6.9538%	-7.4542%
Sep-46	-9.9700%	-10.5100%	0.1800%	0.2150%	0.2233%	0.2192%	0.2183%	0.2292%	-10.1500%	-10.1892%	-10.7283%
Oct-46	-0.6000%	2.2000%	0.1900%	0.2167%	0.2250%	0.2208%	0.2208%	0.2300%	-0.7900%	-0.8208%	1.9792%
Nov-46	-0.2700%	0.5800%	0.1800%	0.2158%	0.2242%	0.2200%	0.2217%	0.2300%	-0.4500%	-0.4900%	0.3583%
Dec-46	4.5700%	7.0600%	0.1900%	0.2175%	0.2242%	0.2208%	0.2217%	0.2300%	4.3800%	4.3492%	6.8383%
Jan-47	2.5500%	-0.0200%	0.1800%	0.2142%	0.2208%	0.2175%	0.2167%	0.2267%	2.3700%	2.3325%	-0.2367%
Feb-47	-0.7700%	-0.8900%	0.1600%	0.2125%	0.2200%	0.2163%	0.2167%	0.2267%	-0.9300%	-0.9863%	-1.1067%
Mar-47	-1.4900%	-3.6400%	0.1800%	0.2125%	0.2200%	0.2163%	0.2175%	0.2267%	-1.6700%	-1.7063%	-3.8575%
Apr-47	-3.6300%	-3.2000%	0.1700%	0.2108%	0.2192%	0.2150%	0.2158%	0.2250%	-3.8000%	-3.8450%	-3.4158%
May-47	0.1400%	-2.7900%	0.1700%	0.2108%	0.2192%	0.2150%	0.2167%	0.2250%	-0.0300%	-0.0750%	-3.0067%
Jun-47	5.5400%	4.2800%	0.1900%	0.2125%	0.2200%	0.2163%	0.2167%	0.2258%	5.3500%	5.3238%	4.0633%
Jul-47	3.8100%	2.1400%	0.1800%	0.2125%	0.2200%	0.2163%	0.2167%	0.2275%	3.6300%	3.5938%	1.9233%
Aug-47	-2.0300%	-0.2200%	0.1700%	0.2133%	0.2200%	0.2167%	0.2167%	0.2275%	-2.2000%	-2.2467%	-0.4367%
Sep-47	-1.1100%	-1.4200%	0.1800%	0.2175%	0.2242%	0.2208%	0.2217%	0.2333%	-1.2900%	-1.3308%	-1.6417%
Oct-47	2.3800%	-1.3300%	0.1800%	0.2250%	0.2325%	0.2288%	0.2325%	0.2400%	2.2000%	2.1513%	-1.5625%
Nov-47	-1.7500%	-8.2400%	0.1700%	0.2308%	0.2375%	0.2342%	0.2375%	0.2442%	-1.9200%	-1.9842%	-8.4775%
Dec-47	2.3300%	1.8900%	0.2100%	0.2383%	0.2450%	0.2417%	0.2458%	0.2542%	2.1200%	2.0883%	1.6442%
Jan-48	-3.7900%	0.7000%	0.2000%	0.2383%	0.2450%	0.2417%	0.2450%	0.2542%	-3.9900%	-4.0317%	0.4550%
Feb-48	-3.8800%	-3.7200%	0.1900%	0.2375%	0.2442%	0.2408%	0.2433%	0.2542%	-4.0700%	-4.1208%	-3.9633%
Mar-48	7.9300%	6.1700%	0.2200%	0.2358%	0.2417%	0.2388%	0.2417%	0.2517%	7.7100%	7.6913%	5.9283%
Apr-48	2.9200%	1.6000%	0.2000%	0.2317%	0.2392%	0.2354%	0.2392%	0.2475%	2.7200%	2.6846%	1.3608%

	Avg Aaa and Aa										
Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA	
May-48	8.7900%	5.8300%	0.1800%	0.2300%	0.2383%	0.2342%	0.2383%	0.2450%	8.6100%	8.5558%	5.5917%
Jun-48	0.5400%	2.1200%	0.2100%	0.2300%	0.2375%	0.2338%	0.2375%	0.2450%	0.3300%	0.3063%	1.8825%
Jul-48	-5.0800%	-4.4300%	0.1900%	0.2342%	0.2408%	0.2375%	0.2425%	0.2492%	-5.2700%	-5.3175%	-4.6725%
Aug-48	1.5800%	0.3600%	0.2100%	0.2367%	0.2450%	0.2408%	0.2467%	0.2525%	1.3700%	1.3392%	0.1133%
Sep-48	-2.7600%	-0.7100%	0.2000%	0.2367%	0.2442%	0.2404%	0.2458%	0.2542%	-2.9600%	-3.0004%	-0.9558%
Oct-48	7.1000%	4.0300%	0.1900%	0.2367%	0.2450%	0.2408%	0.2458%	0.2525%	6.9100%	6.8592%	3.7842%
Nov-48	-9.6100%	-9.1300%	0.2100%	0.2367%	0.2433%	0.2400%	0.2467%	0.2558%	-9.8200%	-9.8500%	-9.3767%
Dec-48	3.4600%	2.2100%	0.2000%	0.2325%	0.2400%	0.2363%	0.2425%	0.2550%	3.2600%	3.2238%	1.9675%
Jan-49	0.3900%	5.0400%	0.2000%	0.2258%	0.2342%	0.2300%	0.2350%	0.2492%	0.1900%	0.1600%	4.8050%
Feb-49	-2.9600%	0.0500%	0.1800%	0.2258%	0.2333%	0.2296%	0.2358%	0.2492%	-3.1400%	-3.1896%	-0.1858%
Mar-49	3.2800%	3.6400%	0.1900%	0.2250%	0.2325%	0.2288%	0.2350%	0.2475%	3.0900%	3.0513%	3.4050%
Apr-49	-1.7900%	0.5800%	0.1800%	0.2250%	0.2325%	0.2288%	0.2358%	0.2467%	-1.9700%	-2.0188%	0.3442%
May-49	-2.5800%	0.3400%	0.2000%	0.2258%	0.2317%	0.2288%	0.2350%	0.2458%	-2.7800%	-2.8088%	0.1050%
Jun-49	0.1400%	-1.3400%	0.1900%	0.2258%	0.2317%	0.2288%	0.2333%	0.2450%	-0.0500%	-0.0888%	-1.5733%
Jul-49	6.5000%	5.6900%	0.1700%	0.2225%	0.2292%	0.2258%	0.2292%	0.2417%	6.3300%	6.2742%	5.4608%
Aug-49	2.1900%	3.4600%	0.1900%	0.2183%	0.2258%	0.2221%	0.2258%	0.2383%	2.0000%	1.9679%	3.2342%
Sep-49	2.6300%	3.7300%	0.1700%	0.2167%	0.2242%	0.2204%	0.2242%	0.2375%	2.4600%	2.4096%	3.5058%
Oct-49	3.4000%	1.1200%	0.1800%	0.2175%	0.2250%	0.2213%	0.2242%	0.2358%	3.2200%	3.1788%	0.8958%
Nov-49	1.7500%	1.5900%	0.1700%	0.2167%	0.2233%	0.2200%	0.2217%	0.2342%	1.5800%	1.5300%	1.3683%
Dec-49	4.8600%	3.9600%	0.1700%	0.2150%	0.2225%	0.2188%	0.2208%	0.2317%	4.6900%	4.6413%	3.7392%
Jan-50	1.9700%	3.5300%	0.1800%	0.2142%	0.2208%	0.2175%	0.2200%	0.2300%	1.7900%	1.7525%	3.3100%
Feb-50	1.9900%	1.0000%	0.1600%	0.2150%	0.2208%	0.2179%	0.2200%	0.2300%	1.8300%	1.7721%	0.7800%
Mar-50	0.7000%	0.8400%	0.1800%	0.2150%	0.2217%	0.2183%	0.2200%	0.2300%	0.5200%	0.4817%	0.6200%
Apr-50	4.8600%	1.8500%	0.1600%	0.2167%	0.2217%	0.2192%	0.2208%	0.2308%	4.7000%	4.6408%	1.6292%
May-50	5.0900%	1.9200%	0.1900%	0.2175%	0.2242%	0.2208%	0.2242%	0.2325%	4.9000%	4.8692%	1.6958%
Jun-50	-5.4800%	-7.7100%	0.1700%	0.2183%	0.2242%	0.2213%	0.2242%	0.2325%	-5.6500%	-5.7013%	-7.9342%
Jul-50	1.1900%	-4.3600%	0.1800%	0.2208%	0.2267%	0.2238%	0.2258%	0.2325%	1.0100%	0.9663%	-4.5858%
Aug-50	4.4300%	1.5400%	0.1800%	0.2175%	0.2225%	0.2200%	0.2217%	0.2300%	4.2500%	4.2100%	1.3183%
Sep-50	5.9200%	4.1800%	0.1700%	0.2200%	0.2258%	0.2229%	0.2258%	0.2333%	5.7500%	5.6971%	3.9542%
Oct-50	0.9300%	-0.2700%	0.1900%	0.2225%	0.2267%	0.2246%	0.2267%	0.2358%	0.7400%	0.7054%	-0.4967%
Nov-50	1.6900%	-1.7600%	0.1800%	0.2225%	0.2267%	0.2246%	0.2267%	0.2383%	1.5100%	1.4654%	-1.9867%
Dec-50	5.1300%	3.1200%	0.1800%	0.2225%	0.2267%	0.2246%	0.2267%	0.2383%	4.9500%	4.9054%	2.8933%
Jan-51	6.3700%	4.3800%	0.2000%	0.2217%	0.2258%	0.2238%	0.2258%	0.2358%	6.1700%	6.1463%	4.1542%
Feb-51	1.5700%	2.6800%	0.1700%	0.2217%	0.2258%	0.2238%	0.2275%	0.2367%	1.4000%	1.3463%	2.4525%
Mar-51	-1.5600%	-1.7400%	0.1900%	0.2317%	0.2350%	0.2333%	0.2392%	0.2458%	-1.7500%	-1.7933%	-1.9792%
Apr-51	5.0900%	0.0500%	0.2000%	0.2392%	0.2442%	0.2417%	0.2483%	0.2575%	4.8900%	4.8483%	-0.1983%
May-51	-2.9900%	0.6600%	0.2100%	0.2408%	0.2442%	0.2425%	0.2475%	0.2608%	-3.2000%	-3.2325%	0.4125%
Jun-51	-2.2800%	-0.4000%	0.2000%	0.2450%	0.2492%	0.2471%	0.2550%	0.2675%	-2.4800%	-2.5271%	-0.6550%
Jul-51	7.1100%	4.3900%	0.2300%	0.2450%	0.2492%	0.2471%	0.2533%	0.2717%	6.8800%	6.8629%	4.1367%
Aug-51	4.7800%	1.5200%	0.2100%	0.2400%	0.2433%	0.2417%	0.2467%	0.2658%	4.5700%	4.5383%	1.2733%
Sep-51	0.1300%	0.8600%	0.1900%	0.2367%	0.2400%	0.2383%	0.2433%	0.2617%	-0.0600%	-0.1083%	0.6167%
Oct-51	-1.0300%	0.2900%	0.2300%	0.2408%	0.2442%	0.2425%	0.2483%	0.2642%	-1.2600%	-1.2725%	0.0417%
Nov-51	0.9600%	1.2000%	0.2100%	0.2467%	0.2517%	0.2492%	0.2575%	0.2700%	0.7500%	0.7108%	0.9425%
Dec-51	4.2400%	3.5200%	0.2200%	0.2508%	0.2550%	0.2529%	0.2592%	0.2742%	4.0200%	3.9871%	3.2608%
Jan-52	1.8100%	3.0500%	0.2300%	0.2483%	0.2542%	0.2513%	0.2550%	0.2742%	1.5800%	1.5588%	2.7950%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp		Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Feb-52	-2.8200%	0.5900%	0.2100%	0.2442%	0.2508%	0.2475%	0.2508%	0.2692%	-3.0300%	-3.0675%	0.3392%	
Mar-52	5.0300%	1.7600%	0.2300%	0.2467%	0.2525%	0.2496%	0.2542%	0.2708%	4.8000%	4.7804%	1.5058%	
Apr-52	-4.0200%	-1.5400%	0.2200%	0.2442%	0.2508%	0.2475%	0.2517%	0.2692%	-4.2400%	-4.2675%	-1.7917%	
May-52	3.4300%	1.9000%	0.2000%	0.2442%	0.2500%	0.2471%	0.2517%	0.2683%	3.2300%	3.1829%	1.6483%	
Jun-52	4.9000%	0.4900%	0.2200%	0.2450%	0.2525%	0.2488%	0.2533%	0.2683%	4.6800%	4.6513%	0.2367%	
Jul-52	1.9600%	2.0600%	0.2200%	0.2458%	0.2533%	0.2496%	0.2542%	0.2683%	1.7400%	1.7104%	1.8058%	
Aug-52	-0.7100%	2.0300%	0.2100%	0.2450%	0.2550%	0.2500%	0.2550%	0.2700%	-0.9200%	-0.9600%	1.7750%	
Sep-52	-1.7600%	0.1500%	0.2300%	0.2458%	0.2558%	0.2508%	0.2550%	0.2700%	-1.9900%	-2.0108%	-0.1050%	
Oct-52	0.2000%	1.0100%	0.2300%	0.2508%	0.2567%	0.2538%	0.2567%	0.2717%	-0.0300%	-0.0538%	0.7533%	
Nov-52	5.7100%	4.2300%	0.2100%	0.2483%	0.2550%	0.2517%	0.2542%	0.2700%	5.5000%	5.4583%	3.9758%	
Dec-52	3.8200%	2.1300%	0.2400%	0.2475%	0.2542%	0.2508%	0.2542%	0.2683%	3.5800%	3.5692%	1.8758%	
Jan-53	-0.4900%	1.0300%	0.2300%	0.2517%	0.2575%	0.2546%	0.2592%	0.2708%	-0.7200%	-0.7446%	0.7708%	
Feb-53	-1.0600%	-0.6700%	0.2100%	0.2558%	0.2617%	0.2588%	0.2650%	0.2750%	-1.2700%	-1.3188%	-0.9350%	
Mar-53	-2.1200%	-0.4300%	0.2500%	0.2600%	0.2650%	0.2625%	0.2683%	0.2800%	-2.3700%	-2.3825%	-0.6983%	
Apr-53	-2.3700%	-1.9200%	0.2400%	0.2692%	0.2742%	0.2717%	0.2792%	0.2892%	-2.6100%	-2.6417%	-2.1992%	
May-53	0.7700%	0.2400%	0.2400%	0.2783%	0.2842%	0.2813%	0.2917%	0.3025%	0.5300%	0.4888%	-0.0517%	
Jun-53	-1.3400%	-2.7300%	0.2700%	0.2833%	0.2917%	0.2875%	0.2975%	0.3092%	-1.6100%	-1.6275%	-0.3275%	
Jul-53	2.7300%	3.4500%	0.2500%	0.2733%	0.2850%	0.2792%	0.2842%	0.3050%	2.4800%	2.4508%	3.1658%	
Aug-53	-5.0100%	0.1600%	0.2500%	0.2700%	0.2825%	0.2763%	0.2817%	0.3008%	-5.2600%	-5.2863%	-0.1217%	
Sep-53	0.3400%	1.1900%	0.2500%	0.2742%	0.2858%	0.2800%	0.2850%	0.3017%	0.0900%	0.0600%	0.9050%	
Oct-53	5.4000%	4.1100%	0.2300%	0.2633%	0.2775%	0.2704%	0.2725%	0.2908%	5.1700%	5.1296%	3.8375%	
Nov-53	2.0400%	2.7400%	0.2400%	0.2592%	0.2725%	0.2658%	0.2667%	0.2833%	1.8000%	1.7742%	2.4733%	
Dec-53	0.5300%	0.6400%	0.2400%	0.2608%	0.2733%	0.2671%	0.2675%	0.2817%	0.2900%	0.2629%	0.3725%	
Jan-54	5.3600%	3.2700%	0.2300%	0.2550%	0.2683%	0.2617%	0.2617%	0.2767%	5.1300%	5.0983%	3.0083%	
Feb-54	1.1100%	1.1700%	0.2200%	0.2458%	0.2600%	0.2529%	0.2525%	0.2692%	0.8900%	0.8571%	0.9175%	
Mar-54	3.2500%	2.7000%	0.2500%	0.2383%	0.2525%	0.2454%	0.2442%	0.2633%	3.0000%	3.0046%	2.4558%	
Apr-54	5.1600%	1.2100%	0.2200%	0.2375%	0.2500%	0.2438%	0.2450%	0.2633%	4.9400%	4.9163%	0.9650%	
May-54	4.1800%	2.5700%	0.2000%	0.2400%	0.2525%	0.2463%	0.2475%	0.2617%	3.9800%	3.9338%	2.3225%	
Jun-54	0.3100%	0.9600%	0.2500%	0.2417%	0.2550%	0.2483%	0.2500%	0.2633%	0.0600%	0.0617%	0.7100%	
Jul-54	5.8900%	4.9500%	0.2200%	0.2408%	0.2533%	0.2471%	0.2492%	0.2617%	5.6700%	5.6429%	4.7008%	
Aug-54	-2.7500%	-1.3100%	0.2300%	0.2392%	0.2525%	0.2458%	0.2483%	0.2608%	-2.9800%	-2.9958%	-1.5583%	
Sep-54	8.5100%	1.7800%	0.2200%	0.2408%	0.2533%	0.2471%	0.2500%	0.2600%	8.2900%	8.2629%	1.5300%	
Oct-54	-1.6700%	-3.6800%	0.2100%	0.2392%	0.2533%	0.2463%	0.2492%	0.2600%	-1.8800%	-1.9163%	-3.9292%	
Nov-54	9.0900%	5.6500%	0.2300%	0.2408%	0.2533%	0.2471%	0.2492%	0.2592%	8.8600%	8.8429%	5.4008%	
Dec-54	5.3400%	3.4100%	0.2300%	0.2417%	0.2533%	0.2475%	0.2492%	0.2592%	5.1100%	5.0925%	3.1608%	
Jan-55	1.9700%	1.4300%	0.2200%	0.2442%	0.2550%	0.2496%	0.2508%	0.2608%	1.7500%	1.7204%	1.1792%	
Feb-55	0.9800%	3.4400%	0.2200%	0.2442%	0.2583%	0.2513%	0.2550%	0.2617%	0.7600%	0.7288%	3.1850%	
Mar-55	-0.3000%	-1.1000%	0.2400%	0.2517%	0.2608%	0.2563%	0.2575%	0.2625%	-0.5400%	-0.5563%	-1.3575%	
Apr-55	3.9600%	2.0200%	0.2200%	0.2508%	0.2608%	0.2558%	0.2567%	0.2625%	3.7400%	3.7042%	1.7633%	
May-55	0.5500%	-0.5800%	0.2500%	0.2533%	0.2625%	0.2579%	0.2592%	0.2658%	0.3000%	0.2921%	-0.8392%	
Jun-55	8.4100%	2.1100%	0.2300%	0.2542%	0.2617%	0.2579%	0.2600%	0.2675%	8.1800%	8.1521%	1.8500%	
Jul-55	6.2200%	4.6600%	0.2300%	0.2550%	0.2617%	0.2583%	0.2608%	0.2675%	5.9900%	5.9617%	4.3992%	
Aug-55	-0.2500%	0.5200%	0.2700%	0.2592%	0.2667%	0.2629%	0.2642%	0.2700%	-0.5200%	-0.5129%	0.2558%	
Sep-55	1.3000%	-2.9000%	0.2400%	0.2608%	0.2683%	0.2646%	0.2675%	0.2725%	1.0600%	1.0354%	-3.1675%	
Oct-55	-2.8400%	-0.8500%	0.2500%	0.2583%	0.2658%	0.2621%	0.2650%	0.2750%	-3.0900%	-3.1021%	-1.1150%	

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp		Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Nov-55	8.2700%	2.9200%	0.2400%	0.2583%	0.2650%	0.2617%	0.2642%	0.2767%	8.0300%	8.0083%	2.6558%	
Dec-55	0.1500%	-0.6700%	0.2400%	0.2625%	0.2683%	0.2654%	0.2692%	0.2792%	-0.0900%	-0.1154%	-0.9392%	
Jan-56	-3.4700%	0.3000%	0.2500%	0.2592%	0.2658%	0.2625%	0.2642%	0.2758%	-3.7200%	-3.7325%	0.0358%	
Feb-56	4.1300%	1.7800%	0.2300%	0.2567%	0.2633%	0.2600%	0.2608%	0.2742%	3.9000%	3.8700%	1.5192%	
Mar-56	7.1000%	3.9400%	0.2300%	0.2583%	0.2650%	0.2617%	0.2633%	0.2742%	6.8700%	6.8383%	3.6767%	
Apr-56	-0.0400%	-2.8700%	0.2600%	0.2700%	0.2750%	0.2725%	0.2750%	0.2833%	-0.3000%	-0.3125%	-3.1450%	
May-56	-5.9300%	-1.3800%	0.2600%	0.2733%	0.2783%	0.2758%	0.2783%	0.2900%	-6.1900%	-6.2058%	-1.6583%	
Jun-56	4.0900%	2.1100%	0.2300%	0.2717%	0.2792%	0.2754%	0.2783%	0.2908%	3.8600%	3.8146%	1.8317%	
Jul-56	5.3000%	5.2500%	0.2600%	0.2733%	0.2825%	0.2779%	0.2808%	0.2958%	5.0400%	5.0221%	4.9692%	
Aug-56	-3.2800%	-2.5900%	0.2600%	0.2858%	0.2917%	0.2888%	0.2900%	0.3025%	-3.5400%	-3.5688%	-2.8800%	
Sep-56	-4.4000%	-3.1900%	0.2500%	0.2967%	0.3025%	0.2996%	0.3008%	0.3100%	-4.6500%	-4.6996%	-3.4908%	
Oct-56	0.6600%	0.6300%	0.2900%	0.2992%	0.3075%	0.3033%	0.3075%	0.3158%	0.3700%	0.3567%	0.3225%	
Nov-56	-0.5000%	0.2800%	0.2700%	0.3075%	0.3133%	0.3104%	0.3133%	0.3183%	-0.7700%	-0.8104%	-0.0333%	
Dec-56	3.7000%	1.0400%	0.2800%	0.3125%	0.3208%	0.3167%	0.3200%	0.3258%	3.4200%	3.3833%	0.7200%	
Jan-57	-4.0100%	3.2400%	0.2900%	0.3142%	0.3242%	0.3192%	0.3225%	0.3300%	-4.3000%	-4.3292%	2.9175%	
Feb-57	-2.6400%	-0.6100%	0.2500%	0.3058%	0.3192%	0.3125%	0.3175%	0.3375%	-2.8900%	-2.9525%	-0.9275%	
Mar-57	2.1500%	0.7800%	0.2600%	0.3050%	0.3167%	0.3108%	0.3167%	0.3375%	1.8900%	1.8392%	0.4633%	
Apr-57	3.8800%	4.0200%	0.2900%	0.3058%	0.3158%	0.3108%	0.3167%	0.3342%	3.5900%	3.5692%	3.7033%	
May-57	4.3700%	1.8000%	0.2900%	0.3117%	0.3192%	0.3154%	0.3208%	0.3342%	4.0800%	4.0546%	1.4792%	
Jun-57	0.0400%	-4.1800%	0.2500%	0.3258%	0.3317%	0.3288%	0.3283%	0.3408%	-0.2100%	-0.2888%	-4.5083%	
Jul-57	1.3100%	0.3500%	0.3300%	0.3325%	0.3417%	0.3371%	0.3417%	0.3500%	0.9800%	0.9729%	0.0083%	
Aug-57	-5.0500%	-2.9400%	0.3000%	0.3417%	0.3508%	0.3463%	0.3542%	0.3642%	-5.3500%	-5.3963%	-3.2942%	
Sep-57	-6.0200%	-1.3800%	0.3100%	0.3433%	0.3550%	0.3492%	0.3592%	0.3792%	-6.3300%	-6.3692%	-1.7392%	
Oct-57	-3.0200%	-0.7400%	0.3100%	0.3417%	0.3567%	0.3492%	0.3600%	0.3842%	-3.3300%	-3.3692%	-1.1000%	
Nov-57	2.3100%	4.2800%	0.2900%	0.3400%	0.3575%	0.3488%	0.3583%	0.3850%	2.0200%	1.9613%	3.9217%	
Dec-57	-3.9500%	1.9500%	0.2900%	0.3175%	0.3400%	0.3288%	0.3375%	0.3633%	-4.2400%	-4.2788%	1.6125%	
Jan-58	4.4500%	6.0200%	0.2700%	0.3000%	0.3175%	0.3088%	0.3108%	0.3275%	4.1800%	4.1413%	5.7092%	
Feb-58	-1.4100%	1.3700%	0.2500%	0.2992%	0.3142%	0.3067%	0.3067%	0.3300%	-1.6600%	-1.7167%	1.0633%	
Mar-58	3.2800%	2.0000%	0.2700%	0.3025%	0.3150%	0.3088%	0.3108%	0.3442%	3.0100%	2.9713%	1.6892%	
Apr-58	3.3700%	5.1600%	0.2600%	0.3000%	0.3150%	0.3075%	0.3100%	0.3292%	3.1100%	3.0625%	4.8500%	
May-58	2.1200%	1.6400%	0.2400%	0.2975%	0.3150%	0.3063%	0.3075%	0.3342%	1.8800%	1.8138%	1.3325%	
Jun-58	2.7900%	1.7200%	0.2700%	0.2975%	0.3150%	0.3063%	0.3083%	0.3325%	2.5200%	2.4838%	1.4117%	
Jul-58	4.4900%	1.0900%	0.2700%	0.3058%	0.3192%	0.3125%	0.3158%	0.3367%	4.2200%	4.1775%	0.7742%	
Aug-58	1.7600%	-0.6700%	0.2700%	0.3208%	0.3317%	0.3263%	0.3317%	0.3575%	1.4900%	1.4338%	-1.0017%	
Sep-58	5.0100%	3.3200%	0.3200%	0.3408%	0.3500%	0.3454%	0.3533%	0.3792%	4.6900%	4.6646%	2.9667%	
Oct-58	2.7000%	4.0600%	0.3200%	0.3425%	0.3508%	0.3467%	0.3575%	0.3800%	2.3800%	2.3533%	3.7025%	
Nov-58	2.8400%	2.6300%	0.2800%	0.3408%	0.3508%	0.3458%	0.3542%	0.3725%	2.5600%	2.4942%	2.2758%	
Dec-58	5.3500%	6.5500%	0.3300%	0.3400%	0.3483%	0.3442%	0.3517%	0.3742%	5.0200%	5.0058%	6.1983%	
Jan-59	0.5300%	1.3400%	0.3100%	0.3433%	0.3517%	0.3475%	0.3558%	0.3767%	0.2200%	0.1825%	0.9842%	
Feb-59	0.4900%	2.0600%	0.3100%	0.3450%	0.3533%	0.3492%	0.3592%	0.3750%	0.1800%	0.1408%	1.7008%	
Mar-59	0.2000%	1.0200%	0.3500%	0.3442%	0.3525%	0.3483%	0.3583%	0.3725%	-0.1500%	-0.1483%	0.6617%	
Apr-59	4.0200%	-0.2800%	0.3300%	0.3525%	0.3600%	0.3563%	0.3667%	0.3800%	3.6900%	3.6638%	-0.6467%	
May-59	2.4000%	-1.2000%	0.3300%	0.3642%	0.3717%	0.3679%	0.3808%	0.3975%	2.0700%	2.0321%	-1.5808%	
Jun-59	-0.2200%	-0.8800%	0.3600%	0.3717%	0.3800%	0.3758%	0.3892%	0.4050%	-0.5800%	-0.5958%	-1.2692%	
Jul-59	3.6300%	3.7100%	0.3500%	0.3725%	0.3817%	0.3771%	0.3867%	0.4067%	3.2800%	3.2529%	3.3233%	

	Avg Aaa and Aa										
	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Aug-59	-1.0200%	1.7500%	0.3500%	0.3692%	0.3817%	0.3754%	0.3833%	0.4075%	-1.3700%	-1.3954%	1.3667%
Sep-59	-4.4300%	-3.9300%	0.3400%	0.3767%	0.3908%	0.3838%	0.3933%	0.4192%	-4.7700%	-4.8138%	-4.3233%
Oct-59	1.2800%	1.5700%	0.3500%	0.3808%	0.3967%	0.3888%	0.3992%	0.4133%	0.9300%	0.8913%	1.1708%
Nov-59	1.8600%	0.0100%	0.3500%	0.3800%	0.3917%	0.3858%	0.3900%	0.4083%	1.5100%	1.4742%	-0.3800%
Dec-59	2.9200%	2.3000%	0.3600%	0.3817%	0.3950%	0.3883%	0.3925%	0.4133%	2.5600%	2.5317%	1.9075%
Jan-60	-7.0000%	-1.0800%	0.3500%	0.3842%	0.3975%	0.3908%	0.3967%	0.4183%	-7.3500%	-7.3908%	-1.4767%
Feb-60	1.4700%	1.8100%	0.3700%	0.3800%	0.3925%	0.3863%	0.3900%	0.4167%	1.1000%	1.0838%	1.4200%
Mar-60	-1.2300%	1.4100%	0.3600%	0.3742%	0.3850%	0.3796%	0.3817%	0.4092%	-1.5900%	-1.6096%	1.0283%
Apr-60	-1.6100%	0.7500%	0.3200%	0.3708%	0.3817%	0.3763%	0.3783%	0.3992%	-1.9300%	-1.9863%	0.3717%
May-60	3.2600%	2.3300%	0.3700%	0.3717%	0.3842%	0.3779%	0.3808%	0.4050%	2.8900%	2.8821%	1.9492%
Jun-60	2.1100%	4.0800%	0.3400%	0.3708%	0.3833%	0.3771%	0.3817%	0.4033%	1.7700%	1.7329%	3.6983%
Jul-60	-2.3400%	-1.0000%	0.3200%	0.3675%	0.3800%	0.3738%	0.3783%	0.3992%	-2.6600%	-2.7138%	-1.3783%
Aug-60	3.1700%	5.0200%	0.3400%	0.3567%	0.3700%	0.3633%	0.3633%	0.3867%	2.8300%	2.8067%	4.6567%
Sep-60	-5.9000%	-5.1400%	0.3200%	0.3542%	0.3675%	0.3608%	0.3633%	0.3808%	-6.2200%	-6.2608%	-5.5033%
Oct-60	-0.0700%	-0.1200%	0.3300%	0.3583%	0.3700%	0.3642%	0.3683%	0.3842%	-0.4000%	-0.4342%	-0.4883%
Nov-60	4.6500%	3.8600%	0.3200%	0.3592%	0.3725%	0.3658%	0.3708%	0.3851%	4.3300%	4.2842%	3.4892%
Dec-60	4.7900%	7.2400%	0.3300%	0.3625%	0.3750%	0.3688%	0.3742%	0.3875%	4.4600%	4.4213%	6.8658%
Jan-61	6.4500%	6.1900%	0.3300%	0.3600%	0.3733%	0.3667%	0.3733%	0.3867%	6.1200%	6.0833%	5.8167%
Feb-61	3.1900%	3.5700%	0.3000%	0.3558%	0.3667%	0.3613%	0.3658%	0.3825%	2.8900%	2.8288%	3.2042%
Mar-61	2.7000%	3.1900%	0.3100%	0.3517%	0.3608%	0.3563%	0.3575%	0.3733%	2.3900%	2.3438%	2.8325%
Apr-61	0.5100%	1.0900%	0.3100%	0.3542%	0.3642%	0.3592%	0.3617%	0.3733%	0.2000%	0.1508%	0.7283%
May-61	2.3900%	1.3300%	0.3400%	0.3558%	0.3675%	0.3617%	0.3650%	0.3767%	2.0500%	2.0283%	0.9650%
Jun-61	-2.7500%	-2.2700%	0.3200%	0.3608%	0.3708%	0.3658%	0.3683%	0.3808%	-3.0700%	-3.1158%	-2.6383%
Jul-61	3.4200%	4.2400%	0.3300%	0.3675%	0.3775%	0.3725%	0.3750%	0.3875%	3.0900%	3.0475%	3.8650%
Aug-61	2.4300%	4.5400%	0.3300%	0.3708%	0.3808%	0.3758%	0.3808%	0.3942%	2.1000%	2.0542%	4.1592%
Sep-61	-1.8400%	-0.6700%	0.3200%	0.3708%	0.3825%	0.3767%	0.3817%	0.3942%	-2.1600%	-2.2167%	-1.0517%
Oct-61	2.9800%	4.8000%	0.3400%	0.3683%	0.3800%	0.3742%	0.3775%	0.3925%	2.6400%	2.6058%	4.4225%
Nov-61	4.4700%	3.3500%	0.3200%	0.3658%	0.3783%	0.3721%	0.3742%	0.3900%	4.1500%	4.0979%	2.9758%
Dec-61	0.4600%	-2.9200%	0.3100%	0.3683%	0.3800%	0.3742%	0.3750%	0.3875%	0.1500%	0.0858%	-3.2950%
Jan-62	-3.6600%	-3.6600%	0.3700%	0.3683%	0.3792%	0.3738%	0.3750%	0.3875%	-4.0300%	-4.0338%	-4.0350%
Feb-62	2.0900%	3.0000%	0.3200%	0.3683%	0.3800%	0.3742%	0.3767%	0.3883%	1.7700%	1.7158%	2.6233%
Mar-62	-0.4600%	0.8100%	0.3300%	0.3658%	0.3775%	0.3717%	0.3750%	0.3867%	-0.7900%	-0.8317%	0.4350%
Apr-62	-6.0700%	-3.5300%	0.3300%	0.3608%	0.3742%	0.3675%	0.3725%	0.3825%	-6.4000%	-6.4375%	-3.9025%
May-62	-8.1100%	-9.1200%	0.3200%	0.3567%	0.3692%	0.3629%	0.3675%	0.3758%	-8.4300%	-8.4729%	-9.4875%
Jun-62	-8.0300%	-5.4800%	0.3000%	0.3567%	0.3700%	0.3633%	0.3650%	0.3733%	-8.3300%	-8.3933%	-5.8450%
Jul-62	6.5200%	6.8900%	0.3400%	0.3617%	0.3742%	0.3679%	0.3667%	0.3750%	6.1800%	6.1521%	6.5233%
Aug-62	2.0800%	2.7100%	0.3400%	0.3625%	0.3742%	0.3683%	0.3667%	0.3775%	1.7400%	1.7117%	2.3433%
Sep-62	-4.6500%	-3.3400%	0.3000%	0.3600%	0.3717%	0.3658%	0.3642%	0.3758%	-4.9500%	-5.0158%	-3.7042%
Oct-62	0.6400%	-0.1400%	0.3500%	0.3567%	0.3675%	0.3621%	0.3625%	0.3742%	0.2900%	0.2779%	-0.5025%
Nov-62	10.8600%	7.6800%	0.3100%	0.3542%	0.3667%	0.3604%	0.3608%	0.3708%	10.5500%	10.4996%	7.3192%
Dec-62	1.5300%	3.1200%	0.3200%	0.3533%	0.3650%	0.3592%	0.3592%	0.3700%	1.2100%	1.1708%	2.7608%
Jan-63	5.0600%	5.5800%	0.3200%	0.3508%	0.3642%	0.3575%	0.3567%	0.3658%	4.7400%	4.7025%	5.2233%
Feb-63	-2.3900%	-2.0600%	0.2900%	0.3492%	0.3633%	0.3563%	0.3567%	0.3642%	-2.6800%	-2.7463%	-2.4167%
Mar-63	3.7000%	1.8600%	0.3100%	0.3492%	0.3617%	0.3554%	0.3558%	0.3642%	3.3900%	3.3446%	1.5042%
Apr-63	5.0000%	2.3200%	0.3400%	0.3508%	0.3625%	0.3567%	0.3575%	0.3642%	4.6600%	4.6433%	1.9625%

	Avg Aaa and Aa										
Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA	
May-63	1.9300%	0.7000%	0.3300%	0.3517%	0.3633%	0.3575%	0.3575%	0.3642%	1.6000%	1.5725%	0.3425%
Jun-63	-1.8800%	-1.2300%	0.3000%	0.3525%	0.3633%	0.3579%	0.3575%	0.3642%	-2.1800%	-2.2379%	-1.5875%
Jul-63	-0.2200%	1.2300%	0.3600%	0.3550%	0.3658%	0.3604%	0.3600%	0.3658%	-0.5800%	-0.5804%	0.8700%
Aug-63	5.3500%	4.2500%	0.3300%	0.3575%	0.3667%	0.3621%	0.3608%	0.3650%	5.0200%	4.9879%	3.8892%
Sep-63	-0.9700%	-2.5800%	0.3400%	0.3592%	0.3675%	0.3633%	0.3625%	0.3667%	-1.3100%	-1.3333%	-2.9425%
Oct-63	3.3900%	-0.3300%	0.3400%	0.3600%	0.3692%	0.3646%	0.3642%	0.3675%	3.0500%	3.0254%	-0.6942%
Nov-63	-0.4600%	-0.8200%	0.3200%	0.3608%	0.3700%	0.3654%	0.3642%	0.3683%	-0.7800%	-0.8254%	-1.1842%
Dec-63	2.6200%	3.1700%	0.3600%	0.3625%	0.3717%	0.3671%	0.3658%	0.3717%	2.2600%	2.2529%	2.8042%
Jan-64	2.8300%	1.2700%	0.3500%	0.3642%	0.3742%	0.3692%	0.3683%	0.3742%	2.4800%	2.4608%	0.9017%
Feb-64	1.4700%	0.3200%	0.3200%	0.3633%	0.3717%	0.3675%	0.3667%	0.3750%	1.1500%	1.1025%	-0.0467%
Mar-64	1.6500%	-0.3500%	0.3700%	0.3650%	0.3725%	0.3688%	0.3683%	0.3758%	1.2800%	1.2813%	-0.7183%
Apr-64	0.7500%	0.6700%	0.3500%	0.3667%	0.3742%	0.3704%	0.3708%	0.3767%	0.4000%	0.3796%	0.2992%
May-64	1.6200%	0.3200%	0.3200%	0.3675%	0.3750%	0.3713%	0.3708%	0.3775%	1.3000%	1.2488%	-0.0508%
Jun-64	1.7800%	2.3400%	0.3800%	0.3675%	0.3758%	0.3717%	0.3717%	0.3792%	1.4000%	1.4083%	1.9683%
Jul-64	1.9500%	4.7100%	0.3500%	0.3667%	0.3750%	0.3708%	0.3708%	0.3783%	1.6000%	1.5792%	4.3392%
Aug-64	-1.1800%	0.3100%	0.3500%	0.3675%	0.3742%	0.3708%	0.3708%	0.3783%	-1.5300%	-1.5508%	-0.0608%
Sep-64	3.0100%	1.7000%	0.3400%	0.3683%	0.3733%	0.3708%	0.3700%	0.3775%	2.6700%	2.6392%	1.3300%
Oct-64	0.9600%	1.6500%	0.3400%	0.3683%	0.3742%	0.3713%	0.3700%	0.3758%	0.6200%	0.5888%	1.2800%
Nov-64	0.0500%	1.1400%	0.3500%	0.3692%	0.3742%	0.3717%	0.3708%	0.3775%	-0.3000%	-0.3217%	0.7692%
Dec-64	0.5600%	0.8600%	0.3500%	0.3700%	0.3750%	0.3725%	0.3717%	0.3783%	0.2100%	0.1875%	0.4883%
Jan-65	3.4500%	3.7100%	0.3300%	0.3692%	0.3733%	0.3713%	0.3700%	0.3775%	3.1200%	3.0788%	3.3400%
Feb-65	0.3100%	0.0900%	0.3200%	0.3675%	0.3717%	0.3696%	0.3692%	0.3758%	-0.0100%	-0.0596%	-0.2792%
Mar-65	-1.3300%	0.0700%	0.3800%	0.3683%	0.3733%	0.3708%	0.3700%	0.3750%	-1.7100%	-1.7008%	-0.3000%
Apr-65	3.5600%	1.0900%	0.3300%	0.3692%	0.3733%	0.3713%	0.3700%	0.3742%	3.2300%	3.1888%	0.7200%
May-65	-0.3000%	-0.8400%	0.3300%	0.3700%	0.3742%	0.3721%	0.3717%	0.3750%	-0.6300%	-0.6721%	-1.2117%
Jun-65	-4.7300%	-3.4000%	0.3800%	0.3717%	0.3767%	0.3742%	0.3742%	0.3767%	-5.1100%	-5.1042%	-3.7742%
Jul-65	1.4700%	1.0500%	0.3400%	0.3733%	0.3800%	0.3767%	0.3750%	0.3783%	1.1300%	1.0933%	0.6750%
Aug-65	2.7200%	0.9700%	0.3700%	0.3742%	0.3825%	0.3783%	0.3775%	0.3817%	2.3500%	2.3417%	0.5925%
Sep-65	3.3400%	1.9400%	0.3500%	0.3767%	0.3858%	0.3813%	0.3808%	0.3858%	2.9900%	2.9588%	1.5592%
Oct-65	2.8900%	1.2900%	0.3400%	0.3800%	0.3883%	0.3842%	0.3833%	0.3883%	2.5500%	2.5058%	0.9067%
Nov-65	-0.3100%	-1.1600%	0.3700%	0.3833%	0.3908%	0.3871%	0.3867%	0.3925%	-0.6800%	-0.6971%	-1.5467%
Dec-65	1.0600%	-0.0800%	0.3700%	0.3900%	0.4000%	0.3950%	0.3958%	0.4025%	0.6900%	0.6650%	-0.4758%
Jan-66	0.6200%	-2.9700%	0.3800%	0.3950%	0.4025%	0.3988%	0.3983%	0.4050%	0.2400%	0.2213%	-3.3683%
Feb-66	-1.3100%	-4.1400%	0.3400%	0.3983%	0.4083%	0.4033%	0.4033%	0.4100%	-1.6500%	-1.7133%	-4.5433%
Mar-66	-2.0500%	-0.4500%	0.4000%	0.4100%	0.4208%	0.4154%	0.4183%	0.4283%	-2.4500%	-2.4654%	-0.8683%
Apr-66	2.2000%	1.7200%	0.3600%	0.4108%	0.4250%	0.4179%	0.4267%	0.4375%	1.8400%	1.7821%	1.2933%
May-66	-4.9200%	-2.9600%	0.4100%	0.4150%	0.4250%	0.4200%	0.4267%	0.4375%	-5.3300%	-5.3400%	-3.3867%
Jun-66	-1.4600%	-1.8100%	0.3900%	0.4225%	0.4300%	0.4263%	0.4325%	0.4500%	-1.8500%	-1.8863%	-2.2425%
Jul-66	-1.2000%	0.0900%	0.3800%	0.4300%	0.4375%	0.4338%	0.4400%	0.4542%	-1.5800%	-1.6338%	-0.3500%
Aug-66	-7.2500%	-8.7500%	0.4300%	0.4425%	0.4483%	0.4454%	0.4533%	0.4650%	-7.6800%	-7.6954%	-9.2033%
Sep-66	-0.5300%	4.7500%	0.4100%	0.4575%	0.4650%	0.4613%	0.4742%	0.4842%	-0.9400%	-0.9913%	4.2758%
Oct-66	4.9400%	9.7000%	0.4000%	0.4508%	0.4583%	0.4546%	0.4625%	0.4783%	4.5400%	4.4854%	9.2375%
Nov-66	0.9500%	-0.7600%	0.3800%	0.4458%	0.4550%	0.4504%	0.4567%	0.4692%	0.5700%	0.4996%	-1.2167%
Dec-66	0.0200%	2.2100%	0.3900%	0.4492%	0.4567%	0.4529%	0.4550%	0.4725%	-0.3700%	-0.4329%	1.7550%
Jan-67	7.9800%	2.7100%	0.4000%	0.4333%	0.4417%	0.4375%	0.4358%	0.4550%	7.5800%	7.5425%	2.2742%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp		Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Feb-67	0.7200%	-1.5700%	0.3400%	0.4192%	0.4317%	0.4254%	0.4217%	0.4400%	0.3800%	0.2946%	-1.9917%	
Mar-67	4.0900%	1.9700%	0.3900%	0.4275%	0.4358%	0.4317%	0.4333%	0.4533%	3.7000%	3.6583%	1.5367%	
Apr-67	4.3700%	2.0200%	0.3500%	0.4258%	0.4383%	0.4321%	0.4317%	0.4517%	4.0200%	3.9379%	1.5883%	
May-67	-4.7700%	-5.0600%	0.4300%	0.4367%	0.4517%	0.4442%	0.4517%	0.4717%	-5.2000%	-5.2142%	-5.5117%	
Jun-67	1.9000%	-1.3100%	0.3900%	0.4533%	0.4692%	0.4613%	0.4742%	0.4867%	1.5100%	1.4388%	-1.7842%	
Jul-67	4.6800%	2.0400%	0.4300%	0.4650%	0.4767%	0.4708%	0.4800%	0.4950%	4.2500%	4.2092%	1.5600%	
Aug-67	-0.7000%	-0.6500%	0.4200%	0.4683%	0.4800%	0.4742%	0.4850%	0.4967%	-1.1200%	-1.1742%	-1.1350%	
Sep-67	3.4200%	-0.3700%	0.4000%	0.4708%	0.4892%	0.4800%	0.4917%	0.5042%	3.0200%	2.9400%	-0.8617%	
Oct-67	-2.7600%	-5.7200%	0.4500%	0.4850%	0.5008%	0.4929%	0.4992%	0.5150%	-3.2100%	-3.2529%	-6.2192%	
Nov-67	0.6500%	2.9300%	0.4500%	0.5058%	0.5192%	0.5125%	0.5242%	0.5400%	0.2000%	0.1375%	2.4058%	
Dec-67	2.7800%	2.8600%	0.4400%	0.5158%	0.5292%	0.5225%	0.5333%	0.5558%	2.3400%	2.2575%	2.3267%	
Jan-68	-4.2500%	0.8200%	0.5000%	0.5142%	0.5242%	0.5192%	0.5267%	0.5450%	-4.7500%	-4.7692%	0.2933%	
Feb-68	-2.6100%	-2.3300%	0.4200%	0.5083%	0.5225%	0.5154%	0.5200%	0.5308%	-3.0300%	-3.1254%	-2.8500%	
Mar-68	1.1000%	-3.9900%	0.4300%	0.5092%	0.5233%	0.5163%	0.5217%	0.5342%	0.6700%	0.5838%	-4.5117%	
Apr-68	8.3400%	2.7500%	0.4900%	0.5175%	0.5317%	0.5246%	0.5317%	0.5483%	7.8500%	7.8154%	2.2183%	
May-68	1.6100%	-0.6200%	0.4600%	0.5225%	0.5400%	0.5313%	0.5383%	0.5517%	1.1500%	1.0788%	-1.1583%	
Jun-68	1.0500%	8.0700%	0.4200%	0.5233%	0.5417%	0.5325%	0.5383%	0.5517%	0.6300%	0.5175%	7.5317%	
Jul-68	-1.7200%	-0.7000%	0.4800%	0.5200%	0.5375%	0.5288%	0.5317%	0.5442%	-2.2000%	-2.2488%	-1.2317%	
Aug-68	1.6400%	0.0400%	0.4200%	0.5017%	0.5208%	0.5113%	0.5108%	0.5225%	1.2200%	1.1288%	-0.4708%	
Sep-68	4.0000%	1.0000%	0.4400%	0.4975%	0.5192%	0.5083%	0.5100%	0.5225%	3.5600%	3.4917%	0.4900%	
Oct-68	0.8700%	0.8600%	0.4500%	0.5075%	0.5267%	0.5171%	0.5217%	0.5333%	0.4200%	0.3529%	0.3383%	
Nov-68	5.3100%	7.8100%	0.4300%	0.5158%	0.5375%	0.5267%	0.5392%	0.5492%	4.8800%	4.7833%	7.2708%	
Dec-68	-4.0200%	-3.0900%	0.4900%	0.5375%	0.5550%	0.5463%	0.5625%	0.5725%	-4.5100%	-4.5663%	-3.6525%	
Jan-69	-0.6800%	1.6900%	0.5000%	0.5492%	0.5608%	0.5550%	0.5750%	0.5867%	-1.1800%	-1.2350%	1.1150%	
Feb-69	-4.2600%	-5.3200%	0.4600%	0.5550%	0.5642%	0.5596%	0.5742%	0.5942%	-4.7200%	-4.8196%	-5.8942%	
Mar-69	3.5900%	-0.9600%	0.4700%	0.5708%	0.5792%	0.5750%	0.5900%	0.6058%	3.1200%	3.0150%	-1.5500%	
Apr-69	2.2900%	1.3900%	0.5500%	0.5742%	0.5850%	0.5796%	0.5925%	0.6083%	1.7400%	1.7104%	0.7975%	
May-69	0.2600%	-0.0600%	0.4700%	0.5658%	0.5800%	0.5729%	0.5825%	0.5967%	-0.2100%	-0.3129%	-0.6425%	
Jun-69	-5.4200%	-5.1600%	0.5500%	0.5817%	0.5933%	0.5875%	0.6042%	0.6175%	-5.9700%	-6.0075%	-5.7642%	
Jul-69	-5.8700%	-3.6300%	0.5200%	0.5900%	0.6033%	0.5967%	0.6150%	0.6267%	-6.3900%	-6.4667%	-4.2450%	
Aug-69	4.5400%	-1.1400%	0.4800%	0.5808%	0.6025%	0.5917%	0.6117%	0.6200%	4.0600%	3.9483%	-1.7517%	
Sep-69	-2.3600%	-3.7200%	0.5500%	0.5950%	0.6133%	0.6042%	0.6250%	0.6358%	-2.9100%	-2.9642%	-4.3450%	
Oct-69	4.5900%	7.9800%	0.5700%	0.6108%	0.6275%	0.6192%	0.6425%	0.6683%	4.0200%	3.9708%	7.3375%	
Nov-69	-2.9700%	-5.8800%	0.4900%	0.6125%	0.6317%	0.6221%	0.6458%	0.6667%	-3.4600%	-3.5921%	-6.5258%	
Dec-69	-1.7700%	-0.9700%	0.6000%	0.6433%	0.6608%	0.6521%	0.6858%	0.7158%	-2.3700%	-2.4221%	-1.6558%	
Jan-70	-7.4300%	-4.5300%	0.5600%	0.6592%	0.6792%	0.6692%	0.7000%	0.7242%	-7.9900%	-8.0992%	-5.2300%	
Feb-70	5.5800%	10.5300%	0.5200%	0.6608%	0.6775%	0.6692%	0.6917%	0.7092%	5.0600%	4.9108%	9.8383%	
Mar-70	0.4400%	2.3200%	0.5600%	0.6533%	0.6717%	0.6625%	0.6808%	0.6925%	-0.1200%	-0.2225%	1.6392%	
Apr-70	-8.7500%	-9.2900%	0.5400%	0.6525%	0.6692%	0.6608%	0.6800%	0.6925%	-9.2900%	-9.4108%	-9.9700%	
May-70	-5.7800%	-5.1500%	0.5500%	0.6758%	0.6867%	0.6813%	0.7117%	0.7225%	-6.3300%	-6.4613%	-5.8617%	
Jun-70	-4.6600%	-5.8200%	0.6400%	0.7067%	0.7150%	0.7108%	0.7417%	0.7533%	-5.3000%	-5.3708%	-6.5617%	
Jul-70	7.6900%	9.7300%	0.5900%	0.7033%	0.7200%	0.7117%	0.7342%	0.7550%	7.1000%	6.9783%	8.9958%	
Aug-70	4.7800%	5.8100%	0.5700%	0.6775%	0.7075%	0.6925%	0.7225%	0.7400%	4.2100%	4.0875%	5.0875%	
Sep-70	3.6200%	-1.1400%	0.5600%	0.6742%	0.7058%	0.6900%	0.7217%	0.7350%	3.0600%	2.9300%	-1.8617%	
Oct-70	-0.8300%	-1.4900%	0.5500%	0.6692%	0.7033%	0.6863%	0.7183%	0.7300%	-1.3800%	-1.5163%	-2.2083%	

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp		Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Nov-70	5.0600%	9.7500%	0.5800%	0.6708%	0.7017%	0.6863%	0.7192%	0.7325%	4.4800%	4.3738%	9.0308%	
Dec-70	5.9700%	7.3500%	0.5300%	0.6367%	0.6775%	0.6571%	0.6942%	0.7067%	5.4400%	5.3129%	6.6558%	
Jan-71	4.3200%	2.5700%	0.5100%	0.6133%	0.6583%	0.6358%	0.6733%	0.6792%	3.8100%	3.6842%	1.8967%	
Feb-71	1.1700%	-2.7700%	0.4600%	0.5900%	0.6392%	0.6146%	0.6542%	0.6575%	0.7100%	0.5554%	-3.4242%	
Mar-71	3.9400%	3.3100%	0.5600%	0.6008%	0.6442%	0.6225%	0.6667%	0.6708%	3.3800%	3.3175%	2.6433%	
Apr-71	3.8900%	-3.4900%	0.4800%	0.6042%	0.6450%	0.6246%	0.6633%	0.6725%	3.4100%	3.2654%	-4.1533%	
May-71	-3.9100%	-3.5100%	0.4700%	0.6275%	0.6533%	0.6404%	0.6708%	0.6950%	-4.3800%	-4.5504%	-4.1808%	
Jun-71	0.3300%	3.9800%	0.5600%	0.6367%	0.6633%	0.6500%	0.6900%	0.7042%	-0.2300%	-0.3200%	3.2900%	
Jul-71	-3.8700%	-2.2500%	0.5200%	0.6367%	0.6633%	0.6500%	0.6800%	0.7042%	-4.3900%	-4.5200%	-2.9300%	
Aug-71	3.8800%	-2.4700%	0.5500%	0.6325%	0.6608%	0.6467%	0.6767%	0.7000%	3.3300%	3.2333%	-3.1467%	
Sep-71	-0.4400%	-1.4600%	0.5000%	0.6200%	0.6508%	0.6354%	0.6650%	0.6817%	-0.9400%	-1.0754%	-2.1250%	
Oct-71	-3.9200%	1.7000%	0.4700%	0.6158%	0.6408%	0.6283%	0.6558%	0.6750%	-4.3900%	-4.5483%	1.0442%	
Nov-71	0.0200%	-0.5500%	0.5100%	0.6050%	0.6300%	0.6175%	0.6533%	0.6633%	-0.4900%	-0.5975%	-1.2033%	
Dec-71	8.8800%	8.0600%	0.5000%	0.6042%	0.6308%	0.6175%	0.6517%	0.6583%	8.3800%	8.2625%	7.4083%	
Jan-72	2.0600%	-0.7400%	0.5000%	0.5992%	0.6267%	0.6129%	0.6467%	0.6492%	1.5600%	1.4471%	-1.3867%	
Feb-72	2.7700%	-2.4000%	0.4700%	0.6058%	0.6267%	0.6163%	0.6425%	0.6483%	2.3000%	2.1538%	-3.0425%	
Mar-72	0.8300%	-0.3600%	0.4900%	0.6033%	0.6275%	0.6154%	0.6408%	0.6475%	0.3400%	0.2146%	-1.0008%	
Apr-72	0.6800%	-2.7700%	0.4800%	0.6083%	0.6308%	0.6196%	0.6458%	0.6517%	0.2000%	0.0604%	-3.4158%	
May-72	1.9700%	-0.1700%	0.5500%	0.6083%	0.6300%	0.6192%	0.6467%	0.6533%	1.4200%	1.3508%	-0.8167%	
Jun-72	-1.9400%	-2.1000%	0.4900%	0.6025%	0.6258%	0.6142%	0.6425%	0.6475%	-2.4300%	-2.5542%	-2.7425%	
Jul-72	0.4800%	-0.1400%	0.5100%	0.6008%	0.6250%	0.6129%	0.6317%	0.6517%	-0.0300%	-0.1329%	-0.7717%	
Aug-72	3.6900%	5.7400%	0.4900%	0.5992%	0.6192%	0.6092%	0.6242%	0.6367%	3.2000%	3.0808%	5.1158%	
Sep-72	-0.2500%	0.2700%	0.4700%	0.6017%	0.6175%	0.6096%	0.6233%	0.6342%	-0.7200%	-0.8596%	-0.3533%	
Oct-72	1.1800%	6.5100%	0.5200%	0.6008%	0.6208%	0.6108%	0.6250%	0.6383%	0.6600%	0.5692%	5.8850%	
Nov-72	4.8100%	6.3900%	0.4800%	0.5933%	0.6158%	0.6046%	0.6183%	0.6333%	4.3300%	4.2054%	5.7717%	
Dec-72	1.4200%	-1.7400%	0.4500%	0.5900%	0.6133%	0.6017%	0.6150%	0.6233%	0.9700%	0.8183%	-2.3550%	
Jan-73	-1.4900%	-4.3900%	0.5400%	0.5958%	0.6142%	0.6050%	0.6183%	0.6267%	-2.0300%	-2.0950%	-5.0083%	
Feb-73	-3.5200%	-2.3400%	0.5100%	0.6017%	0.6225%	0.6121%	0.6267%	0.6350%	-4.0300%	-4.1321%	-2.9667%	
Mar-73	0.0800%	-1.3500%	0.5600%	0.6075%	0.6242%	0.6158%	0.6250%	0.6383%	-0.4800%	-0.5358%	-1.9750%	
Apr-73	-3.8300%	-0.4900%	0.5700%	0.6050%	0.6242%	0.6146%	0.6258%	0.6358%	-4.4000%	-4.4446%	-1.1158%	
May-73	-1.6300%	0.6700%	0.5800%	0.6075%	0.6242%	0.6158%	0.6258%	0.6358%	-2.2100%	-2.2458%	0.0442%	
Jun-73	-0.4000%	-1.6700%	0.5500%	0.6142%	0.6292%	0.6217%	0.6325%	0.6425%	-0.9500%	-1.0217%	-2.3025%	
Jul-73	4.0700%	-1.9900%	0.6100%	0.6208%	0.6367%	0.6288%	0.6417%	0.6517%	3.4600%	3.4413%	-2.6317%	
Aug-73	-3.4100%	-2.8400%	0.6200%	0.6400%	0.6533%	0.6467%	0.6600%	0.6700%	-4.0300%	-4.0567%	-3.5000%	
Sep-73	4.2700%	7.7100%	0.5500%	0.6358%	0.6550%	0.6454%	0.6617%	0.6700%	3.7200%	3.6246%	7.0483%	
Oct-73	0.1700%	-3.8800%	0.6300%	0.6333%	0.6533%	0.6433%	0.6617%	0.6683%	-0.4600%	-0.4733%	-4.5417%	
Nov-73	-11.0900%	-11.7200%	0.5600%	0.6392%	0.6583%	0.6488%	0.6675%	0.6792%	-11.6500%	-11.7388%	-12.3875%	
Dec-73	1.9800%	3.7500%	0.6000%	0.6400%	0.6600%	0.6500%	0.6725%	0.6867%	1.3800%	1.3300%	3.0775%	
Jan-74	-0.7200%	4.1800%	0.6100%	0.6525%	0.6667%	0.6596%	0.6792%	0.6967%	-1.3300%	-1.3796%	3.5008%	
Feb-74	-0.0700%	0.6000%	0.5500%	0.6542%	0.6708%	0.6625%	0.6833%	0.7017%	-0.6200%	-0.7325%	-0.0833%	
Mar-74	-2.0500%	-3.8900%	0.5900%	0.6675%	0.6817%	0.6746%	0.6958%	0.7050%	-2.6400%	-2.7246%	-4.5858%	
Apr-74	-3.5900%	-12.9600%	0.6800%	0.6875%	0.7025%	0.6950%	0.7133%	0.7308%	-4.2700%	-4.2850%	-13.6733%	
May-74	-3.0200%	-4.8400%	0.6800%	0.6975%	0.7150%	0.7063%	0.7267%	0.7500%	-3.7000%	-3.7263%	-5.5667%	
Jun-74	-1.1300%	-5.7000%	0.6100%	0.7058%	0.7292%	0.7175%	0.7442%	0.7767%	-1.7400%	-1.8475%	-6.4442%	
Jul-74	-7.4200%	-0.8900%	0.7200%	0.7267%	0.7508%	0.7388%	0.7642%	0.8050%	-8.1400%	-8.1588%	-1.6542%	

	Avg Aaa and Aa										
Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA	
Aug-74	-8.6400%	-8.7100%	0.6500%	0.7500%	0.7733%	0.7617%	0.7942%	0.8358%	-9.2900%	-9.4017%	-9.5042%
Sep-74	-11.5200%	-0.8600%	0.7100%	0.7700%	0.8050%	0.7875%	0.8375%	0.8708%	-12.2300%	-12.3075%	-1.6975%
Oct-74	16.8100%	11.9900%	0.7000%	0.7725%	0.8033%	0.7879%	0.8275%	0.8983%	16.1100%	16.0221%	11.1625%
Nov-74	-4.8900%	-1.1900%	0.6200%	0.7408%	0.7783%	0.7596%	0.7950%	0.8717%	-5.5100%	-5.6496%	-1.9850%
Dec-74	-1.5600%	0.4400%	0.6700%	0.7408%	0.7667%	0.7538%	0.7808%	0.8558%	-2.2300%	-2.3138%	-0.3408%
Jan-75	12.7200%	18.9700%	0.6800%	0.7358%	0.7608%	0.7483%	0.7875%	0.8642%	12.0400%	11.9717%	18.1825%
Feb-75	6.3800%	1.4300%	0.6000%	0.7183%	0.7425%	0.7304%	0.7692%	0.8325%	5.7800%	5.6496%	0.6608%
Mar-75	2.5400%	-2.1600%	0.6600%	0.7225%	0.7433%	0.7329%	0.7642%	0.8100%	1.8800%	1.8071%	-2.9242%
Apr-75	5.1000%	-1.4000%	0.6700%	0.7458%	0.7658%	0.7558%	0.7900%	0.8383%	4.4300%	4.3442%	-2.1900%
May-75	4.7600%	8.6600%	0.6700%	0.7417%	0.7700%	0.7558%	0.7917%	0.8525%	4.0900%	4.0042%	7.8683%
Jun-75	4.7700%	10.6700%	0.7000%	0.7308%	0.7608%	0.7458%	0.7783%	0.8417%	4.0700%	4.0242%	9.8917%
Jul-75	-6.4400%	-5.1000%	0.6800%	0.7367%	0.7608%	0.7488%	0.7817%	0.8342%	-7.1200%	-7.1888%	-5.8817%
Aug-75	-1.7600%	-2.1200%	0.6500%	0.7458%	0.7692%	0.7575%	0.7933%	0.8433%	-2.4100%	-2.5175%	-2.9133%
Sep-75	-3.1200%	-0.4900%	0.7300%	0.7458%	0.7792%	0.7625%	0.8033%	0.8492%	-3.8500%	-3.8825%	-1.2933%
Oct-75	6.5300%	7.0800%	0.7200%	0.7383%	0.7767%	0.7575%	0.7958%	0.8467%	5.8100%	5.7725%	6.2842%
Nov-75	2.8200%	3.5000%	0.6100%	0.7317%	0.7692%	0.7504%	0.7875%	0.8367%	2.2100%	2.0696%	2.7125%
Dec-75	-0.8100%	0.7700%	0.7500%	0.7325%	0.7713%	0.7519%	0.7925%	0.8425%	-1.5600%	-1.5619%	-0.0225%
Jan-76	12.1700%	8.9400%	0.6500%	0.7167%	0.7608%	0.7388%	0.7825%	0.8250%	11.5200%	11.4313%	8.1575%
Feb-76	-0.8400%	-3.5600%	0.6100%	0.7125%	0.7517%	0.7321%	0.7633%	0.8092%	-1.4500%	-1.5721%	-4.3233%
Mar-76	3.3700%	1.0000%	0.7100%	0.7100%	0.7508%	0.7304%	0.7600%	0.8058%	2.6600%	2.6396%	0.2400%
Apr-76	-0.7800%	0.3700%	0.6400%	0.7000%	0.7408%	0.7204%	0.7500%	0.7942%	-1.4200%	-1.5004%	-0.3800%
May-76	-1.1100%	-1.3900%	0.5900%	0.7150%	0.7433%	0.7292%	0.7550%	0.7958%	-1.7000%	-1.8392%	-2.1450%
Jun-76	4.4300%	3.3700%	0.7300%	0.7183%	0.7408%	0.7296%	0.7558%	0.7950%	3.7000%	3.7004%	2.6142%
Jul-76	-0.4800%	3.4100%	0.6500%	0.7133%	0.7342%	0.7238%	0.7517%	0.7808%	-1.1300%	-1.2038%	2.6583%
Aug-76	-0.1800%	3.8300%	0.6900%	0.7042%	0.7217%	0.7129%	0.7358%	0.7608%	-0.8700%	-0.8929%	3.0942%
Sep-76	2.5800%	3.8100%	0.6400%	0.6983%	0.7117%	0.7050%	0.7242%	0.7417%	1.9400%	1.8750%	3.0858%
Oct-76	-1.8600%	-0.2100%	0.6100%	0.6933%	0.7067%	0.7000%	0.7167%	0.7325%	-2.4700%	-2.5600%	-0.9267%
Nov-76	-0.4100%	2.6800%	0.6600%	0.6875%	0.7050%	0.6963%	0.7175%	0.7300%	-1.0700%	-1.1063%	1.9625%
Dec-76	5.6100%	6.3100%	0.6300%	0.6650%	0.6871%	0.6760%	0.7042%	0.7183%	4.9800%	4.9340%	5.6058%
Jan-77	-4.7300%	0.3500%	0.5900%	0.6633%	0.6800%	0.6717%	0.7008%	0.7175%	-5.3200%	-5.4017%	-0.3508%
Feb-77	-1.8200%	-3.7200%	0.5700%	0.6700%	0.6883%	0.6792%	0.7050%	0.7208%	-2.3900%	-2.4992%	-4.4250%
Mar-77	-1.0500%	1.0200%	0.6500%	0.6750%	0.6900%	0.6825%	0.7075%	0.7250%	-1.7000%	-1.7325%	0.3125%
Apr-77	0.4200%	2.0900%	0.6100%	0.6700%	0.6900%	0.6800%	0.7092%	0.7258%	-0.1900%	-0.2600%	1.3808%
May-77	-1.9600%	2.1100%	0.6700%	0.6708%	0.6900%	0.6804%	0.7075%	0.7258%	-2.6300%	-2.6404%	1.4025%
Jun-77	4.9400%	5.3100%	0.6200%	0.6625%	0.6825%	0.6725%	0.6975%	0.7150%	4.3200%	4.2675%	4.6125%
Jul-77	-1.2400%	1.6400%	0.5900%	0.6617%	0.6767%	0.6692%	0.6933%	0.7092%	-1.8300%	-1.9092%	0.9467%
Aug-77	-1.7200%	-3.5300%	0.6700%	0.6650%	0.6808%	0.6729%	0.6967%	0.7075%	-2.3900%	-2.3929%	-4.2267%
Sep-77	0.1600%	2.4700%	0.6100%	0.6600%	0.6792%	0.6696%	0.6933%	0.7050%	-0.4500%	-0.5096%	1.7767%
Oct-77	-3.9000%	-2.9600%	0.6300%	0.6700%	0.6883%	0.6792%	0.7033%	0.7175%	-4.5300%	-4.5792%	-3.6633%
Nov-77	3.1600%	3.8100%	0.6300%	0.6733%	0.6950%	0.6842%	0.7067%	0.7200%	2.5300%	2.4758%	3.1033%
Dec-77	0.7500%	0.1900%	0.6200%	0.6825%	0.7004%	0.6915%	0.7125%	0.7200%	0.1300%	0.0585%	-0.5225%
Jan-78	-5.7400%	-5.3300%	0.6900%	0.7008%	0.7158%	0.7083%	0.7300%	0.7433%	-6.4300%	-6.4483%	-6.0600%
Feb-78	-2.0300%	-0.6200%	0.6000%	0.7058%	0.7208%	0.7133%	0.7325%	0.7475%	-2.6300%	-2.7433%	-1.3525%
Mar-78	2.9400%	3.0900%	0.6900%	0.7058%	0.7217%	0.7138%	0.7325%	0.7483%	2.2500%	2.2263%	2.3575%
Apr-78	9.0200%	1.0600%	0.6300%	0.7133%	0.7275%	0.7204%	0.7383%	0.7575%	8.3900%	8.2996%	0.3217%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
May-78	0.9200%	0.4300%	0.7500%	0.7242%	0.7367%	0.7304%	0.7517%	0.7683%	0.1700%	0.1896%	-0.3217%
Jun-78	-1.3800%	0.3600%	0.6900%	0.7300%	0.7458%	0.7379%	0.7658%	0.7833%	-2.0700%	-2.1179%	-0.4058%
Jul-78	5.8300%	3.1600%	0.7300%	0.7400%	0.7558%	0.7479%	0.7717%	0.7925%	5.1000%	5.0821%	2.3883%
Aug-78	3.0100%	-0.0300%	0.7000%	0.7242%	0.7467%	0.7354%	0.7592%	0.7767%	2.3100%	2.2746%	-0.7892%
Sep-78	-0.3200%	-0.5600%	0.6500%	0.7242%	0.7433%	0.7338%	0.7575%	0.7733%	-0.9700%	-1.0538%	-1.3175%
Oct-78	-8.7200%	-6.8400%	0.7300%	0.7408%	0.7558%	0.7483%	0.7733%	0.7883%	-9.4500%	-9.4683%	-7.6133%
Nov-78	2.1500%	3.5600%	0.7100%	0.7525%	0.7700%	0.7613%	0.7883%	0.8067%	1.4400%	1.3888%	2.7717%
Dec-78	1.9600%	-1.4900%	0.6800%	0.7633%	0.7775%	0.7704%	0.7967%	0.8083%	1.2800%	1.1896%	-2.2867%
Jan-79	4.4300%	6.9200%	0.7900%	0.7708%	0.7900%	0.7804%	0.8083%	0.8250%	3.6400%	3.6496%	6.1117%
Feb-79	-3.2100%	-2.1200%	0.6500%	0.7717%	0.7917%	0.7817%	0.8117%	0.8200%	-3.8600%	-3.9917%	-2.9317%
Mar-79	5.9600%	1.9600%	0.7400%	0.7808%	0.8008%	0.7908%	0.8242%	0.8367%	5.2200%	5.1692%	1.1358%
Apr-79	0.6300%	-2.4900%	0.7600%	0.7817%	0.8042%	0.7929%	0.8267%	0.8417%	-0.1300%	-0.1629%	-3.3167%
May-79	-2.1700%	1.5000%	0.7700%	0.7917%	0.8217%	0.8067%	0.8492%	0.8583%	-2.9400%	-2.9767%	0.6508%
Jun-79	4.3500%	3.8600%	0.7100%	0.7742%	0.8050%	0.7896%	0.8292%	0.8450%	3.6400%	3.5604%	3.0308%
Jul-79	1.3400%	3.4200%	0.7600%	0.7667%	0.7908%	0.7788%	0.8100%	0.8317%	0.5800%	0.5613%	2.6100%
Aug-79	5.7700%	1.0200%	0.7300%	0.7692%	0.7942%	0.7817%	0.8125%	0.8450%	5.0400%	4.9883%	0.2075%
Sep-79	0.4300%	-1.7700%	0.6800%	0.7867%	0.8083%	0.7975%	0.8283%	0.8633%	-0.2500%	-0.3675%	-2.5983%
Oct-79	-6.4000%	-5.0500%	0.8200%	0.8442%	0.8717%	0.8579%	0.9042%	0.9500%	-7.2200%	-7.2579%	-5.9542%
Nov-79	4.7500%	6.0700%	0.8300%	0.8967%	0.9350%	0.9158%	0.9642%	0.9908%	3.9200%	3.8342%	5.1058%
Dec-79	2.1400%	0.2200%	0.8300%	0.8950%	0.9292%	0.9121%	0.9558%	1.0125%	1.3100%	1.2279%	-0.7358%
Jan-80	6.2200%	-0.2300%	0.8300%	0.9242%	0.9633%	0.9438%	0.9958%	1.0177%	5.3900%	5.2763%	-1.2258%
Feb-80	-0.0100%	-2.4700%	0.8400%	1.0317%	1.0608%	1.0463%	1.0992%	1.1028%	-0.8500%	-1.0563%	-3.5692%
Mar-80	-9.7200%	-5.2900%	0.9900%	1.0800%	1.1258%	1.1029%	1.1742%	1.2158%	-10.7100%	-10.8229%	-6.4642%
Apr-80	4.6200%	11.8600%	1.0000%	1.0033%	1.0883%	1.0458%	1.1242%	1.1908%	3.6200%	3.5742%	10.7358%
May-80	5.1500%	3.2300%	0.8700%	0.9158%	0.9925%	0.9542%	0.9992%	1.0613%	4.2800%	4.1958%	2.2308%
Jun-80	3.1600%	3.3700%	0.8600%	0.8817%	0.9492%	0.9154%	0.9775%	1.0331%	2.3000%	2.2446%	2.3925%
Jul-80	6.9600%	-0.4100%	0.8400%	0.9225%	0.9525%	0.9375%	0.9967%	1.0127%	6.1200%	6.0225%	-1.4067%
Aug-80	1.0100%	-1.3900%	0.8100%	0.9700%	1.0075%	0.9888%	1.0608%	1.0550%	0.2000%	0.0212%	-2.4508%
Sep-80	2.9400%	-1.1400%	0.9700%	1.0017%	1.0433%	1.0225%	1.0983%	1.1077%	1.9700%	1.9175%	-2.2383%
Oct-80	2.0200%	2.7400%	0.9700%	1.0258%	1.0567%	1.0413%	1.1108%	1.1280%	1.0500%	0.9788%	1.6292%
Nov-80	10.6500%	5.0100%	0.9100%	1.0808%	1.1117%	1.0963%	1.1633%	1.1677%	9.7400%	9.5538%	3.8467%
Dec-80	-3.0200%	-0.1400%	1.0800%	1.1008%	1.1483%	1.1246%	1.1975%	1.2217%	-4.1000%	-4.1446%	-1.3375%
Jan-81	-4.1800%	-1.8600%	0.9400%	1.0675%	1.1267%	1.0971%	1.1692%	1.1895%	-5.1200%	-5.2771%	-3.0292%
Feb-81	1.7400%	-2.2400%	0.8800%	1.1125%	1.1575%	1.1350%	1.2208%	1.2233%	0.8600%	0.6050%	-3.4608%
Mar-81	4.0000%	4.2000%	1.1100%	1.1108%	1.1583%	1.1346%	1.2175%	1.2604%	2.8900%	2.8654%	2.9825%
Apr-81	-1.9300%	-0.9600%	1.0100%	1.1567%	1.1992%	1.1779%	1.2692%	1.2708%	-2.9400%	-3.1079%	-2.2292%
May-81	0.2600%	2.9100%	1.0400%	1.1933%	1.2400%	1.2167%	1.3008%	1.3430%	-0.7800%	-0.9567%	1.6092%
Jun-81	-0.6300%	2.7200%	1.0900%	1.1458%	1.2008%	1.1733%	1.2408%	1.3160%	-1.7200%	-1.8033%	1.4792%
Jul-81	0.2100%	3.4100%	1.0900%	1.1983%	1.2325%	1.2154%	1.2850%	1.3393%	-0.8800%	-1.0054%	2.1250%
Aug-81	-5.7700%	-0.2400%	1.1000%	1.2408%	1.2850%	1.2629%	1.3450%	1.3706%	-6.8700%	-7.0329%	-1.5850%
Sep-81	-4.9300%	-4.0900%	1.1400%	1.2908%	1.3292%	1.3100%	1.3817%	1.4192%	-6.0700%	-6.2400%	-5.4717%
Oct-81	5.4000%	6.1700%	1.1700%	1.2833%	1.3183%	1.3008%	1.3567%	1.4379%	4.2300%	4.0992%	4.8133%
Nov-81	4.1300%	4.8100%	1.1300%	1.1850%	1.2475%	1.2163%	1.2400%	1.3679%	3.0000%	2.9138%	3.5700%
Dec-81	-2.5600%	-3.0500%	1.0000%	1.1858%	1.2500%	1.2179%	1.2692%	1.3468%	-3.5600%	-3.7779%	-4.3192%
Jan-82	-1.3100%	0.3700%	1.0800%	1.2650%	1.3125%	1.2888%	1.3733%	1.4000%	-2.3900%	-2.5988%	-1.0033%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Feb-82	-5.5900%	-0.3500%	1.0300%	1.2725%	1.3100%	1.2913%	1.3608%	1.4096%	-6.6200%	-6.8813%	-1.7108%
Mar-82	-0.5200%	1.6800%	1.2400%	1.2150%	1.2675%	1.2413%	1.2975%	1.3740%	-1.7600%	-1.7613%	0.3825%
Apr-82	4.5200%	5.4800%	1.1200%	1.2050%	1.2417%	1.2233%	1.2600%	1.3665%	3.4000%	3.2967%	4.2200%
May-82	-3.4100%	-1.8700%	1.0100%	1.1883%	1.2308%	1.2096%	1.2508%	1.3400%	-4.4200%	-4.6196%	-3.1208%
Jun-82	-1.5000%	-1.6100%	1.2000%	1.2342%	1.2717%	1.2529%	1.3150%	1.3617%	-2.7000%	-2.7529%	-2.9250%
Jul-82	-1.7800%	-1.9800%	1.1400%	1.2175%	1.2675%	1.2425%	1.3058%	1.3717%	-2.9200%	-3.0225%	-3.2858%
Aug-82	12.1400%	12.1100%	1.1200%	1.1425%	1.2067%	1.1746%	1.2258%	1.3267%	11.0200%	10.9654%	10.8842%
Sep-82	1.2500%	0.5200%	1.0000%	1.0783%	1.1433%	1.1108%	1.1600%	1.2875%	0.2500%	0.1392%	-0.6400%
Oct-82	11.5100%	6.5900%	0.9100%	1.0100%	1.0808%	1.0454%	1.1008%	1.2487%	10.6000%	10.4646%	5.4892%
Nov-82	4.0400%	0.1700%	0.9500%	0.9733%	1.0425%	1.0079%	1.0767%	1.2052%	3.0900%	3.0321%	-0.9067%
Dec-82	1.9300%	3.6000%	0.9300%	0.9858%	1.0367%	1.0113%	1.0633%	1.2021%	1.0000%	0.9188%	2.5367%
Jan-83	3.7200%	3.7200%	0.8700%	0.9825%	1.0292%	1.0058%	1.0617%	1.1868%	2.8500%	2.7142%	2.6583%
Feb-83	2.2900%	-0.0500%	0.8100%	1.0008%	1.0483%	1.0246%	1.0850%	1.1898%	1.4800%	1.2654%	-1.1350%
Mar-83	3.6900%	0.1700%	0.8900%	0.9775%	1.0267%	1.0021%	1.0558%	1.1690%	2.8000%	2.6879%	-0.8858%
Apr-83	7.8800%	5.7100%	0.8500%	0.9592%	1.0050%	0.9821%	1.0358%	1.1365%	7.0300%	6.8979%	4.6742%
May-83	-0.8700%	1.2400%	0.9100%	0.9550%	0.9958%	0.9754%	1.0367%	1.1243%	-1.7800%	-1.8454%	0.2033%
Jun-83	3.8900%	-1.2300%	0.9000%	0.9783%	1.0125%	0.9954%	1.0533%	1.1373%	2.9900%	2.8946%	-2.2833%
Jul-83	-2.9500%	3.3900%	0.8800%	1.0125%	1.0325%	1.0225%	1.0717%	1.1310%	-3.8300%	-3.9725%	2.3183%
Aug-83	1.5000%	0.4000%	1.0300%	1.0425%	1.0600%	1.0513%	1.0983%	1.1306%	0.4700%	0.4488%	-0.6983%
Sep-83	1.3800%	4.4500%	0.9600%	1.0308%	1.0517%	1.0413%	1.0867%	1.1197%	0.4200%	0.3388%	3.3633%
Oct-83	-1.1600%	5.3200%	0.9500%	1.0208%	1.0408%	1.0308%	1.0733%	1.1044%	-2.1100%	-2.1908%	4.2467%
Nov-83	2.1100%	-2.0400%	0.9400%	1.0342%	1.0508%	1.0425%	1.0808%	1.1153%	1.1700%	1.0675%	-3.1208%
Dec-83	-0.5200%	-2.2600%	0.9400%	1.0475%	1.0633%	1.0554%	1.0950%	1.1264%	-1.4600%	-1.5754%	-3.3550%
Jan-84	-0.5600%	4.8200%	1.0300%	1.0167%	1.0592%	1.0379%	1.0850%	1.1167%	-1.5900%	-1.5979%	3.7350%
Feb-84	-3.5200%	-4.1100%	0.9200%	1.0067%	1.0583%	1.0325%	1.0867%	1.1164%	-4.4400%	-4.5525%	-5.1967%
Mar-84	1.7300%	-0.5500%	0.9800%	1.0475%	1.1017%	1.0746%	1.1383%	1.1477%	0.7500%	0.6554%	-1.6883%
Apr-84	0.9500%	1.5900%	1.0400%	1.0675%	1.1233%	1.0954%	1.1608%	1.1774%	-0.0900%	-0.1454%	0.4292%
May-84	-5.5400%	-2.3000%	1.0300%	1.1067%	1.1750%	1.1408%	1.2217%	1.2400%	-6.5700%	-6.6808%	-3.5217%
Jun-84	2.1700%	0.6900%	1.0600%	1.1292%	1.1942%	1.1617%	1.2417%	1.2581%	1.1100%	1.0083%	-0.5517%
Jul-84	-1.2400%	4.3300%	1.1600%	1.1200%	1.1767%	1.1483%	1.2017%	1.2384%	-2.4000%	-2.3883%	3.1283%
Aug-84	11.0400%	6.4600%	1.0600%	1.0725%	1.1225%	1.0975%	1.1392%	1.2024%	9.9800%	9.9425%	5.3208%
Sep-84	0.0200%	4.3800%	0.9400%	1.0550%	1.1058%	1.0804%	1.1192%	1.1823%	-0.9200%	-1.0604%	3.2608%
Oct-84	0.3900%	2.7200%	1.0800%	1.0525%	1.0925%	1.0725%	1.1150%	1.1525%	-0.6900%	-0.6825%	1.6050%
Nov-84	-1.1200%	2.7000%	0.9100%	1.0242%	1.0550%	1.0396%	1.0833%	1.1039%	-2.0300%	-2.1596%	1.6167%
Dec-84	2.6300%	3.1600%	0.9800%	1.0108%	1.0417%	1.0263%	1.0633%	1.0891%	1.6500%	1.6038%	2.0967%
Jan-85	7.7900%	2.3500%	0.9600%	1.0067%	1.0358%	1.0213%	1.0567%	1.0822%	6.8300%	6.7688%	1.2933%
Feb-85	1.2200%	1.9300%	0.8200%	1.0108%	1.0408%	1.0258%	1.0725%	1.0862%	0.4000%	0.1942%	0.8575%
Mar-85	0.0700%	3.6200%	0.9400%	1.0467%	1.0758%	1.0613%	1.1250%	1.1501%	-0.8700%	-0.9913%	2.4950%
Apr-85	-0.0900%	2.0700%	1.0200%	1.0192%	1.0575%	1.0383%	1.0975%	1.1322%	-1.1100%	-1.1283%	0.9725%
May-85	5.7800%	6.0600%	0.9700%	0.9767%	1.0250%	1.0008%	1.0542%	1.0978%	4.8100%	4.7792%	5.0058%
Jun-85	1.5700%	2.7900%	0.8000%	0.9117%	0.9550%	0.9333%	0.9733%	1.0120%	0.7700%	0.6367%	1.8167%
Jul-85	-0.1500%	-4.2700%	0.9400%	0.9142%	0.9517%	0.9329%	0.9625%	1.0054%	-1.0900%	-1.0829%	-5.2325%
Aug-85	-0.8500%	1.8100%	0.8500%	0.9208%	0.9558%	0.9383%	0.9708%	1.0114%	-1.7000%	-1.7883%	0.8392%
Sep-85	-3.1300%	-5.2100%	0.8800%	0.9225%	0.9550%	0.9388%	0.9733%	1.0110%	-4.0100%	-4.0688%	-6.1833%
Oct-85	4.6200%	6.3800%	0.8900%	0.9183%	0.9542%	0.9363%	0.9675%	1.0012%	3.7300%	3.6838%	5.4125%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp		Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Nov-85	6.8600%	5.2200%	0.8100%	0.8792%	0.9225%	0.9008%	0.9250%	0.9595%	6.0500%	5.9592%	4.2950%	
Dec-85	4.8400%	6.9400%	0.8600%	0.8467%	0.8858%	0.8663%	0.8808%	0.9173%	3.9800%	3.9738%	6.0592%	
Jan-86	0.5600%	2.9300%	0.7900%	0.8375%	0.8717%	0.8546%	0.8700%	0.8999%	-0.2300%	-0.2946%	2.0600%	
Feb-86	7.4700%	6.2300%	0.7300%	0.8058%	0.8442%	0.8250%	0.8317%	0.8597%	6.7400%	6.6450%	5.3983%	
Mar-86	5.5800%	5.1400%	0.7100%	0.7500%	0.7908%	0.7704%	0.7633%	0.7928%	4.8700%	4.8096%	4.3767%	
Apr-86	-1.1300%	-3.3300%	0.6300%	0.7325%	0.7675%	0.7500%	0.7392%	0.7609%	-1.7600%	-1.8800%	-4.0692%	
May-86	5.3200%	5.2500%	0.6200%	0.7575%	0.7858%	0.7717%	0.7817%	0.7972%	4.7000%	4.5483%	4.4683%	
Jun-86	1.6900%	5.9700%	0.7000%	0.7608%	0.7908%	0.7758%	0.7800%	0.8046%	0.9900%	0.9142%	5.1900%	
Jul-86	-5.5900%	2.8300%	0.6600%	0.7400%	0.7733%	0.7567%	0.7542%	0.7795%	-6.2500%	-6.3467%	2.0758%	
Aug-86	7.4200%	8.8400%	0.6300%	0.7267%	0.7683%	0.7475%	0.7525%	0.7756%	6.7900%	6.6725%	8.0875%	
Sep-86	-8.2700%	-11.3700%	0.6500%	0.7408%	0.7800%	0.7604%	0.7733%	0.7919%	-8.9200%	-9.0304%	-12.1433%	
Oct-86	5.7700%	5.0500%	0.6900%	0.7383%	0.7775%	0.7579%	0.7700%	0.7940%	5.0800%	5.0121%	4.2800%	
Nov-86	2.4300%	2.1100%	0.5900%	0.7233%	0.7667%	0.7450%	0.7508%	0.7745%	1.8400%	1.6850%	1.3592%	
Dec-86	-2.5500%	-2.5400%	0.7000%	0.7075%	0.7517%	0.7296%	0.7342%	0.7600%	-3.2500%	-3.2796%	-3.2742%	
Jan-87	13.4700%	9.8400%	0.6400%	0.6967%	0.7383%	0.7175%	0.7183%	0.7454%	12.8300%	12.7525%	9.1217%	
Feb-87	3.9500%	-3.0100%	0.5900%	0.6983%	0.7400%	0.7192%	0.7242%	0.7503%	3.3600%	3.2308%	-2.7342%	
Mar-87	2.8900%	-1.8900%	0.6600%	0.6967%	0.7367%	0.7167%	0.7200%	0.7441%	2.2300%	2.1733%	-3.6100%	
Apr-87	-0.8900%	-4.1400%	0.6500%	0.7375%	0.7625%	0.7500%	0.7625%	0.7794%	-1.5400%	-1.6400%	-4.9025%	
May-87	0.8700%	-0.6400%	0.6600%	0.7775%	0.7992%	0.7883%	0.8025%	0.8221%	0.2100%	0.0817%	-1.4425%	
Jun-87	5.0500%	4.3900%	0.7500%	0.7767%	0.8042%	0.7904%	0.8008%	0.8349%	4.3000%	4.2596%	3.5892%	
Jul-87	5.0700%	-0.2500%	0.7300%	0.7850%	0.8042%	0.7946%	0.8083%	0.8446%	4.3400%	4.2754%	-1.0583%	
Aug-87	3.7300%	5.2700%	0.7500%	0.8058%	0.8217%	0.8138%	0.8375%	0.8703%	2.9800%	2.9163%	4.4325%	
Sep-87	-2.1900%	0.2100%	0.7500%	0.8483%	0.8625%	0.8554%	0.8883%	0.9314%	-2.9400%	-3.0454%	-0.6783%	
Oct-87	-21.5400%	-7.0500%	0.7900%	0.8767%	0.8950%	0.8858%	0.9258%	0.9466%	-22.3300%	-22.4258%	-7.9758%	
Nov-87	-8.2400%	-5.5500%	0.7500%	0.8342%	0.8558%	0.8450%	0.8850%	0.9020%	-8.9900%	-9.0850%	-6.4350%	
Dec-87	7.6100%	1.0800%	0.7800%	0.8425%	0.8608%	0.8517%	0.8983%	0.9114%	6.8300%	6.7583%	0.1817%	
Jan-88	4.2100%	11.5300%	0.7200%	0.8233%	0.8408%	0.8321%	0.8767%	0.8998%	3.4900%	3.3779%	10.6533%	
Feb-88	4.6600%	-1.7500%	0.7100%	0.7833%	0.8000%	0.7917%	0.8258%	0.8430%	3.9500%	3.8683%	-2.5758%	
Mar-88	-3.0900%	-5.2700%	0.7200%	0.7825%	0.7992%	0.7908%	0.8267%	0.8396%	-3.8100%	-3.8808%	-6.0967%	
Apr-88	1.1100%	0.1900%	0.7000%	0.8058%	0.8217%	0.8138%	0.8575%	0.8768%	0.4100%	0.2963%	-0.6675%	
May-88	0.8600%	4.6000%	0.7800%	0.8250%	0.8417%	0.8333%	0.8775%	0.8993%	0.0800%	0.0267%	3.7225%	
Jun-88	4.5900%	3.1500%	0.7600%	0.8217%	0.8442%	0.8329%	0.8767%	0.9005%	3.8300%	3.7571%	2.2733%	
Jul-88	-0.3800%	0.1700%	0.7100%	0.8300%	0.8550%	0.8425%	0.8967%	0.9187%	-1.0900%	-1.2225%	-0.7267%	
Aug-88	-3.3900%	-1.3700%	0.8300%	0.8425%	0.8642%	0.8533%	0.9042%	0.9308%	-4.2200%	-4.2433%	-2.2742%	
Sep-88	4.2600%	4.1300%	0.7600%	0.8183%	0.8383%	0.8283%	0.8617%	0.8889%	3.5000%	3.4317%	3.2683%	
Oct-88	2.7800%	2.6200%	0.7600%	0.7917%	0.8083%	0.8000%	0.8150%	0.8318%	2.0200%	1.9800%	1.8050%	
Nov-88	-1.4300%	-0.7900%	0.7000%	0.7875%	0.8100%	0.7988%	0.8167%	0.8242%	-2.1300%	-2.2288%	-1.6067%	
Dec-88	1.7400%	0.6300%	0.7500%	0.7975%	0.8175%	0.8075%	0.8250%	0.8377%	0.9900%	0.9325%	-0.1950%	
Jan-89	7.3200%	5.7100%	0.8000%	0.8017%	0.8175%	0.8096%	0.8242%	0.8404%	6.5200%	6.5104%	4.8858%	
Feb-89	-2.4900%	-2.1500%	0.6900%	0.8033%	0.8192%	0.8113%	0.8275%	0.8383%	-3.1800%	-3.3013%	-2.9775%	
Mar-89	2.3300%	2.6900%	0.7900%	0.8167%	0.8317%	0.8242%	0.8375%	0.8535%	1.5400%	1.5058%	1.8525%	
Apr-89	5.1900%	6.3400%	0.7000%	0.8158%	0.8283%	0.8221%	0.8350%	0.8492%	4.4900%	4.3679%	5.5050%	
May-89	4.0500%	5.8000%	0.8000%	0.7975%	0.8125%	0.8050%	0.8158%	0.8334%	3.2500%	3.2450%	4.9842%	
Jun-89	-0.5700%	1.6100%	0.7000%	0.7583%	0.7742%	0.7663%	0.7808%	0.8049%	-1.2700%	-1.3363%	0.8292%	
Jul-89	9.0300%	8.0400%	0.6800%	0.7442%	0.7617%	0.7529%	0.7692%	0.7920%	8.3500%	8.2771%	7.2708%	

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp		Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Aug-89	1.9500%	-0.5700%	0.6600%	0.7467%	0.7617%	0.7542%	0.7725%	0.7929%	1.2900%	1.1958%	-1.3425%	
Sep-89	-0.4100%	1.7000%	0.6500%	0.7508%	0.7692%	0.7600%	0.7792%	0.7987%	-1.0600%	-1.1700%	0.9208%	
Oct-89	-2.3200%	0.4500%	0.7200%	0.7433%	0.7658%	0.7546%	0.7733%	0.7949%	-3.0400%	-3.0746%	-0.3233%	
Nov-89	2.0400%	3.3600%	0.6400%	0.7408%	0.7617%	0.7513%	0.7708%	0.7930%	1.4000%	1.2888%	2.5892%	
Dec-89	2.4000%	7.3100%	0.6400%	0.7383%	0.7592%	0.7488%	0.7717%	0.7861%	1.7600%	1.6513%	6.5383%	
Jan-90	-6.7100%	-8.0900%	0.7300%	0.7492%	0.7725%	0.7608%	0.7825%	0.7956%	-7.4400%	-7.4708%	-8.8725%	
Feb-90	1.2900%	-1.0900%	0.6600%	0.7683%	0.7867%	0.7775%	0.7975%	0.8130%	0.6300%	0.5125%	-1.8875%	
Mar-90	2.6500%	1.8700%	0.7100%	0.7808%	0.7925%	0.7867%	0.8000%	0.8205%	1.9400%	1.8633%	1.0700%	
Apr-90	-2.4900%	-3.8500%	0.7500%	0.7883%	0.8033%	0.7958%	0.8175%	0.8259%	-3.2400%	-3.2858%	-4.6675%	
May-90	9.7500%	6.8200%	0.7500%	0.7892%	0.8083%	0.7988%	0.8192%	0.8338%	9.0000%	8.9513%	6.0008%	
Jun-90	-0.6700%	-2.1100%	0.6800%	0.7717%	0.7908%	0.7813%	0.8000%	0.8175%	-1.3500%	-1.4513%	-2.9100%	
Jul-90	-0.3200%	-0.3200%	0.7400%	0.7700%	0.7892%	0.7796%	0.8008%	0.8132%	-1.0600%	-1.0996%	-1.1208%	
Aug-90	-9.0400%	-7.9200%	0.7100%	0.7842%	0.8025%	0.7933%	0.8150%	0.8246%	-9.7500%	-9.8333%	-8.7350%	
Sep-90	-4.8700%	4.1100%	0.6900%	0.7967%	0.8142%	0.8054%	0.8225%	0.8431%	-5.5600%	-5.6754%	3.2875%	
Oct-90	-0.4300%	6.5300%	0.8100%	0.7942%	0.8142%	0.8042%	0.8142%	0.8386%	-1.2400%	-1.2342%	5.7158%	
Nov-90	6.4600%	1.9300%	0.7100%	0.7750%	0.7992%	0.7871%	0.7992%	0.8260%	5.7500%	5.6729%	1.1308%	
Dec-90	2.7900%	0.8600%	0.7200%	0.7542%	0.7825%	0.7683%	0.7850%	0.8109%	2.0700%	2.0217%	0.0750%	
Jan-91	4.3600%	-3.0100%	0.7100%	0.7533%	0.7808%	0.7671%	0.7825%	0.8094%	3.6500%	3.5929%	-3.7925%	
Feb-91	7.1500%	3.4900%	0.6400%	0.7358%	0.7633%	0.7496%	0.7633%	0.7898%	6.5100%	6.4004%	2.7267%	
Mar-91	2.4200%	1.9800%	0.6400%	0.7442%	0.7675%	0.7558%	0.7692%	0.7961%	1.7800%	1.6642%	1.2108%	
Apr-91	0.2400%	-1.6200%	0.7600%	0.7383%	0.7600%	0.7492%	0.7617%	0.7887%	-0.5200%	-0.5092%	-2.3817%	
May-91	4.3100%	-1.3000%	0.6800%	0.7383%	0.7625%	0.7504%	0.7633%	0.7860%	3.6300%	3.5596%	-2.0633%	
Jun-91	-4.5800%	-1.3900%	0.6300%	0.7508%	0.7733%	0.7621%	0.7733%	0.7986%	-5.2100%	-5.3421%	-2.1633%	
Jul-91	4.6600%	3.0700%	0.7600%	0.7500%	0.7708%	0.7604%	0.7717%	0.7956%	3.9000%	3.8996%	2.2983%	
Aug-91	2.3700%	2.5800%	0.6800%	0.7292%	0.7492%	0.7392%	0.7550%	0.7754%	1.6900%	1.6308%	1.8250%	
Sep-91	-1.6700%	2.0200%	0.6800%	0.7175%	0.7383%	0.7279%	0.7458%	0.7638%	-2.3500%	-2.3979%	1.2742%	
Oct-91	1.3400%	2.0000%	0.6500%	0.7125%	0.7358%	0.7242%	0.7433%	0.7601%	0.6900%	0.6158%	1.2567%	
Nov-91	-4.0300%	-0.9800%	0.6000%	0.7067%	0.7317%	0.7192%	0.7392%	0.7545%	-4.6300%	-4.7492%	-1.7192%	
Dec-91	11.4400%	7.3300%	0.6800%	0.6925%	0.7175%	0.7050%	0.7258%	0.7416%	10.7600%	10.7350%	6.6042%	
Jan-92	-1.8600%	-5.3600%	0.6100%	0.6833%	0.7092%	0.6963%	0.7192%	0.7360%	-2.4700%	-2.5563%	-6.0792%	
Feb-92	1.3000%	-2.7300%	0.5900%	0.6908%	0.7225%	0.7067%	0.7300%	0.7442%	0.7100%	0.5933%	-3.4600%	
Mar-92	-1.9400%	-1.4300%	0.6700%	0.6958%	0.7275%	0.7117%	0.7350%	0.7473%	-2.6100%	-2.6517%	-2.1650%	
Apr-92	2.9400%	6.4500%	0.6500%	0.6942%	0.7242%	0.7092%	0.7300%	0.7438%	2.2900%	2.2308%	5.7200%	
May-92	0.4900%	-0.1500%	0.6100%	0.6900%	0.7192%	0.7046%	0.7242%	0.7400%	-0.1200%	-0.2146%	-0.8742%	
Jun-92	-1.4900%	1.4100%	0.6700%	0.6850%	0.7133%	0.6992%	0.7192%	0.7323%	-2.1600%	-2.1892%	0.6908%	
Jul-92	4.0900%	7.9000%	0.6300%	0.6725%	0.6975%	0.6850%	0.7042%	0.7149%	3.4600%	3.4050%	7.1958%	
Aug-92	-2.0500%	-0.7400%	0.6000%	0.6625%	0.6842%	0.6733%	0.6917%	0.7031%	-2.6500%	-2.7233%	-1.4317%	
Sep-92	1.1800%	0.7300%	0.5800%	0.6600%	0.6808%	0.6704%	0.6900%	0.7006%	0.6000%	0.5096%	0.0400%	
Oct-92	0.3500%	-0.9400%	0.5700%	0.6658%	0.6933%	0.6796%	0.7017%	0.7106%	-0.2200%	-0.3296%	-1.6417%	
Nov-92	3.4100%	-0.1500%	0.6100%	0.6750%	0.7000%	0.6875%	0.7092%	0.7193%	2.8000%	2.7225%	-0.8592%	
Dec-92	1.2300%	3.5800%	0.6300%	0.6650%	0.6867%	0.6758%	0.6933%	0.7042%	0.6000%	0.5542%	2.8867%	
Jan-93	0.8400%	1.5700%	0.5900%	0.6592%	0.6758%	0.6675%	0.6783%	0.6901%	0.2500%	0.1725%	0.8917%	
Feb-93	1.3600%	7.2100%	0.5500%	0.6425%	0.6583%	0.6504%	0.6600%	0.6704%	0.8100%	0.7096%	6.5500%	
Mar-93	2.1100%	1.8000%	0.6300%	0.6317%	0.6433%	0.6375%	0.6467%	0.6586%	1.4800%	1.4725%	1.1533%	
Apr-93	-2.4200%	-0.2700%	0.5700%	0.6217%	0.6350%	0.6283%	0.6367%	0.6515%	-2.9900%	-3.0483%	-0.9067%	

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp		Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
May-93	2.6800%	-1.9100%	0.5200%	0.6192%	0.6342%	0.6267%	0.6367%	0.6549%	2.1600%	2.0533%	-2.5467%	
Jun-93	0.2900%	4.6300%	0.6200%	0.6108%	0.6258%	0.6183%	0.6283%	0.6469%	-0.3300%	-0.3283%	4.0017%	
Jul-93	-0.4000%	2.2600%	0.5400%	0.5975%	0.6125%	0.6050%	0.6150%	0.6285%	-0.9400%	-1.0050%	1.6450%	
Aug-93	3.7900%	4.8400%	0.5600%	0.5708%	0.5883%	0.5796%	0.5892%	0.6059%	3.2300%	3.2104%	4.2508%	
Sep-93	-0.7700%	-0.2000%	0.5000%	0.5550%	0.5708%	0.5629%	0.5742%	0.5864%	-1.2700%	-1.3329%	-0.7742%	
Oct-93	2.0700%	-0.2100%	0.4900%	0.5558%	0.5725%	0.5642%	0.5758%	0.5857%	1.5800%	1.5058%	-0.7858%	
Nov-93	-0.9500%	-5.0700%	0.5300%	0.5775%	0.5933%	0.5854%	0.5975%	0.6067%	-1.4800%	-1.5354%	-5.6675%	
Dec-93	1.2100%	-0.5300%	0.5500%	0.5775%	0.5933%	0.5854%	0.5983%	0.6113%	0.6600%	0.6246%	-1.1283%	
Jan-94	3.4000%	0.7200%	0.5500%	0.5767%	0.5933%	0.5850%	0.5983%	0.6110%	2.8500%	2.8150%	0.1217%	
Feb-94	-2.7100%	-5.6700%	0.4900%	0.5900%	0.6075%	0.5988%	0.6117%	0.6205%	-3.2000%	-3.3088%	-6.2817%	
Mar-94	-4.3600%	-3.3800%	0.5800%	0.5900%	0.6075%	0.5988%	0.6117%	0.6528%	-4.9400%	-4.9588%	-3.9917%	
Apr-94	1.2800%	2.4600%	0.5700%	0.6233%	0.6408%	0.6321%	0.6450%	0.6851%	0.7100%	0.6479%	1.8150%	
May-94	1.6400%	-2.6800%	0.6300%	0.6658%	0.6825%	0.6742%	0.6867%	0.6939%	1.0100%	0.9658%	-3.3667%	
Jun-94	-2.4500%	0.2100%	0.6100%	0.6642%	0.6808%	0.6725%	0.6842%	0.6923%	-3.0600%	-3.1225%	-0.4742%	
Jul-94	3.2800%	3.3600%	0.6000%	0.6758%	0.6925%	0.6842%	0.6983%	0.7063%	2.6800%	2.5958%	2.6617%	
Aug-94	4.1000%	-0.2800%	0.6600%	0.6725%	0.6875%	0.6800%	0.6933%	0.7006%	3.4400%	3.4200%	-0.9733%	
Sep-94	-2.4500%	-2.5400%	0.6100%	0.6950%	0.7075%	0.7013%	0.7133%	0.7187%	-3.0600%	-3.1513%	-3.2533%	
Oct-94	2.2500%	0.8600%	0.6600%	0.7142%	0.7258%	0.7200%	0.7317%	0.7377%	1.5900%	1.5300%	0.1283%	
Nov-94	-3.6400%	-1.4600%	0.6400%	0.7233%	0.7358%	0.7296%	0.7417%	0.7486%	-4.2800%	-4.3696%	-2.2017%	
Dec-94	1.4800%	0.5200%	0.6600%	0.7050%	0.7183%	0.7117%	0.7242%	0.7307%	0.8200%	0.7683%	-0.2042%	
Jan-95	2.5900%	7.7900%	0.7000%	0.7050%	0.7167%	0.7108%	0.7217%	0.7288%	1.8900%	1.8792%	7.0683%	
Feb-95	3.9000%	-0.1500%	0.5900%	0.6883%	0.6992%	0.6938%	0.7042%	0.7108%	3.3100%	3.2063%	-0.8542%	
Mar-95	2.9500%	-0.6000%	0.6400%	0.6767%	0.6867%	0.6817%	0.6908%	0.6979%	2.3100%	2.2683%	-1.2908%	
Apr-95	2.9400%	3.6500%	0.5800%	0.6692%	0.6767%	0.6729%	0.6808%	0.6898%	2.3600%	2.2671%	2.9692%	
May-95	4.0000%	3.1600%	0.6500%	0.6375%	0.6450%	0.6413%	0.6500%	0.6610%	3.3500%	3.3588%	2.5100%	
Jun-95	2.3200%	0.4700%	0.5400%	0.6083%	0.6192%	0.6138%	0.6242%	0.6336%	1.7800%	1.7063%	-0.1542%	
Jul-95	3.3200%	2.5500%	0.5600%	0.6175%	0.6283%	0.6229%	0.6333%	0.6408%	2.7600%	2.6971%	1.9167%	
Aug-95	0.2500%	2.0200%	0.5700%	0.6308%	0.6408%	0.6358%	0.6425%	0.6532%	-0.3200%	-0.3858%	1.3775%	
Sep-95	4.2200%	6.3800%	0.5200%	0.6100%	0.6208%	0.6154%	0.6233%	0.6350%	3.7000%	3.6046%	5.7567%	
Oct-95	-0.3600%	2.3800%	0.5700%	0.5933%	0.6058%	0.5996%	0.6083%	0.6224%	-0.9300%	-0.9596%	1.7717%	
Nov-95	4.3900%	1.3600%	0.5100%	0.5850%	0.5983%	0.5917%	0.6017%	0.6200%	3.8800%	3.7983%	0.7583%	
Dec-95	1.9300%	7.0800%	0.4900%	0.5683%	0.5825%	0.5754%	0.5858%	0.6045%	1.4400%	1.3546%	6.4942%	
Jan-96	3.4000%	1.2900%	0.5400%	0.5675%	0.5825%	0.5750%	0.5850%	0.6006%	2.8600%	2.8250%	0.7050%	
Feb-96	0.9300%	-3.9500%	0.4800%	0.5825%	0.5967%	0.5896%	0.6000%	0.6125%	0.4500%	0.3404%	-4.5500%	
Mar-96	0.9600%	-2.0300%	0.5200%	0.6125%	0.6267%	0.6196%	0.6292%	0.6435%	0.4400%	0.3404%	-2.6592%	
Apr-96	1.4700%	1.1000%	0.5900%	0.6250%	0.6400%	0.6325%	0.6417%	0.6570%	0.8800%	0.8375%	0.4583%	
May-96	2.5800%	-0.2500%	0.5800%	0.6350%	0.6475%	0.6413%	0.6492%	0.6650%	2.0000%	1.9388%	-0.8992%	
Jun-96	0.3800%	4.1600%	0.5400%	0.6425%	0.6558%	0.6492%	0.6558%	0.6720%	-0.1600%	-0.2692%	3.5042%	
Jul-96	-4.4200%	-6.2800%	0.6200%	0.6375%	0.6517%	0.6446%	0.6525%	0.6688%	-5.0400%	-5.0646%	-6.9325%	
Aug-96	2.1100%	2.1300%	0.5700%	0.6217%	0.6358%	0.6288%	0.6383%	0.6532%	1.5400%	1.4813%	1.4917%	
Sep-96	5.6300%	0.9500%	0.6000%	0.6383%	0.6517%	0.6450%	0.6533%	0.6681%	5.0300%	4.9850%	0.2967%	
Oct-96	2.7600%	5.0800%	0.5800%	0.6158%	0.6317%	0.6238%	0.6333%	0.6482%	2.1800%	2.1363%	4.4467%	
Nov-96	7.5600%	2.1100%	0.5200%	0.5917%	0.6092%	0.6004%	0.6100%	0.6253%	7.0400%	6.9596%	1.5000%	
Dec-96	-1.9800%	-0.6000%	0.5600%	0.6000%	0.6175%	0.6088%	0.6200%	0.6309%	-2.5400%	-2.5888%	-1.2200%	
Jan-97	6.2500%	0.6600%	0.5600%	0.6183%	0.6358%	0.6271%	0.6400%	0.6472%	5.6900%	5.6229%	0.0200%	

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp		Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Feb-97	0.7800%	-0.9500%	0.5100%	0.6092%	0.6283%	0.6188%	0.6333%	0.6369%	0.2700%	0.1613%	-1.5833%	
Mar-97	-4.1100%	-3.0100%	0.5900%	0.6292%	0.6475%	0.6383%	0.6533%	0.6555%	-4.7000%	-4.7483%	-3.6633%	
Apr-97	5.9700%	-1.5000%	0.5900%	0.6442%	0.6608%	0.6525%	0.6667%	0.6697%	5.3800%	5.3175%	-2.1667%	
May-97	6.0900%	4.2300%	0.5800%	0.6317%	0.6500%	0.6408%	0.6542%	0.6575%	5.5100%	5.4492%	3.5758%	
Jun-97	4.4800%	3.1400%	0.5900%	0.6175%	0.6350%	0.6263%	0.6400%	0.6437%	3.8900%	3.8538%	2.5000%	
Jul-97	7.9600%	2.3000%	0.5800%	0.5950%	0.6133%	0.6042%	0.6192%	0.6241%	7.3800%	7.3558%	1.6808%	
Aug-97	-5.6000%	-1.8300%	0.4900%	0.6017%	0.6167%	0.6092%	0.6217%	0.6248%	-6.0900%	-6.2092%	-2.4517%	
Sep-97	5.4800%	4.3300%	0.5800%	0.5950%	0.6117%	0.6033%	0.6192%	0.6229%	4.9000%	4.8767%	3.7108%	
Oct-97	-3.3400%	0.9800%	0.5400%	0.5833%	0.6000%	0.5917%	0.6067%	0.6130%	-3.8800%	-3.9317%	0.3733%	
Nov-97	4.6300%	7.0700%	0.4700%	0.5725%	0.5892%	0.5808%	0.5958%	0.6039%	4.1600%	4.0492%	6.4742%	
Dec-97	1.7200%	7.5200%	0.5400%	0.5633%	0.5825%	0.5729%	0.5892%	0.5970%	1.1800%	1.1471%	6.9308%	
Jan-98	1.1100%	-3.9500%	0.4800%	0.5508%	0.5683%	0.5596%	0.5783%	0.5878%	0.6300%	0.5504%	-4.5283%	
Feb-98	7.2100%	3.4100%	0.4400%	0.5558%	0.5733%	0.5646%	0.5825%	0.5932%	6.7700%	6.6454%	2.8275%	
Mar-98	5.1200%	6.4200%	0.5200%	0.5592%	0.5775%	0.5683%	0.5867%	0.5968%	4.6000%	4.5517%	5.8333%	
Apr-98	1.0100%	-1.9300%	0.4900%	0.5575%	0.5750%	0.5663%	0.5850%	0.5968%	0.5200%	0.4438%	-2.5150%	
May-98	-1.7200%	-0.5000%	0.4800%	0.5575%	0.5758%	0.5667%	0.5850%	0.5969%	-2.2000%	-2.2867%	-1.0850%	
Jun-98	4.0600%	3.6900%	0.5200%	0.5442%	0.5650%	0.5546%	0.5758%	0.5864%	3.5400%	3.5054%	-3.1142%	
Jul-98	-1.0600%	-4.9300%	0.4900%	0.5458%	0.5650%	0.5554%	0.5758%	0.5853%	-1.5500%	-1.6154%	-5.5058%	
Aug-98	-14.4600%	1.6100%	0.4800%	0.5433%	0.5642%	0.5538%	0.5725%	0.5835%	-14.9400%	-15.0138%	1.0375%	
Sep-98	6.4100%	8.3500%	0.4400%	0.5333%	0.5567%	0.5450%	0.5650%	0.5780%	5.9700%	5.8650%	7.7850%	
Oct-98	8.1300%	-1.6600%	0.4200%	0.5308%	0.5583%	0.5446%	0.5667%	0.5796%	7.7100%	7.5854%	-2.2267%	
Nov-98	6.0600%	1.3400%	0.4500%	0.5342%	0.5658%	0.5500%	0.5742%	0.5864%	5.6100%	5.5100%	0.7658%	
Dec-98	5.7600%	2.9500%	0.4500%	0.5183%	0.5542%	0.5363%	0.5650%	0.5757%	5.3100%	5.2238%	2.3850%	
Jan-99	4.1800%	-4.5100%	0.4200%	0.5200%	0.5567%	0.5383%	0.5683%	0.5808%	3.7600%	3.6417%	-5.0783%	
Feb-99	-3.1100%	-3.6400%	0.4000%	0.5333%	0.5658%	0.5496%	0.5783%	0.5897%	-3.5100%	-3.6596%	-4.2183%	
Mar-99	4.0000%	-1.4800%	0.5300%	0.5517%	0.5817%	0.5667%	0.5925%	0.6046%	3.4700%	3.4333%	-2.0725%	
Apr-99	3.8700%	8.8400%	0.4800%	0.5533%	0.5800%	0.5667%	0.5925%	0.6012%	3.3900%	3.3033%	8.2475%	
May-99	-2.3600%	6.0900%	0.4500%	0.5775%	0.6025%	0.5900%	0.6150%	0.6214%	-2.8100%	-2.9500%	5.4750%	
Jun-99	5.5500%	-3.3200%	0.5500%	0.6025%	0.6267%	0.6146%	0.6392%	0.6445%	5.0000%	4.9354%	-3.9592%	
Jul-99	-3.1200%	-1.1400%	0.5100%	0.5992%	0.6233%	0.6113%	0.6350%	0.6418%	-3.6300%	-3.7313%	-1.7750%	
Aug-99	-0.4900%	1.1700%	0.5400%	0.6167%	0.6400%	0.6283%	0.6517%	0.6589%	-1.0300%	-1.1183%	0.5183%	
Sep-99	-2.7400%	-4.8000%	0.5200%	0.6158%	0.6400%	0.6279%	0.6517%	0.6610%	-3.2600%	-3.3679%	-5.4517%	
Oct-99	6.3300%	1.5700%	0.5000%	0.6292%	0.6492%	0.6392%	0.6633%	0.6721%	5.8300%	5.6908%	0.9067%	
Nov-99	2.0300%	-7.7300%	0.5600%	0.6133%	0.6350%	0.6242%	0.6517%	0.6610%	1.4700%	1.4058%	-8.3817%	
Dec-99	5.8900%	0.9300%	0.5500%	0.6292%	0.6483%	0.6388%	0.6667%	0.6766%	5.3400%	5.2513%	0.2633%	
Jan-00	-5.0200%	10.8500%	0.5700%	0.6483%	0.6633%	0.6558%	0.6808%	0.6956%	-5.5900%	-5.6758%	10.1692%	
Feb-00	-1.8900%	-5.7800%	0.5100%	0.6400%	0.6517%	0.6458%	0.6658%	0.6874%	-2.4000%	-2.5358%	-6.4458%	
Mar-00	9.7800%	3.4900%	0.5400%	0.6400%	0.6525%	0.6463%	0.6658%	0.6906%	9.2400%	9.1338%	2.8242%	
Apr-00	-3.0100%	7.9400%	0.4700%	0.6367%	0.6517%	0.6442%	0.6667%	0.6898%	-3.4800%	-3.6542%	7.2733%	
May-00	-2.0500%	4.8600%	0.5600%	0.6658%	0.6867%	0.6763%	0.7033%	0.7244%	-2.6100%	-2.7263%	4.1567%	
Jun-00	2.4700%	-5.7500%	0.5200%	0.6392%	0.6558%	0.6475%	0.6750%	0.6980%	1.9500%	1.8225%	-6.4250%	
Jul-00	-1.5600%	6.7700%	0.5200%	0.6375%	0.6508%	0.6442%	0.6750%	0.6882%	-2.0800%	-2.2042%	6.0950%	
Aug-00	6.2100%	13.7200%	0.5000%	0.6292%	0.6417%	0.6354%	0.6625%	0.6774%	5.7100%	5.5746%	13.0575%	
Sep-00	-5.2800%	9.1500%	0.4600%	0.6350%	0.6525%	0.6438%	0.6758%	0.6853%	-5.7400%	-5.9238%	8.4742%	
Oct-00	-0.4200%	-3.5700%	0.5300%	0.6292%	0.6508%	0.6400%	0.6733%	0.6787%	-0.9500%	-1.0600%	-4.2433%	

	Avg Aaa and Aa										
	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Nov-00	-7.8800%	-1.3200%	0.4800%	0.6208%	0.6458%	0.6333%	0.6692%	0.6772%	-8.3600%	-8.5133%	-1.9892%
Dec-00	0.4900%	9.8200%	0.4500%	0.6008%	0.6233%	0.6121%	0.6492%	0.6547%	0.0400%	-0.1221%	9.1708%
Jan-01	3.5500%	-9.6700%	0.4900%	0.5958%	0.6150%	0.6054%	0.6442%	0.6499%	3.0600%	2.9446%	-10.3142%
Feb-01	-9.1200%	3.5300%	0.4200%	0.5917%	0.6100%	0.6008%	0.6350%	0.6449%	-9.5400%	-9.7208%	2.8950%
Mar-01	-6.3400%	-0.6300%	0.4500%	0.5817%	0.6017%	0.5917%	0.6258%	0.6394%	-6.7900%	-6.9317%	-1.2558%
Apr-01	7.7700%	6.0500%	0.4700%	0.6000%	0.6192%	0.6096%	0.6433%	0.6603%	7.3000%	7.1604%	5.4067%
May-01	0.6700%	-3.4300%	0.5000%	0.6075%	0.6250%	0.6163%	0.6492%	0.6663%	0.1700%	0.0538%	-4.0792%
Jun-01	-2.4300%	-7.9100%	0.4700%	0.5983%	0.6117%	0.6050%	0.6350%	0.6546%	-2.9000%	-3.0350%	-8.5450%
Jul-01	-0.9800%	-4.4800%	0.5200%	0.5942%	0.6058%	0.6000%	0.6292%	0.6494%	-1.5000%	-1.5800%	-5.1092%
Aug-01	-6.2600%	-2.9000%	0.4600%	0.6000%	0.5925%	0.5963%	0.6158%	0.6329%	-6.7200%	-6.8563%	-3.5158%
Sep-01	-8.0800%	-11.5200%	0.4100%	0.5975%	0.6058%	0.6017%	0.6292%	0.6423%	-8.4900%	-8.6817%	-12.1492%
Oct-01	1.9100%	-0.1700%	0.4800%	0.5858%	0.5942%	0.5900%	0.6225%	0.6373%	1.4300%	1.3200%	-0.7925%
Nov-01	7.6700%	-5.5200%	0.4100%	0.5808%	0.5842%	0.5825%	0.6208%	0.6287%	7.2600%	7.0875%	-6.1408%
Dec-01	0.8800%	2.6000%	0.4600%	0.5633%	0.5992%	0.5813%	0.6275%	0.6526%	0.4200%	0.2988%	1.9725%
Jan-02	-1.4600%	-5.6500%	0.4800%	0.5458%	0.5858%	0.5658%	0.6067%	0.6387%	-1.9400%	-2.0258%	-6.2567%
Feb-02	-1.9300%	-2.3500%	0.4300%	0.5425%	0.5792%	0.5608%	0.5950%	0.6283%	-2.3600%	-2.4908%	-2.9450%
Mar-02	3.7600%	12.2300%	0.4300%	0.5675%	0.6017%	0.5846%	0.6183%	0.6453%	3.3300%	3.1754%	11.6117%
Apr-02	-6.0600%	-1.7100%	0.5400%	0.5633%	0.5967%	0.5800%	0.6150%	0.6316%	-6.6000%	-6.6400%	-2.3250%
May-02	-0.7400%	-9.0200%	0.4900%	0.5625%	0.6000%	0.5813%	0.6192%	0.6272%	-1.2300%	-1.3213%	-9.6392%
Jun-02	-7.1200%	-7.1000%	0.4400%	0.5533%	0.5900%	0.5717%	0.6108%	0.6180%	-7.5600%	-7.6917%	-7.7108%
Jul-02	-7.8000%	-13.8000%	0.5100%	0.5442%	0.5817%	0.5629%	0.6017%	0.6101%	-8.3100%	-8.3629%	-14.4017%
Aug-02	0.6600%	3.5000%	0.4400%	0.5308%	0.5700%	0.5504%	0.5917%	0.5979%	0.2200%	0.1096%	2.9083%
Sep-02	-10.8700%	-12.8300%	0.4200%	0.5125%	0.5525%	0.5325%	0.5817%	0.5906%	-11.2900%	-11.4025%	-13.4117%
Oct-02	8.8000%	-1.7300%	0.4000%	0.5275%	0.5617%	0.5446%	0.5892%	0.6016%	8.4000%	8.2554%	-2.3192%
Nov-02	5.8900%	2.4900%	0.4000%	0.5258%	0.5592%	0.5425%	0.5858%	0.5952%	5.4900%	5.3475%	1.9042%
Dec-02	-5.8700%	4.1600%	0.4500%	0.5175%	0.5525%	0.5350%	0.5783%	0.5896%	-6.3200%	-6.4050%	3.5817%
Jan-03	-2.6200%	-2.9200%	0.4100%	0.5142%	0.5492%	0.5317%	0.5725%	0.5887%	-3.0300%	-3.1517%	-3.4925%
Feb-03	-1.5000%	-4.9000%	0.3800%	0.4958%	0.5283%	0.5121%	0.5550%	0.5778%	-1.8800%	-2.0121%	-5.4550%
Mar-03	0.9700%	5.0500%	0.4000%	0.4908%	0.5233%	0.5071%	0.5467%	0.5663%	0.5700%	0.4629%	4.5033%
Apr-03	8.2400%	8.8500%	0.4000%	0.4783%	0.5183%	0.4983%	0.5392%	0.5540%	7.8400%	7.7417%	8.3108%
May-03	5.2700%	10.2100%	0.3900%	0.4350%	0.4875%	0.4613%	0.5167%	0.5310%	4.8800%	4.8088%	9.6933%
Jun-03	1.2800%	1.1900%	0.3600%	0.4142%	0.4767%	0.4454%	0.5100%	0.5173%	0.9200%	0.8346%	0.6800%
Jul-03	1.7600%	-6.5000%	0.3800%	0.4575%	0.5058%	0.4817%	0.5308%	0.5457%	1.3800%	1.2783%	-7.0308%
Aug-03	1.9500%	1.7500%	0.4200%	0.4892%	0.5258%	0.5075%	0.5400%	0.5659%	1.5300%	1.4425%	1.2100%
Sep-03	-1.0600%	4.5700%	0.4600%	0.4767%	0.5108%	0.4938%	0.5250%	0.5487%	-1.5200%	-1.5538%	4.0450%
Oct-03	5.6600%	1.1200%	0.4100%	0.4750%	0.5092%	0.4921%	0.5233%	0.5350%	5.2500%	5.1679%	0.5967%
Nov-03	0.8800%	-0.0500%	0.3900%	0.4708%	0.5067%	0.4888%	0.5217%	0.5309%	0.4900%	0.3913%	-0.5717%
Dec-03	5.2400%	6.7500%	0.4700%	0.4708%	0.5017%	0.4863%	0.5150%	0.5233%	4.7700%	4.7538%	6.2350%
Jan-04	1.8400%	2.1600%	0.4200%	0.4617%	0.4925%	0.4771%	0.5050%	0.5128%	1.4200%	1.3629%	1.6550%
Feb-04	1.3900%	1.8100%	0.3800%	0.4583%	0.4892%	0.4738%	0.5083%	0.5125%	1.0100%	0.9163%	1.3017%
Mar-04	-1.5100%	1.0400%	0.4300%	0.4442%	0.4750%	0.4596%	0.4942%	0.4975%	-1.9400%	-1.9696%	0.5458%
Apr-04	-1.5700%	-3.6200%	0.3900%	0.4775%	0.5083%	0.4929%	0.5275%	0.5271%	-1.9600%	-2.0629%	-4.1475%
May-04	1.3700%	0.7900%	0.4000%	0.5033%	0.5333%	0.5183%	0.5550%	0.5517%	0.9700%	0.8517%	0.2350%
Jun-04	1.9400%	1.5500%	0.4800%	0.5008%	0.5175%	0.5092%	0.5250%	0.5388%	1.4600%	1.4308%	1.0250%
Jul-04	-3.3100%	1.7300%	0.4300%	0.4850%	0.5017%	0.4933%	0.5075%	0.5227%	-3.7400%	-3.8033%	1.2225%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Aug-04	0.4000%	3.9300%	0.4500%	0.4708%	0.4892%	0.4800%	0.4958%	0.5124%	-0.0500%	-0.0800%	3.4342%
Sep-04	1.0800%	0.9100%	0.4000%	0.4550%	0.4775%	0.4663%	0.4825%	0.4985%	0.6800%	0.6138%	0.4275%
Oct-04	1.5300%	4.9500%	0.3800%	0.4558%	0.4742%	0.4650%	0.4783%	0.4992%	1.1500%	1.0650%	4.4717%
Nov-04	4.0500%	4.0700%	0.4100%	0.4600%	0.4767%	0.4683%	0.4825%	0.4963%	3.6400%	3.5817%	3.5875%
Dec-04	3.4000%	2.6500%	0.4300%	0.4558%	0.4742%	0.4650%	0.4817%	0.4939%	2.9700%	2.9350%	2.1683%
Jan-05	-2.4400%	2.2100%	0.4100%	0.4467%	0.4650%	0.4558%	0.4733%	0.4828%	-2.8500%	-2.8958%	1.7367%
Feb-05	2.1000%	1.9700%	0.3500%	0.4333%	0.4533%	0.4433%	0.4625%	0.4679%	1.7500%	1.6567%	1.5075%
Mar-05	-1.7700%	1.0800%	0.4100%	0.4500%	0.4700%	0.4600%	0.4800%	0.4855%	-2.1800%	-2.2300%	0.6000%
Apr-05	-1.9000%	3.2100%	0.3900%	0.4442%	0.4533%	0.4488%	0.4633%	0.4708%	-2.2900%	-2.3488%	2.7467%
May-05	3.1800%	0.0800%	0.4000%	0.4292%	0.4408%	0.4350%	0.4492%	0.4616%	2.7800%	2.7450%	-0.3692%
Jun-05	0.1400%	5.7600%	0.3600%	0.4133%	0.4183%	0.4158%	0.0042%	0.4502%	-0.2200%	-0.2758%	5.7558%
Jul-05	3.7200%	2.3300%	0.3400%	0.4217%	0.4283%	0.4250%	0.4317%	0.4583%	3.3800%	3.2950%	1.8983%
Aug-05	-0.9100%	0.7300%	0.4000%	0.4242%	0.4333%	0.4288%	0.4358%	0.4591%	-1.3100%	-1.3388%	0.2942%
Sep-05	0.8100%	4.0200%	0.3500%	0.4275%	0.4367%	0.4321%	0.4392%	0.4585%	0.4600%	0.3779%	3.5808%
Oct-05	-1.6700%	-6.1700%	0.3900%	0.4450%	0.4550%	0.4500%	0.4583%	0.4812%	-2.0600%	-2.1200%	-6.6283%
Nov-05	3.7800%	-0.3900%	0.3900%	0.4521%	0.4625%	0.4573%	0.4658%	0.4899%	3.3900%	3.3227%	-0.8558%
Dec-05	0.0300%	1.1000%	0.3900%	0.4483%	0.4592%	0.4538%	0.4625%	0.4848%	-0.3600%	-0.4238%	0.6375%
Jan-06	2.6500%	2.6348%	0.4000%	0.4408%	0.4542%	0.4475%	0.4583%	0.4792%	2.2500%	2.2025%	2.1765%
Feb-06	0.2700%	0.9527%	0.3600%	0.4458%	0.4592%	0.4525%	0.4625%	0.4850%	-0.0900%	-0.1825%	0.4902%
Mar-06	1.2400%	-4.6345%	0.3900%	0.4600%	0.4725%	0.4663%	0.4758%	0.4983%	0.8500%	0.7738%	-5.1103%
Apr-06	1.3400%	1.7167%	0.3900%	0.4867%	0.5000%	0.4933%	0.5017%	0.5242%	0.9500%	0.8467%	1.2150%
May-06	-2.8800%	1.4281%	0.4800%	0.4958%	0.5108%	0.5033%	0.5133%	0.5350%	-3.3600%	-3.3833%	0.9148%
Jun-06	0.1400%	2.4158%	0.4400%	0.4908%	0.5092%	0.5000%	0.5133%	0.5333%	-0.3000%	-0.3600%	1.9025%
Jul-06	0.6200%	5.1109%	0.4500%	0.4875%	0.5067%	0.4971%	0.5108%	0.5308%	0.1700%	0.1229%	4.6001%
Aug-06	2.3800%	2.7122%	0.4300%	0.4733%	0.4925%	0.4829%	0.4975%	0.5167%	1.9500%	1.8971%	2.2147%
Sep-06	2.5800%	-1.7362%	0.3900%	0.4592%	0.4792%	0.4692%	0.4842%	0.5000%	2.1900%	2.1108%	-2.2204%
Oct-06	3.2600%	5.6026%	0.4200%	0.4592%	0.4783%	0.4688%	0.4833%	0.4983%	2.8400%	2.7913%	5.1193%
Nov-06	1.9000%	2.1405%	0.3900%	0.4442%	0.4642%	0.4542%	0.4675%	0.4833%	1.5100%	1.4458%	1.6730%
Dec-06	1.4000%	1.1817%	0.3600%	0.4408%	0.4650%	0.4529%	0.4683%	0.4842%	1.0400%	0.9471%	0.7134%
Jan-07	1.5100%	-0.1134%	0.4300%	0.4500%	0.4792%	0.4646%	0.4817%	0.4967%	1.0800%	1.0454%	-0.5951%
Feb-07	-1.9600%	5.0341%	0.3800%	0.4492%	0.4767%	0.4629%	0.4775%	0.4917%	-2.3400%	-2.4229%	4.5566%
Mar-07	1.1200%	4.1373%	0.3900%	0.4417%	0.4717%	0.4567%	0.4717%	0.4875%	0.7300%	0.6633%	3.6656%
Apr-07	4.4300%	4.3759%	0.4200%	0.4558%	0.4858%	0.4708%	0.4858%	0.4975%	4.0100%	3.9592%	3.8901%
May-07	3.4900%	0.5145%	0.4100%	0.4558%	0.4875%	0.4717%	0.4883%	0.4992%	3.0800%	3.0183%	0.0262%
Jun-07	-1.6600%	-5.0621%	0.4000%	0.0483%	0.5142%	0.2812%	0.5150%	0.5250%	-2.0600%	-1.9412%	-5.5771%
Jul-07	-3.1000%	-3.5666%	0.4600%	0.4775%	0.5075%	0.4925%	0.5092%	0.5208%	-3.5600%	-3.5925%	-4.0758%
Aug-07	1.5000%	2.0956%	0.4200%	0.4825%	0.5050%	0.4938%	0.5092%	0.5200%	1.0800%	1.0063%	1.5864%
Sep-07	3.7400%	3.5427%	0.3700%	0.4783%	0.5017%	0.4900%	0.5083%	0.5150%	3.3700%	3.2500%	3.0344%
Oct-07	1.5900%	6.8641%	0.4300%	0.4717%	0.4950%	0.4833%	0.5033%	0.5092%	1.1600%	1.1067%	6.3608%
Nov-07	-4.1800%	0.3405%	0.3900%	0.4533%	0.4817%	0.4675%	0.4892%	0.4975%	-4.5700%	-4.6475%	-0.1487%
Dec-07	-0.6900%	0.2754%	0.3700%	0.4575%	0.4925%	0.4750%	0.5025%	0.5133%	-1.0600%	-1.1650%	-0.2271%
Jan-08	-6.0000%	-6.8133%	0.4000%	0.4442%	0.4817%	0.4629%	0.4817%	0.5017%	-6.4000%	-6.4629%	-7.2950%
Feb-08	-3.2500%	-4.9956%	0.3400%	0.4608%	0.4975%	0.4792%	0.4775%	0.5175%	-3.5900%	-3.7292%	-5.4731%
Mar-08	-0.4300%	1.7056%	0.3700%	0.4592%	0.4917%	0.4754%	0.4717%	0.5175%	-0.8000%	-0.9054%	1.2339%
Apr-08	4.8700%	5.5163%	0.3500%	0.4625%	0.4942%	0.4783%	0.4858%	0.5242%	4.5200%	4.3917%	5.0305%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp			RPMKT	RPAAAAA	RPSPAA
						Aa PU	A PU				
May-08	1.3000%	3.1987%	0.3700%	0.4642%	0.5000%	0.4821%	0.4883%	0.5225%	0.9300%	0.8179%	2.7104%
Jun-08	-8.4300%	-0.8668%	0.4000%	0.4733%	0.5092%	0.4913%	0.5150%	0.5317%	-8.8300%	-8.9213%	-1.3818%
Jul-08	-0.8400%	-6.1108%	0.3900%	0.4725%	0.5042%	0.4883%	0.5092%	0.5333%	-1.2300%	-1.3283%	-6.6200%
Aug-08	1.4500%	-1.6602%	0.3600%	0.4700%	0.5008%	0.4854%	0.5092%	0.5308%	1.0900%	0.9646%	-2.1694%
Sep-08	-8.9100%	-11.4823%	0.3900%	0.4708%	0.5025%	0.4867%	0.5083%	0.5408%	-9.3000%	-9.3967%	-11.9906%
Oct-08	-16.7900%	-11.6128%	0.3700%	0.5233%	0.5658%	0.5446%	0.5033%	0.6300%	-17.1600%	-17.3346%	-12.1161%
Nov-08	-7.1800%	2.7894%	0.3600%	0.5100%	0.5608%	0.5354%	0.4892%	0.6333%	-7.5400%	-7.7154%	2.3002%
Dec-08	1.0600%	-1.6797%	0.3300%	0.4217%	0.4842%	0.4529%	0.5025%	0.5450%	0.7300%	0.6071%	-2.1822%
Jan-09	-8.4300%	-0.4541%	0.2400%	0.4208%	0.4867%	0.4538%	0.5008%	0.5325%	-8.6700%	-8.8838%	-0.9549%
Feb-09	-10.6500%	-12.5708%	0.3000%	0.4392%	0.5017%	0.4704%	0.5092%	0.5250%	-10.9500%	-11.1204%	-13.0800%
Mar-09	8.7600%	2.5255%	0.3500%	0.4583%	0.5092%	0.4838%	0.5117%	0.5350%	8.4100%	8.2763%	2.0138%
Apr-09	9.5700%	0.8462%	0.2900%	0.4492%	0.5142%	0.4817%	0.5167%	0.5400%	9.2800%	9.0883%	0.3295%
May-09	5.5900%	3.5287%	0.3300%	0.4617%	0.5200%	0.4908%	0.5192%	0.5408%	5.2600%	5.0992%	3.0095%
Jun-09	0.2000%	5.5202%	0.3800%	0.4675%	0.5100%	0.4888%	0.5108%	0.5167%	-0.1800%	-0.2888%	5.0094%
Jul-09	7.5600%	4.0755%	0.3600%	0.4508%	0.4758%	0.4633%	0.4692%	0.4975%	7.2000%	7.0967%	3.6063%
Aug-09	3.6100%	0.5460%	0.3600%	0.4383%	0.4542%	0.4463%	0.4442%	0.4758%	3.2500%	3.1638%	0.1018%
Sep-09	3.7300%	1.4284%	0.3400%	0.4275%	0.4342%	0.4308%	0.4292%	0.4608%	3.3900%	3.2992%	0.9992%
Oct-09	-1.8600%	-2.8427%	0.3300%	0.4292%	0.4367%	0.4329%	0.4358%	0.4625%	-2.1900%	-2.2929%	-3.2785%
Nov-09	6.0000%	4.5586%	0.3500%	0.4325%	0.4408%	0.4367%	0.4442%	0.4700%	5.6500%	5.5633%	4.1144%
Dec-09	1.9300%	5.5813%	0.3400%	0.4383%	0.4533%	0.4458%	0.4600%	0.4825%	1.5900%	1.4842%	5.1213%
Jan-10	-3.6000%	-4.7493%	0.3600%	0.4383%	0.4583%	0.4483%	0.4625%	0.4808%	-3.9600%	-4.0483%	-5.2118%
Feb-10	3.1000%	-1.4896%	0.3300%	0.4458%	0.4683%	0.4571%	0.4742%	0.4892%	2.7700%	2.6429%	-1.9638%
Mar-10	6.0300%	2.7978%	0.4000%	0.4392%	0.4642%	0.4517%	0.4700%	0.4867%	5.6300%	5.5783%	2.3278%
Apr-10	1.5800%	2.8058%	0.3800%	0.4408%	0.4642%	0.4525%	0.4683%	0.4842%	1.2000%	1.1275%	2.3375%
May-10	-7.9900%	-5.7600%	0.3400%	0.4133%	0.4375%	0.4254%	0.4408%	0.4583%	-8.3300%	-8.4154%	-6.2008%
Jun-10	-5.2300%	-0.6360%	0.3700%	0.4067%	0.4300%	0.4183%	0.4350%	0.4550%	-5.6000%	-5.6483%	-1.0710%
Jul-10	7.0100%	7.7413%	0.3100%	0.3933%	0.4133%	0.4033%	0.4158%	0.4383%	6.7000%	6.6067%	7.3255%
Aug-10	-4.5100%	1.2496%	0.3200%	0.3742%	0.3933%	0.3838%	0.3958%	0.4175%	-4.8300%	-4.8938%	0.8538%
Sep-10	8.9200%	2.9575%	0.2600%	0.3775%	0.3933%	0.3854%	0.3950%	0.4175%	8.6600%	8.5346%	2.5625%
Oct-10	3.8000%	1.2869%	0.2700%	0.3900%	0.4025%	0.3963%	0.4075%	0.4250%	3.5300%	3.4038%	0.8794%
Nov-10	0.0100%	-3.2323%	0.3200%	0.4058%	0.4225%	0.4142%	0.4267%	0.4475%	-0.3100%	-0.4042%	-3.6590%
Dec-10	6.6800%	3.1151%	0.3200%	0.4183%	0.4383%	0.4283%	0.4433%	0.4633%	6.3600%	6.2517%	2.6718%
Jan-11	2.3700%	1.4241%	0.3500%	0.4200%	0.4383%	0.4292%	0.4408%	0.4642%	2.0200%	1.9408%	0.9833%
Feb-11	3.4300%	1.1235%	0.3200%	0.4350%	0.4475%	0.4413%	0.4517%	0.4733%	3.1100%	2.9888%	0.6718%
Mar-11	0.0400%	0.1474%	0.3600%	0.4275%	0.4400%	0.4338%	0.4442%	0.4633%	-0.3200%	-0.3938%	-0.2968%
Apr-11	2.9600%	4.1878%	0.3400%	0.4300%	0.4408%	0.4354%	0.4433%	0.4625%	2.6200%	2.5246%	3.7445%
May-11	-1.1300%	1.9754%	0.3600%	0.4133%	0.4217%	0.4175%	0.4233%	0.4433%	-1.4900%	-1.5475%	1.5521%
Jun-11	-1.6700%	-0.1283%	0.3200%	0.4158%	0.4200%	0.4179%	0.4200%	0.4383%	-1.9900%	-2.0879%	-0.5483%
Jul-11	-2.0300%	-0.7538%	0.3200%	0.4108%	0.4192%	0.4150%	0.4208%	0.4392%	-2.3500%	-2.4450%	-1.1746%
Aug-11	-5.4300%	2.0388%	0.3400%	0.3642%	0.3725%	0.3683%	0.3700%	0.3908%	-5.7700%	-5.7983%	1.6688%
Sep-11	-7.0300%	0.2271%	0.2600%	0.3408%	0.3525%	0.3467%	0.3533%	0.3733%	-7.2900%	-7.3767%	-0.1262%
Oct-11	10.9300%	3.8747%	0.2200%	0.3317%	0.3467%	0.3392%	0.3508%	0.3767%	10.7100%	10.5908%	3.5239%
Nov-11	-0.2200%	0.8014%	0.2400%	0.3225%	0.3308%	0.3267%	0.3267%	0.3542%	-0.4600%	-0.5467%	0.4747%
Dec-11	1.0200%	3.3767%	0.2200%	0.3275%	0.3358%	0.3317%	0.3333%	0.3608%	0.8000%	0.6883%	3.0434%
Jan-12	4.4800%	-3.3237%	0.2100%	0.3342%	0.3342%	0.3342%	0.3358%	0.3617%	4.2700%	4.1458%	-3.6595%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp			RPMKT	RPAAAAA	RPSPAA
						Aa PU	A PU				
Feb-12	4.3200%	0.3451%	0.2000%	0.3325%	0.3325%	0.3325%	0.3350%	0.3633%	4.1200%	3.9875%	0.0101%
Mar-12	3.2900%	1.3720%	0.2200%	0.3325%	0.3450%	0.3388%	0.3467%	0.3733%	3.0700%	2.9513%	1.0253%
Apr-12	-0.6300%	2.1237%	0.2500%	0.3300%	0.3400%	0.3350%	0.3417%	0.3667%	-0.8800%	-0.9650%	1.7820%
May-12	-6.0100%	0.2161%	0.2300%	0.3167%	0.3258%	0.3213%	0.3267%	0.3500%	-6.2400%	-6.3313%	-0.1106%
Jun-12	4.1200%	4.1004%	0.1800%	0.3033%	0.3150%	0.3092%	0.3158%	0.3400%	3.9400%	3.8108%	3.7846%
Jul-12	1.3900%	2.8439%	0.2000%	0.2833%	0.2950%	0.2892%	0.2983%	0.3275%	1.1900%	1.1008%	2.5456%
Aug-12	2.2500%	-4.4721%	0.1800%	0.2900%	0.3008%	0.2954%	0.3042%	0.3333%	2.0700%	1.9546%	-4.7763%
Sep-12	2.5800%	1.2281%	0.1700%	0.2908%	0.3067%	0.2988%	0.3075%	0.3350%	2.4100%	2.2813%	0.9206%
Oct-12	-1.8500%	1.7240%	0.2100%	0.2892%	0.3025%	0.2958%	0.3067%	0.3258%	-2.0600%	-2.1458%	1.4173%
Nov-12	0.5800%	-4.6428%	0.1900%	0.2917%	0.2975%	0.2946%	0.3000%	0.3200%	0.3900%	0.2854%	-4.9428%
Dec-12	0.9100%	0.1108%	0.1900%	0.3042%	0.3083%	0.3063%	0.3125%	0.3333%	0.7200%	0.6038%	-0.2017%
Jan-13	5.1800%	3.5100%	0.2200%	0.3167%	0.3225%	0.3196%	0.3250%	0.3458%	4.9600%	4.8604%	3.1850%
Feb-13	1.3600%	3.3900%	0.2200%	0.3250%	0.3292%	0.3271%	0.3292%	0.3483%	1.1400%	1.0329%	3.0608%
Mar-13	3.7500%	5.4000%	0.2100%	0.3167%	0.3225%	0.3196%	0.3250%	0.3458%	3.5400%	3.4304%	5.0750%
Apr-13	1.9300%	5.9000%	0.2600%	0.3108%	0.3142%	0.3125%	0.3117%	0.3333%	1.6700%	1.6175%	5.5883%
May-13	2.3400%	-8.9600%	0.2300%	0.3242%	0.3283%	0.3263%	0.3258%	0.3475%	2.1100%	2.0138%	-9.2858%
Jun-13	-1.3400%	1.1400%	0.2400%	0.3558%	0.3600%	0.3579%	0.3558%	0.3775%	-1.5800%	-1.6979%	0.7842%
Jul-13	5.0900%	3.8500%	0.3000%	0.3617%	0.3717%	0.3667%	0.3700%	0.3900%	4.7900%	4.7233%	3.4800%
Aug-13	-2.9000%	-5.0000%	0.2800%	0.3783%	0.3858%	0.3821%	0.3775%	0.3942%	-3.1800%	-3.2821%	-5.3775%
Sep-13	3.1400%	1.0800%	0.2900%	0.3867%	0.3908%	0.3888%	0.3817%	0.4000%	2.8500%	2.7513%	0.6983%
Oct-13	4.6000%	3.7700%	0.2900%	0.3775%	0.3825%	0.3800%	0.3733%	0.3917%	4.3100%	4.2200%	3.3967%
Nov-13	3.0500%	-1.9900%	0.2700%	0.3858%	0.3892%	0.3875%	0.3800%	0.3975%	2.7800%	2.6625%	-2.3700%
Dec-13	2.5300%	0.7600%	0.3100%	0.3850%	0.3900%	0.3875%	0.3825%	0.4008%	2.2200%	2.1425%	0.3775%
Jan-14	-3.4600%	2.8100%	0.3200%	0.3742%	0.3775%	0.3758%	0.3700%	0.3858%	-3.7800%	-3.8358%	2.4400%
Feb-14	4.5700%	3.3500%	0.2600%	0.3708%	0.3717%	0.3713%	0.3650%	0.3775%	4.3100%	4.1988%	2.9850%
Mar-14	0.8400%	3.3700%	0.2900%	0.3650%	0.3700%	0.3675%	0.3667%	0.3758%	0.5500%	0.4725%	3.0033%
Apr-14	0.7400%	4.2600%	0.2800%	0.3533%	0.3608%	0.3571%	0.3583%	0.3675%	0.4600%	0.3829%	3.9017%
May-14	2.3500%	-1.0500%	0.2800%	0.3467%	0.3500%	0.3483%	0.3467%	0.3550%	2.0700%	2.0017%	-1.3967%
Jun-14	2.0700%	4.4800%	0.2500%	0.3542%	0.3550%	0.3546%	0.3525%	0.3575%	1.8200%	1.7154%	4.1275%
Jul-14	-1.3800%	-6.8000%	0.2700%	0.3467%	0.3500%	0.3483%	0.3467%	0.3525%	-1.6500%	-1.7283%	-7.1467%
Aug-14	4.0000%	4.9500%	0.2600%	0.3400%	0.3417%	0.3408%	0.3392%	0.3442%	3.7400%	3.6592%	4.6108%
Sep-14	-1.4000%	-1.8600%	0.2300%	0.3425%	0.3492%	0.3458%	0.3483%	0.3533%	-1.6300%	-1.7458%	-2.2083%
Oct-14	2.4400%	8.0200%	0.2500%	0.3267%	0.3325%	0.3296%	0.3317%	0.3383%	2.1900%	2.1104%	7.6883%
Nov-14	2.6900%	1.2000%	0.2300%	0.3267%	0.3367%	0.3317%	0.3358%	0.3408%	2.4600%	2.3583%	0.8642%
Dec-14	-0.2500%	3.5000%	0.2200%	0.3158%	0.3242%	0.3200%	0.3250%	0.3292%	-0.4700%	-0.5700%	3.1750%
Jan-15	-3.0000%	2.3300%	0.2000%	0.2883%	0.2950%	0.2917%	0.2933%	0.2983%	-3.2000%	-3.2917%	2.0367%
Feb-15	5.7500%	-6.3300%	0.1500%	0.3008%	0.3033%	0.3021%	0.3017%	0.3058%	5.6000%	5.4479%	-6.6317%
Mar-15	-1.5800%	-0.4900%	0.2100%	0.3033%	0.3083%	0.3058%	0.3058%	0.3117%	-1.7900%	-1.8858%	-0.7958%
Apr-15	0.9600%	-1.2900%	0.1900%	0.2933%	0.3033%	0.2983%	0.3025%	0.3125%	0.7700%	0.6617%	-1.5925%
May-15	1.2900%	0.6500%	0.2000%	0.3317%	0.3400%	0.3358%	0.3375%	0.3475%	1.0900%	0.9542%	0.3125%
Jun-15	-1.9400%	-6.0000%	0.2300%	0.3492%	0.3558%	0.3525%	0.3575%	0.3658%	-2.1700%	-2.2925%	-6.3575%
Jul-15	2.1000%	4.8100%	0.2400%	0.3458%	0.3542%	0.3500%	0.3558%	0.3667%	1.8600%	1.7500%	4.4542%
Aug-15	-6.0300%	-3.9700%	0.2200%	0.3367%	0.3442%	0.3404%	0.3442%	0.3542%	-6.2500%	-6.3704%	-4.3142%
Sep-15	-2.4700%	2.9000%	0.2100%	0.3392%	0.3508%	0.3450%	0.3542%	0.3658%	-2.6800%	-2.8150%	2.5458%
Oct-15	8.4400%	1.0800%	0.2100%	0.3292%	0.3425%	0.3358%	0.3442%	0.3575%	8.2300%	8.1042%	0.7358%

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp		Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Nov-15	0.3000%	-2.1300%	0.2200%	0.3383%	0.3508%	0.3446%	0.3517%	0.3667%	0.0800%	-0.0446%	-2.4817%	
Dec-15	-1.5800%	2.1600%	0.2200%	0.3308%	0.3467%	0.3388%	0.3467%	0.3625%	-1.8000%	-1.9188%	1.8133%	
Jan-16	-4.9600%	4.9223%	0.2100%	0.3333%	0.3433%	0.3383%	0.3408%	0.3558%	-5.1700%	-5.2983%	4.5815%	
Feb-16	-0.1300%	1.9408%	0.2000%	0.3300%	0.3317%	0.3308%	0.3283%	0.3425%	-0.3300%	-0.4608%	1.6125%	
Mar-16	6.7800%	8.1400%	0.1800%	0.3183%	0.3258%	0.3221%	0.3275%	0.3467%	6.6000%	6.4579%	7.8125%	
Apr-16	0.3900%	-2.4100%	0.1700%	0.3183%	0.3258%	0.3221%	0.3275%	0.3467%	0.2200%	0.0679%	-2.7375%	
May-16	1.8000%	1.5100%	0.2000%	0.3042%	0.3083%	0.3063%	0.3042%	0.3275%	1.6000%	1.4938%	1.2058%	
Jun-16	0.2600%	7.7900%	0.1800%	0.2917%	0.3000%	0.2958%	0.2967%	0.3150%	0.0800%	-0.0358%	7.4933%	
Jul-16	3.6900%	-0.8000%	0.1400%	0.2733%	0.2825%	0.2779%	0.2800%	0.2975%	3.5500%	3.4121%	-1.0800%	
Aug-16	0.1400%	-5.5100%	0.1600%	0.2767%	0.2850%	0.2808%	0.2825%	0.2992%	-0.0200%	-0.1408%	-5.7925%	
Sep-16	0.0200%	0.4000%	0.1500%	0.2842%	0.2917%	0.2879%	0.2892%	0.3050%	-0.1300%	-0.2679%	0.1108%	
Oct-16	-1.8200%	0.8600%	0.1600%	0.2842%	0.2917%	0.2879%	0.2892%	0.3050%	-1.9800%	-2.1079%	0.5708%	
Nov-16	3.7000%	-5.3900%	0.1800%	0.3217%	0.3275%	0.3246%	0.3258%	0.3400%	3.5200%	3.3754%	-5.7158%	
Dec-16	1.9800%	4.9400%	0.2200%	0.3383%	0.3433%	0.3408%	0.3425%	0.3558%	1.7600%	1.6392%	4.5975%	
Jan-17	1.9000%	1.2600%	0.2400%	0.3267%	0.3317%	0.3292%	0.3300%	0.3450%	1.6600%	1.5708%	0.9300%	
Feb-17	3.9700%	5.2600%	0.2100%	0.3292%	0.3342%	0.3317%	0.3325%	0.3425%	3.7600%	3.6383%	4.9275%	
Mar-17	0.1200%	2.9800%	0.2300%	0.3292%	0.3342%	0.3317%	0.3325%	0.3483%	-0.1100%	-0.2117%	2.6475%	
Apr-17	1.0300%	0.7800%	0.2100%	0.3225%	0.3275%	0.3250%	0.3275%	0.3433%	0.8200%	0.7050%	0.4525%	
May-17	1.4100%	4.2200%	0.2400%	0.3208%	0.3275%	0.3242%	0.3275%	0.3442%	1.1700%	1.0858%	3.8925%	
Jun-17	0.6200%	-2.7000%	0.2100%	0.3067%	0.3142%	0.3104%	0.3142%	0.3283%	0.4100%	0.3096%	-3.0142%	
Jul-17	2.0600%	2.4400%	0.2200%	0.3150%	0.3225%	0.3188%	0.3233%	0.3375%	1.8400%	1.7413%	2.1167%	
Aug-17	0.3100%	3.2400%	0.2200%	0.3083%	0.3167%	0.3125%	0.3183%	0.3325%	0.0900%	-0.0025%	2.9217%	
Sep-17	2.0600%	-2.7300%	0.1900%	0.3025%	0.3100%	0.3063%	0.3058%	0.3217%	1.8700%	1.7538%	-3.0358%	
Oct-17	2.3300%	3.9000%	0.2200%	0.3000%	0.3117%	0.3058%	0.3117%	0.3258%	2.1100%	2.0242%	3.5883%	
Nov-17	3.0700%	2.7500%	0.2100%	0.3000%	0.3117%	0.3058%	0.3117%	0.3258%	2.8600%	2.7642%	2.4383%	
Dec-17	1.1100%	-6.1300%	0.2000%	0.2925%	0.3008%	0.2967%	0.3017%	0.3158%	0.9100%	0.8133%	-6.4317%	
Jan-18	5.7300%	-3.0700%	0.2400%	0.2925%	0.3008%	0.2967%	0.3017%	0.3158%	5.4900%	5.4333%	-3.3717%	
Feb-18	-3.6900%	-3.8400%	0.2200%	0.2958%	0.3067%	0.3013%	0.3075%	0.3217%	-3.9100%	-3.9913%	-4.1475%	
Mar-18	-2.5400%	3.7700%	0.2400%	0.3225%	0.3325%	0.3275%	0.3300%	0.3442%	-2.7800%	-2.8675%	3.4400%	
Apr-18	0.3800%	2.1000%	0.2500%	0.3208%	0.3342%	0.3275%	0.3325%	0.3475%	0.1300%	0.0525%	1.7675%	
May-18	2.4100%	-1.1400%	0.2500%	0.3325%	0.3433%	0.3379%	0.3425%	0.3567%	2.1600%	2.0721%	-1.4825%	
Jun-18	0.6200%	2.7300%	0.2300%	0.3300%	0.3425%	0.3363%	0.3425%	0.3558%	0.3900%	0.2838%	2.3875%	
Jul-18	3.7200%	1.8600%	0.2500%	0.3225%	0.3392%	0.3308%	0.3417%	0.3558%	3.4700%	3.3892%	1.5183%	
Aug-18	3.2600%	1.1300%	0.2500%	0.3233%	0.3375%	0.3304%	0.3400%	0.3550%	3.0100%	2.9296%	0.7900%	
Sep-18	0.5700%	-0.6000%	0.2200%	0.3233%	0.3375%	0.3304%	0.3400%	0.3550%	0.3500%	0.2396%	-0.9400%	
Oct-18	-6.8400%	1.9500%	0.3000%	0.3450%	0.0000%	0.1725%	0.3483%	0.3708%	-7.1400%	-7.0125%	1.6017%	
Nov-18	2.0400%	3.5500%	0.2800%	0.3517%	0.3642%	0.3579%	0.3667%	0.3767%	1.7600%	1.6821%	3.1833%	
Dec-18	-9.0300%	-4.0100%	0.2700%	0.3350%	0.3500%	0.3425%	0.3533%	0.3642%	-9.3000%	-9.3725%	-4.3633%	
Jan-19	8.0100%	4.8400%	0.2500%	0.3275%	0.3450%	0.3363%	0.3483%	0.3625%	7.7600%	7.6738%	4.4917%	
Feb-19	3.2100%	4.1100%	0.2200%	0.3158%	0.3325%	0.3242%	0.3375%	0.3542%	2.9900%	2.8858%	3.7725%	
Mar-19	1.9400%	2.8800%	0.2300%	0.3158%	0.3325%	0.3242%	0.3375%	0.3542%	1.7100%	1.6158%	2.5425%	
Apr-19	4.0500%	0.9300%	0.2300%	0.3075%	0.3208%	0.3142%	0.3317%	0.3400%	3.8200%	3.7358%	0.5983%	
May-19	-6.3500%	-0.7800%	0.2300%	0.3058%	0.3167%	0.3113%	0.0000%	0.3317%	-6.5800%	-6.6613%	-0.7800%	
Jun-19	7.0500%	3.2200%	0.1800%	0.3058%	0.3167%	0.3113%	0.3200%	0.3317%	6.8700%	6.7388%	2.9000%	
Jul-19	1.4400%	-0.2700%	0.2100%	0.2742%	0.2883%	0.2813%	0.2942%	0.3075%	1.2300%	1.1588%	-0.5642%	

	Market Return	S&P Return	Ibbot LT RF	Aaa Corp	Aa Corp	Avg Aaa and Aa Corp	Aa PU	A PU	RPMKT	RPAAAAA	RPSPAA
Aug-19	-1.5800%	5.1300%	0.1900%	0.2742%	0.2883%	0.2813%	0.2942%	0.3075%	-1.7700%	-1.8613%	4.8358%
Sep-19	1.8700%	4.2500%	0.1500%	0.2483%	0.2567%	0.2525%	0.2642%	0.2742%	1.7200%	1.6175%	3.9858%
Oct-19	2.1700%	-0.7700%	0.1600%	0.2525%	0.2608%	0.2567%	0.2700%	0.2808%	2.0100%	1.9133%	-1.0400%
Nov-19	3.6300%	-1.8600%	0.1600%	0.2558%	0.2642%	0.2600%	0.2717%	0.2858%	3.4700%	3.3700%	-2.1317%
Dec-19	3.0200%	3.4300%	0.1800%	0.2508%	0.2592%	0.2550%	0.2683%	0.2833%	2.8400%	2.7650%	3.1617%
Jan-20	-0.0400%	6.6500%	0.2000%	0.2350%	0.2392%	0.2371%	0.2458%	0.2608%	-0.2400%	-0.2771%	6.4042%
Feb-20	-8.2300%	-9.8500%	0.1500%	0.2450%	0.2517%	0.2483%	0.2600%	0.2742%	-8.3800%	-8.4783%	-10.1100%
Mar-20	-12.3500%	-9.9900%	0.1230%	0.2317%	0.2375%	0.2346%	0.2467%	0.2592%	-12.4730%	-12.5846%	-10.2367%
Apr-20	12.8200%	3.2300%	0.0900%	0.2025%	0.2292%	0.2158%	0.2442%	0.2658%	12.7300%	12.6042%	2.9858%
May-20	4.7600%	4.3500%	0.0900%	0.2075%	0.2267%	0.2171%	0.2442%	0.2617%	4.6700%	4.5429%	4.1058%
Jun-20	1.9900%	-4.6500%	0.0900%	0.2008%	0.2192%	0.2100%	0.2333%	0.2558%	1.9000%	1.7800%	-4.8833%
Jul-20	5.6400%	7.8200%	0.1000%	0.1692%	0.1817%	0.1754%	0.1917%	0.2133%	5.5400%	5.4646%	7.6283%
Aug-20	7.1900%	-2.6500%	0.0800%	0.1875%	0.1975%	0.1925%	0.2075%	0.2275%	7.1100%	6.9975%	-2.8575%
Sep-20	-3.8000%	1.1209%	0.0000%	0.1925%	0.2058%	0.1992%	0.2183%	0.2367%	-3.8000%	-3.9992%	0.9025%
Oct-20	-2.6600%	5.0400%	0.0900%	0.1958%	0.2125%	0.2042%	0.2267%	0.2458%	-2.7500%	-2.8642%	4.8133%
Nov-20	10.9500%	0.7352%	0.1100%	0.1917%	0.2058%	0.1988%	0.2192%	0.2375%	10.8400%	10.7513%	0.5161%
Dec-20	3.8400%	0.7033%	0.1100%	0.1883%	0.2033%	0.1958%	0.2142%	0.2308%	3.7300%	3.6442%	0.4891%
Jan-21	0.9262%	-0.9149%	0.1517%	0.2042%	0.2175%	0.2108%	0.2275%	0.2425%	0.7746%	0.7154%	-1.1424%
Feb-21	3.2359%	-6.0950%	0.1700%	0.2250%	0.2358%	0.2304%	0.2442%	0.2575%	3.0659%	3.0055%	-6.3391%
Mar-21	3.9946%	10.4988%	0.1950%	0.2533%	0.2642%	0.2588%	0.2725%	0.2867%	3.7996%	3.7359%	10.2263%

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jan-26	Market Return			-		0.0031	-0.0031
Feb-26	Market Return			(0.0385)		0.0028	-0.0413
Mar-26	Market Return			(0.0575)		0.0032	-0.0607
Apr-26	Market Return			0.0253		0.0030	0.0223
May-26	Market Return			0.0179		0.0028	0.0151
Jun-26	Market Return			0.0457		0.0033	0.0424
Jul-26	Market Return			0.0479		0.0031	0.0448
Aug-26	Market Return			0.0248		0.0031	0.0217
Sep-26	Market Return			0.0252		0.0030	0.0222
Oct-26	Market Return			(0.0284)		0.0030	-0.0314
Nov-26	Market Return			0.0347		0.0031	0.0316
Dec-26	Market Return			0.0196		0.0030	0.0166
Jan-27	Market Return			(0.0193)		0.0030	-0.0223
Feb-27	Market Return			0.0537		0.0027	0.0510
Mar-27	Market Return			0.0087		0.0029	0.0058
Apr-27	Market Return			0.0201		0.0027	0.0174
May-27	Market Return			0.0607		0.0028	0.0579
Jun-27	Market Return			(0.0067)		0.0027	-0.0094
Jul-27	Market Return			0.0670		0.0027	0.0643
Aug-27	Market Return			0.0515		0.0029	0.0486
Sep-27	Market Return			0.0450		0.0027	0.0423
Oct-27	Market Return			(0.0502)		0.0028	-0.0530
Nov-27	Market Return			0.0721		0.0027	0.0694
Dec-27	Market Return			0.0279		0.0027	0.0252
Jan-28	Market Return			(0.0040)		0.0027	-0.0067
Feb-28	Market Return			(0.0125)		0.0025	-0.0150
Mar-28	Market Return			0.1101		0.0027	0.1074
Apr-28	Market Return			0.0345		0.0026	0.0319
May-28	Market Return			0.0197		0.0027	0.0170
Jun-28	Market Return			(0.0385)		0.0027	-0.0412
Jul-28	Market Return			0.0141		0.0027	0.0114
Aug-28	Market Return			0.0803		0.0029	0.0774
Sep-28	Market Return			0.0259		0.0027	0.0232

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Oct-28	Market Return			0.0168		0.0030	0.0138
Nov-28	Market Return			0.1292		0.0027	0.1265
Dec-28	Market Return			0.0049		0.0029	0.0020
Jan-29	Market Return			0.0583		0.0029	0.0554
Feb-29	Market Return			(0.0019)		0.0027	-0.0046
Mar-29	Market Return			(0.0012)		0.0028	-0.0040
Apr-29	Market Return			0.0176		0.0034	0.0142
May-29	Market Return			(0.0362)		0.0030	-0.0392
Jun-29	Market Return			0.1140		0.0029	0.1111
Jul-29	Market Return			0.0471		0.0032	0.0439
Aug-29	Market Return			0.1028		0.0030	0.0998
Sep-29	Market Return			(0.0476)		0.0032	-0.0508
Oct-29	Market Return			(0.1973)		0.0031	-0.2004
Nov-29	Market Return			(0.1246)		0.0026	-0.1272
Dec-29	Market Return			0.0282		0.0031	0.0251
Jan-30	Market Return			0.0639		0.0029	0.0610
Feb-30	Market Return			0.0259		0.0026	0.0233
Mar-30	Market Return			0.0812		0.0029	0.0783
Apr-30	Market Return			(0.0080)		0.0027	-0.0107
May-30	Market Return			(0.0096)		0.0027	-0.0123
Jun-30	Market Return			(0.1625)		0.0029	-0.1654
Jul-30	Market Return			0.0386		0.0028	0.0358

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Aug-30	Market Return			0.0141		0.0026	0.0115
Sep-30	Market Return			(0.1282)		0.0029	-0.1311
Oct-30	Market Return			(0.0855)		0.0027	-0.0882
Nov-30	Market Return			(0.0089)		0.0026	-0.0115
Dec-30	Market Return			(0.0706)		0.0028	-0.0734
Jan-31	Market Return			0.0502		0.0028	0.0474
Feb-31	Market Return			0.1193		0.0026	0.1167
Mar-31	Market Return			(0.0675)		0.0029	-0.0704
Apr-31	Market Return			(0.0935)		0.0027	-0.0962
May-31	Market Return			(0.1279)		0.0026	-0.1305
Jun-31	Market Return			0.1421		0.0028	0.1393
Jul-31	Market Return			(0.0722)		0.0027	-0.0749
Aug-31	Market Return			0.0182		0.0027	0.0155
Sep-31	Market Return			(0.2973)		0.0027	-0.3000
Oct-31	Market Return			0.0896		0.0029	0.0867
Nov-31	Market Return			(0.0798)		0.0031	-0.0829
Dec-31	Market Return			(0.1400)		0.0032	-0.1432
Jan-32	Market Return			(0.0271)		0.0032	-0.0303
Feb-32	Market Return			0.0570		0.0032	0.0538
Mar-32	Market Return			(0.1158)		0.0031	-0.1189
Apr-32	Market Return			(0.1997)		0.0030	-0.2027
May-32	Market Return			(0.2196)		0.0028	-0.2224
Jun-32	Market Return			(0.0022)		0.0028	-0.0050
Jul-32	Market Return			0.3815		0.0028	0.3787
Aug-32	Market Return			0.3869		0.0028	0.3841
Sep-32	Market Return			(0.0346)		0.0026	-0.0372
Oct-32	Market Return			(0.1349)		0.0027	-0.1376
Nov-32	Market Return			(0.0417)		0.0026	-0.0443
Dec-32	Market Return			0.0565		0.0027	0.0538
Jan-33	Market Return			0.0087		0.0027	0.0060
Feb-33	Market Return			(0.1772)		0.0023	-0.1795
Mar-33	Market Return			0.0353		0.0027	0.0326
Apr-33	Market Return			0.4256		0.0025	0.4231

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
May-33	Market Return			0.1683		0.0028	0.1655
Jun-33	Market Return			0.1338		0.0025	0.1313
Jul-33	Market Return			(0.0862)		0.0026	-0.0888
Aug-33	Market Return			0.1206		0.0026	0.1180
Sep-33	Market Return			(0.1118)		0.0025	-0.1143
Oct-33	Market Return			(0.0855)		0.0026	-0.0881
Nov-33	Market Return			0.1127		0.0025	0.1102
Dec-33	Market Return			0.0253		0.0028	0.0225
Jan-34	Market Return			0.1069		0.0029	0.1040
Feb-34	Market Return			(0.0322)		0.0024	-0.0346
Mar-34	Market Return			-		0.0027	-0.0027
Apr-34	Market Return			(0.0251)		0.0025	-0.0276
May-34	Market Return			(0.0736)		0.0025	-0.0761
Jun-34	Market Return			0.0229		0.0024	0.0205
Jul-34	Market Return			(0.1132)		0.0024	-0.1156
Aug-34	Market Return			0.0611		0.0024	0.0587
Sep-34	Market Return			(0.0033)		0.0023	-0.0056
Oct-34	Market Return			(0.0286)		0.0027	-0.0313
Nov-34	Market Return			0.0942		0.0025	0.0917
Dec-34	Market Return			(0.0010)		0.0025	-0.0035
Jan-35	Market Return			(0.0411)		0.0025	-0.0436
Feb-35	Market Return			(0.0341)		0.0021	-0.0362
Mar-35	Market Return			(0.0286)		0.0022	-0.0308

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Apr-35	Market Return			0.0980		0.0023	0.0957
May-35	Market Return			0.0409		0.0023	0.0386
Jun-35	Market Return			0.0699		0.0022	0.0677
Jul-35	Market Return			0.0850		0.0024	0.0826
Aug-35	Market Return			0.0280		0.0023	0.0257
Sep-35	Market Return			0.0256		0.0023	0.0233
Oct-35	Market Return			0.0777		0.0023	0.0754
Nov-35	Market Return			0.0474		0.0024	0.0450
Dec-35	Market Return			0.0394		0.0024	0.0370
Jan-36	Market Return			0.0670		0.0024	0.0646
Feb-36	Market Return			0.0224		0.0023	0.0201
Mar-36	Market Return			0.0268		0.0024	0.0244
Apr-36	Market Return			(0.0751)		0.0022	-0.0773
May-36	Market Return			0.0545		0.0022	0.0523
Jun-36	Market Return			0.0333		0.0024	0.0309
Jul-36	Market Return			0.0701		0.0023	0.0678
Aug-36	Market Return			0.0151		0.0023	0.0128
Sep-36	Market Return			0.0031		0.0021	0.0010
Oct-36	Market Return			0.0775		0.0023	0.0752
Nov-36	Market Return			0.0134		0.0022	0.0112
Dec-36	Market Return			(0.0029)		0.0022	-0.0051
Jan-37	Market Return			0.0390		0.0021	0.0369
Feb-37	Market Return			0.0191		0.0020	0.0171
Mar-37	Market Return			(0.0077)		0.0022	-0.0099
Apr-37	Market Return			(0.0809)		0.0023	-0.0832
May-37	Market Return			(0.0024)		0.0022	-0.0046
Jun-37	Market Return			(0.0504)		0.0025	-0.0529
Jul-37	Market Return			0.1045		0.0024	0.1021
Aug-37	Market Return			(0.0483)		0.0023	-0.0506
Sep-37	Market Return			(0.1403)		0.0023	-0.1426
Oct-37	Market Return			(0.0981)		0.0023	-0.1004
Nov-37	Market Return			(0.0866)		0.0024	-0.0890
Dec-37	Market Return			(0.0459)		0.0023	-0.0482

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jan-38	Market Return			0.0152		0.0023	0.0129
Feb-38	Market Return			0.0674		0.0021	0.0653
Mar-38	Market Return			(0.2487)		0.0023	-0.2510
Apr-38	Market Return			0.1447		0.0022	0.1425
May-38	Market Return			(0.0330)		0.0022	-0.0352
Jun-38	Market Return			0.2503		0.0021	0.2482
Jul-38	Market Return			0.0744		0.0021	0.0723
Aug-38	Market Return			(0.0226)		0.0022	-0.0248
Sep-38	Market Return			0.0166		0.0021	0.0145
Oct-38	Market Return			0.0776		0.0022	0.0754
Nov-38	Market Return			(0.0273)		0.0021	-0.0294
Dec-38	Market Return			0.0401		0.0022	0.0379
Jan-39	Market Return			(0.0674)		0.0021	-0.0695
Feb-39	Market Return			0.0390		0.0019	0.0371
Mar-39	Market Return			(0.1339)		0.0021	-0.1360
Apr-39	Market Return			(0.0027)		0.0019	-0.0046
May-39	Market Return			0.0733		0.0020	0.0713
Jun-39	Market Return			(0.0612)		0.0018	-0.0630
Jul-39	Market Return			0.1105		0.0019	0.1086
Aug-39	Market Return			(0.0648)		0.0018	-0.0666
Sep-39	Market Return			0.1673		0.0019	0.1654
Oct-39	Market Return			(0.0123)		0.0023	-0.0146
Nov-39	Market Return			(0.0398)		0.0020	-0.0418
Dec-39	Market Return			0.0270		0.0019	0.0251
Jan-40	Market Return			(0.0336)		0.0020	-0.0356
Feb-40	Market Return			0.0133		0.0018	0.0115
Mar-40	Market Return			0.0124		0.0019	0.0105
Apr-40	Market Return			(0.0024)		0.0018	-0.0042
May-40	Market Return			(0.2289)		0.0019	-0.2308
Jun-40	Market Return			0.0809		0.0019	0.0790
Jul-40	Market Return			0.0341		0.0020	0.0321
Aug-40	Market Return			0.0350		0.0019	0.0331
Sep-40	Market Return			0.0123		0.0018	0.0105

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Oct-40	Market Return			0.0422		0.0018	0.0404
Nov-40	Market Return			(0.0316)		0.0018	-0.0334
Dec-40	Market Return			0.0009		0.0017	-0.0008
Jan-41	Market Return			(0.0463)		0.0016	-0.0479
Feb-41	Market Return			(0.0060)		0.0016	-0.0076
Mar-41	Market Return			0.0071		0.0018	0.0053
Apr-41	Market Return			(0.0612)		0.0017	-0.0629
May-41	Market Return			0.0183		0.0017	0.0166
Jun-41	Market Return			0.0578		0.0016	0.0562
Jul-41	Market Return			0.0579		0.0016	0.0563
Aug-41	Market Return			0.0010		0.0016	-0.0006
Sep-41	Market Return			(0.0068)		0.0016	-0.0084
Oct-41	Market Return			(0.0657)		0.0016	-0.0673
Nov-41	Market Return			(0.0284)		0.0014	-0.0298
Dec-41	Market Return			(0.0407)		0.0016	-0.0423
Jan-42	Market Return			0.0161		0.0021	0.0140
Feb-42	Market Return			(0.0159)		0.0019	-0.0178
Mar-42	Market Return			(0.0652)		0.0021	-0.0673
Apr-42	Market Return			(0.0399)		0.0020	-0.0419
May-42	Market Return			0.0796		0.0019	0.0777
Jun-42	Market Return			0.0221		0.0021	0.0200
Jul-42	Market Return			0.0337		0.0021	0.0316
Aug-42	Market Return			0.0164		0.0021	0.0143
Sep-42	Market Return			0.0290		0.0020	0.0270
Oct-42	Market Return			0.0678		0.0021	0.0657
Nov-42	Market Return			(0.0021)		0.0020	-0.0041
Dec-42	Market Return			0.0549		0.0021	0.0528
Jan-43	Market Return			0.0737		0.0020	0.0717
Feb-43	Market Return			0.0583		0.0019	0.0564
Mar-43	Market Return			0.0545		0.0021	0.0524
Apr-43	Market Return			0.0035		0.0020	0.0015
May-43	Market Return			0.0552		0.0019	0.0533
Jun-43	Market Return			0.0223		0.0021	0.0202

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jul-43	Market Return			(0.0526)		0.0021	-0.0547
Aug-43	Market Return			0.0171		0.0021	0.0150
Sep-43	Market Return			0.0263		0.0020	0.0243
Oct-43	Market Return			(0.0108)		0.0020	-0.0128
Nov-43	Market Return			(0.0654)		0.0021	-0.0675
Dec-43	Market Return			0.0617		0.0021	0.0596
Jan-44	Market Return			0.0171		0.0021	0.0150
Feb-44	Market Return			0.0042		0.0020	0.0022
Mar-44	Market Return			0.0195		0.0021	0.0174
Apr-44	Market Return			(0.0100)		0.0020	-0.0120
May-44	Market Return			0.0505		0.0022	0.0483
Jun-44	Market Return			0.0543		0.0020	0.0523
Jul-44	Market Return			(0.0193)		0.0021	-0.0214
Aug-44	Market Return			0.0157		0.0021	0.0136
Sep-44	Market Return			(0.0008)		0.0020	-0.0028
Oct-44	Market Return			0.0023		0.0021	0.0002
Nov-44	Market Return			0.0133		0.0020	0.0113
Dec-44	Market Return			0.0374		0.0020	0.0354
Jan-45	Market Return			0.0158		0.0021	0.0137
Feb-45	Market Return			0.0683		0.0018	0.0665
Mar-45	Market Return			(0.0441)		0.0020	-0.0461
Apr-45	Market Return			0.0902		0.0019	0.0883
May-45	Market Return			0.0195		0.0019	0.0176
Jun-45	Market Return			(0.0007)		0.0019	-0.0026
Jul-45	Market Return			(0.0180)		0.0018	-0.0198
Aug-45	Market Return			0.0641		0.0019	0.0622
Sep-45	Market Return			0.0438		0.0018	0.0420
Oct-45	Market Return			0.0322		0.0019	0.0303
Nov-45	Market Return			0.0396		0.0018	0.0378
Dec-45	Market Return			0.0116		0.0018	0.0098
Jan-46	Market Return			0.0714		0.0017	0.0697
Feb-46	Market Return			(0.0641)		0.0015	-0.0656
Mar-46	Market Return			0.0480		0.0016	0.0464

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Apr-46	Market Return			0.0393		0.0017	0.0376
May-46	Market Return			0.0288		0.0018	0.0270
Jun-46	Market Return			(0.0370)		0.0016	-0.0386
Jul-46	Market Return			(0.0239)		0.0019	-0.0258
Aug-46	Market Return			(0.0674)		0.0017	-0.0691
Sep-46	Market Return			(0.0997)		0.0018	-0.1015
Oct-46	Market Return			(0.0060)		0.0019	-0.0079
Nov-46	Market Return			(0.0027)		0.0018	-0.0045
Dec-46	Market Return			0.0457		0.0019	0.0438
Jan-47	Market Return			0.0255		0.0018	0.0237
Feb-47	Market Return			(0.0077)		0.0016	-0.0093
Mar-47	Market Return			(0.0149)		0.0018	-0.0167
Apr-47	Market Return			(0.0363)		0.0017	-0.0380
May-47	Market Return			0.0014		0.0017	-0.0003
Jun-47	Market Return			0.0554		0.0019	0.0535
Jul-47	Market Return			0.0381		0.0018	0.0363
Aug-47	Market Return			(0.0203)		0.0017	-0.0220
Sep-47	Market Return			(0.0111)		0.0018	-0.0129
Oct-47	Market Return			0.0238		0.0018	0.0220
Nov-47	Market Return			(0.0175)		0.0017	-0.0192
Dec-47	Market Return			0.0233		0.0021	0.0212
Jan-48	Market Return			(0.0379)		0.0020	-0.0399
Feb-48	Market Return			(0.0388)		0.0019	-0.0407
Mar-48	Market Return			0.0793		0.0022	0.0771
Apr-48	Market Return			0.0292		0.0020	0.0272
May-48	Market Return			0.0879		0.0018	0.0861
Jun-48	Market Return			0.0054		0.0021	0.0033
Jul-48	Market Return			(0.0508)		0.0019	-0.0527
Aug-48	Market Return			0.0158		0.0021	0.0137
Sep-48	Market Return			(0.0276)		0.0020	-0.0296
Oct-48	Market Return			0.0710		0.0019	0.0691
Nov-48	Market Return			(0.0961)		0.0021	-0.0982
Dec-48	Market Return			0.0346		0.0020	0.0326

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jan-49	Market Return			0.0039		0.0020	0.0019
Feb-49	Market Return			(0.0296)		0.0018	-0.0314
Mar-49	Market Return			0.0328		0.0019	0.0309
Apr-49	Market Return			(0.0179)		0.0018	-0.0197
May-49	Market Return			(0.0258)		0.0020	-0.0278
Jun-49	Market Return			0.0014		0.0019	-0.0005
Jul-49	Market Return			0.0650		0.0017	0.0633
Aug-49	Market Return			0.0219		0.0019	0.0200
Sep-49	Market Return			0.0263		0.0017	0.0246
Oct-49	Market Return			0.0340		0.0018	0.0322
Nov-49	Market Return			0.0175		0.0017	0.0158
Dec-49	Market Return			0.0486		0.0017	0.0469
Jan-50	Market Return			0.0197		0.0018	0.0179
Feb-50	Market Return			0.0199		0.0016	0.0183
Mar-50	Market Return			0.0070		0.0018	0.0052
Apr-50	Market Return			0.0486		0.0016	0.0470
May-50	Market Return			0.0509		0.0019	0.0490
Jun-50	Market Return			(0.0548)		0.0017	-0.0565
Jul-50	Market Return			0.0119		0.0018	0.0101
Aug-50	Market Return			0.0443		0.0018	0.0425
Sep-50	Market Return			0.0592		0.0017	0.0575
Oct-50	Market Return			0.0093		0.0019	0.0074
Nov-50	Market Return			0.0169		0.0018	0.0151
Dec-50	Market Return			0.0513		0.0018	0.0495
Jan-51	Market Return			0.0637		0.0020	0.0617
Feb-51	Market Return			0.0157		0.0017	0.0140
Mar-51	Market Return			(0.0156)		0.0019	-0.0175
Apr-51	Market Return			0.0509		0.0020	0.0489
May-51	Market Return			(0.0299)		0.0021	-0.0320
Jun-51	Market Return			(0.0228)		0.0020	-0.0248
Jul-51	Market Return			0.0711		0.0023	0.0688
Aug-51	Market Return			0.0478		0.0021	0.0457
Sep-51	Market Return			0.0013		0.0019	-0.0006

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Oct-51	Market Return			(0.0103)		0.0023	-0.0126
Nov-51	Market Return			0.0096		0.0021	0.0075
Dec-51	Market Return			0.0424		0.0022	0.0402
Jan-52	Market Return			0.0181		0.0023	0.0158
Feb-52	Market Return			(0.0282)		0.0021	-0.0303
Mar-52	Market Return			0.0503		0.0023	0.0480
Apr-52	Market Return			(0.0402)		0.0022	-0.0424
May-52	Market Return			0.0343		0.0020	0.0323
Jun-52	Market Return			0.0490		0.0022	0.0468
Jul-52	Market Return			0.0196		0.0022	0.0174
Aug-52	Market Return			(0.0071)		0.0021	-0.0092
Sep-52	Market Return			(0.0176)		0.0023	-0.0199
Oct-52	Market Return			0.0020		0.0023	-0.0003
Nov-52	Market Return			0.0571		0.0021	0.0550
Dec-52	Market Return			0.0382		0.0024	0.0358
Jan-53	Market Return			(0.0049)		0.0023	-0.0072
Feb-53	Market Return			(0.0106)		0.0021	-0.0127
Mar-53	Market Return			(0.0212)		0.0025	-0.0237
Apr-53	Market Return			(0.0237)		0.0024	-0.0261
May-53	Market Return			0.0077		0.0024	0.0053
Jun-53	Market Return			(0.0134)		0.0027	-0.0161
Jul-53	Market Return			0.0273		0.0025	0.0248
Aug-53	Market Return			(0.0501)		0.0025	-0.0526
Sep-53	Market Return			0.0034		0.0025	0.0009
Oct-53	Market Return			0.0540		0.0023	0.0517
Nov-53	Market Return			0.0204		0.0024	0.0180
Dec-53	Market Return			0.0052		0.0024	0.0028
Jan-54	Market Return			0.0536		0.0023	0.0513
Feb-54	Market Return			0.0111		0.0022	0.0089
Mar-54	Market Return			0.0325		0.0025	0.0300
Apr-54	Market Return			0.0516		0.0022	0.0494
May-54	Market Return			0.0418		0.0020	0.0398
Jun-54	Market Return			0.0031		0.0025	0.0006

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jul-54	Market Return			0.0589		0.0022	0.0567
Aug-54	Market Return			(0.0275)		0.0023	-0.0298
Sep-54	Market Return			0.0851		0.0022	0.0829
Oct-54	Market Return			(0.0167)		0.0021	-0.0188
Nov-54	Market Return			0.0909		0.0023	0.0886
Dec-54	Market Return			0.0534		0.0023	0.0511
Jan-55	Market Return			0.0197		0.0022	0.0175
Feb-55	Market Return			0.0098		0.0022	0.0076
Mar-55	Market Return			(0.0030)		0.0024	-0.0054
Apr-55	Market Return			0.0396		0.0022	0.0374
May-55	Market Return			0.0055		0.0025	0.0030
Jun-55	Market Return			0.0841		0.0023	0.0818
Jul-55	Market Return			0.0622		0.0023	0.0599
Aug-55	Market Return			(0.0025)		0.0027	-0.0052
Sep-55	Market Return			0.0130		0.0024	0.0106
Oct-55	Market Return			(0.0284)		0.0025	-0.0309
Nov-55	Market Return			0.0827		0.0024	0.0803
Dec-55	Market Return			0.0015		0.0024	-0.0009
Jan-56	Market Return			(0.0347)		0.0025	-0.0372
Feb-56	Market Return			0.0413		0.0023	0.0390
Mar-56	Market Return			0.0710		0.0023	0.0687
Apr-56	Market Return			(0.0004)		0.0026	-0.0030
May-56	Market Return			(0.0593)		0.0026	-0.0619
Jun-56	Market Return			0.0409		0.0023	0.0386
Jul-56	Market Return			0.0530		0.0026	0.0504
Aug-56	Market Return			(0.0328)		0.0026	-0.0354
Sep-56	Market Return			(0.0440)		0.0025	-0.0465
Oct-56	Market Return			0.0066		0.0029	0.0037
Nov-56	Market Return			(0.0050)		0.0027	-0.0077
Dec-56	Market Return			0.0370		0.0028	0.0342
Jan-57	Market Return			(0.0401)		0.0029	-0.0430
Feb-57	Market Return			(0.0264)		0.0025	-0.0289
Mar-57	Market Return			0.0215		0.0026	0.0189

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Apr-57	Market Return			0.0388		0.0029	0.0359
May-57	Market Return			0.0437		0.0029	0.0408
Jun-57	Market Return			0.0004		0.0025	-0.0021
Jul-57	Market Return			0.0131		0.0033	0.0098
Aug-57	Market Return			(0.0505)		0.0030	-0.0535
Sep-57	Market Return			(0.0602)		0.0031	-0.0633
Oct-57	Market Return			(0.0302)		0.0031	-0.0333
Nov-57	Market Return			0.0231		0.0029	0.0202
Dec-57	Market Return			(0.0395)		0.0029	-0.0424
Jan-58	Market Return			0.0445		0.0027	0.0418
Feb-58	Market Return			(0.0141)		0.0025	-0.0166
Mar-58	Market Return			0.0328		0.0027	0.0301
Apr-58	Market Return			0.0337		0.0026	0.0311
May-58	Market Return			0.0212		0.0024	0.0188
Jun-58	Market Return			0.0279		0.0027	0.0252
Jul-58	Market Return			0.0449		0.0027	0.0422
Aug-58	Market Return			0.0176		0.0027	0.0149
Sep-58	Market Return			0.0501		0.0032	0.0469
Oct-58	Market Return			0.0270		0.0032	0.0238
Nov-58	Market Return			0.0284		0.0028	0.0256
Dec-58	Market Return			0.0535		0.0033	0.0502
Jan-59	Market Return			0.0053		0.0031	0.0022
Feb-59	Market Return			0.0049		0.0031	0.0018
Mar-59	Market Return			0.0020		0.0035	-0.0015
Apr-59	Market Return			0.0402		0.0033	0.0369
May-59	Market Return			0.0240		0.0033	0.0207
Jun-59	Market Return			(0.0022)		0.0036	-0.0058
Jul-59	Market Return			0.0363		0.0035	0.0328
Aug-59	Market Return			(0.0102)		0.0035	-0.0137
Sep-59	Market Return			(0.0443)		0.0034	-0.0477
Oct-59	Market Return			0.0128		0.0035	0.0093
Nov-59	Market Return			0.0186		0.0035	0.0151
Dec-59	Market Return			0.0292		0.0036	0.0256

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jan-60	Market Return			(0.0700)		0.0035	-0.0735
Feb-60	Market Return			0.0147		0.0037	0.0110
Mar-60	Market Return			(0.0123)		0.0036	-0.0159
Apr-60	Market Return			(0.0161)		0.0032	-0.0193
May-60	Market Return			0.0326		0.0037	0.0289
Jun-60	Market Return			0.0211		0.0034	0.0177
Jul-60	Market Return			(0.0234)		0.0032	-0.0266
Aug-60	Market Return			0.0317		0.0034	0.0283
Sep-60	Market Return			(0.0590)		0.0032	-0.0622
Oct-60	Market Return			(0.0007)		0.0033	-0.0040
Nov-60	Market Return			0.0465		0.0032	0.0433
Dec-60	Market Return			0.0479		0.0033	0.0446
Jan-61	Market Return			0.0645		0.0033	0.0612
Feb-61	Market Return			0.0319		0.0030	0.0289
Mar-61	Market Return			0.0270		0.0031	0.0239
Apr-61	Market Return			0.0051		0.0031	0.0020
May-61	Market Return			0.0239		0.0034	0.0205
Jun-61	Market Return			(0.0275)		0.0032	-0.0307
Jul-61	Market Return			0.0342		0.0033	0.0309
Aug-61	Market Return			0.0243		0.0033	0.0210
Sep-61	Market Return			(0.0184)		0.0032	-0.0216
Oct-61	Market Return			0.0298		0.0034	0.0264
Nov-61	Market Return			0.0447		0.0032	0.0415
Dec-61	Market Return			0.0046		0.0031	0.0015
Jan-62	Market Return			(0.0366)		0.0037	-0.0403
Feb-62	Market Return			0.0209		0.0032	0.0177
Mar-62	Market Return			(0.0046)		0.0033	-0.0079
Apr-62	Market Return			(0.0607)		0.0033	-0.0640
May-62	Market Return			(0.0811)		0.0032	-0.0843
Jun-62	Market Return			(0.0803)		0.0030	-0.0833
Jul-62	Market Return			0.0652		0.0034	0.0618
Aug-62	Market Return			0.0208		0.0034	0.0174
Sep-62	Market Return			(0.0465)		0.0030	-0.0495

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Oct-62	Market Return			0.0064		0.0035	0.0029
Nov-62	Market Return			0.1086		0.0031	0.1055
Dec-62	Market Return			0.0153		0.0032	0.0121
Jan-63	Market Return			0.0506		0.0032	0.0474
Feb-63	Market Return			(0.0239)		0.0029	-0.0268
Mar-63	Market Return			0.0370		0.0031	0.0339
Apr-63	Market Return			0.0500		0.0034	0.0466
May-63	Market Return			0.0193		0.0033	0.0160
Jun-63	Market Return			(0.0188)		0.0030	-0.0218
Jul-63	Market Return			(0.0022)		0.0036	-0.0058
Aug-63	Market Return			0.0535		0.0033	0.0502
Sep-63	Market Return			(0.0097)		0.0034	-0.0131
Oct-63	Market Return			0.0339		0.0034	0.0305
Nov-63	Market Return			(0.0046)		0.0032	-0.0078
Dec-63	Market Return			0.0262		0.0036	0.0226
Jan-64	Market Return			0.0283		0.0035	0.0248
Feb-64	Market Return			0.0147		0.0032	0.0115
Mar-64	Market Return			0.0165		0.0037	0.0128
Apr-64	Market Return			0.0075		0.0035	0.0040
May-64	Market Return			0.0162		0.0032	0.0130
Jun-64	Market Return			0.0178		0.0038	0.0140
Jul-64	Market Return			0.0195		0.0035	0.0160
Aug-64	Market Return			(0.0118)		0.0035	-0.0153
Sep-64	Market Return			0.0301		0.0034	0.0267
Oct-64	Market Return			0.0096		0.0034	0.0062
Nov-64	Market Return			0.0005		0.0035	-0.0030
Dec-64	Market Return			0.0056		0.0035	0.0021
Jan-65	Market Return			0.0345		0.0033	0.0312
Feb-65	Market Return			0.0031		0.0032	-0.0001
Mar-65	Market Return			(0.0133)		0.0038	-0.0171
Apr-65	Market Return			0.0356		0.0033	0.0323
May-65	Market Return			(0.0030)		0.0033	-0.0063
Jun-65	Market Return			(0.0473)		0.0038	-0.0511

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jul-65	Market Return			0.0147		0.0034	0.0113
Aug-65	Market Return			0.0272		0.0037	0.0235
Sep-65	Market Return			0.0334		0.0035	0.0299
Oct-65	Market Return			0.0289		0.0034	0.0255
Nov-65	Market Return			(0.0031)		0.0037	-0.0068
Dec-65	Market Return			0.0106		0.0037	0.0069
Jan-66	Market Return			0.0062		0.0038	0.0024
Feb-66	Market Return			(0.0131)		0.0034	-0.0165
Mar-66	Market Return			(0.0205)		0.0040	-0.0245
Apr-66	Market Return			0.0220		0.0036	0.0184
May-66	Market Return			(0.0492)		0.0041	-0.0533
Jun-66	Market Return			(0.0146)		0.0039	-0.0185
Jul-66	Market Return			(0.0120)		0.0038	-0.0158
Aug-66	Market Return			(0.0725)		0.0043	-0.0768
Sep-66	Market Return			(0.0053)		0.0041	-0.0094
Oct-66	Market Return			0.0494		0.0040	0.0454
Nov-66	Market Return			0.0095		0.0038	0.0057
Dec-66	Market Return			0.0002		0.0039	-0.0037
Jan-67	Market Return			0.0798		0.0040	0.0758
Feb-67	Market Return			0.0072		0.0034	0.0038
Mar-67	Market Return			0.0409		0.0039	0.0370
Apr-67	Market Return			0.0437		0.0035	0.0402
May-67	Market Return			(0.0477)		0.0043	-0.0520
Jun-67	Market Return			0.0190		0.0039	0.0151
Jul-67	Market Return			0.0468		0.0043	0.0425
Aug-67	Market Return			(0.0070)		0.0042	-0.0112
Sep-67	Market Return			0.0342		0.0040	0.0302
Oct-67	Market Return			(0.0276)		0.0045	-0.0321
Nov-67	Market Return			0.0065		0.0045	0.0020
Dec-67	Market Return			0.0278		0.0044	0.0234
Jan-68	Market Return			(0.0425)		0.0050	-0.0475
Feb-68	Market Return			(0.0261)		0.0042	-0.0303
Mar-68	Market Return			0.0110		0.0043	0.0067

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Apr-68	Market Return			0.0834		0.0049	0.0785
May-68	Market Return			0.0161		0.0046	0.0115
Jun-68	Market Return			0.0105		0.0042	0.0063
Jul-68	Market Return			(0.0172)		0.0048	-0.0220
Aug-68	Market Return			0.0164		0.0042	0.0122
Sep-68	Market Return			0.0400		0.0044	0.0356
Oct-68	Market Return			0.0087		0.0045	0.0042
Nov-68	Market Return			0.0531		0.0043	0.0488
Dec-68	Market Return			(0.0402)		0.0049	-0.0451
Jan-69	Market Return			(0.0068)		0.0050	-0.0118
Feb-69	Market Return			(0.0426)		0.0046	-0.0472
Mar-69	Market Return			0.0359		0.0047	0.0312
Apr-69	Market Return			0.0229		0.0055	0.0174
May-69	Market Return			0.0026		0.0047	-0.0021
Jun-69	Market Return			(0.0542)		0.0055	-0.0597
Jul-69	Market Return			(0.0587)		0.0052	-0.0639
Aug-69	Market Return			0.0454		0.0048	0.0406
Sep-69	Market Return			(0.0236)		0.0055	-0.0291
Oct-69	Market Return			0.0459		0.0057	0.0402
Nov-69	Market Return			(0.0297)		0.0049	-0.0346
Dec-69	Market Return			(0.0177)		0.0060	-0.0237
Jan-70	Market Return			(0.0743)		0.0056	-0.0799
Feb-70	Market Return			0.0586		0.0052	0.0534
Mar-70	Market Return			0.0030		0.0056	-0.0026
Apr-70	Market Return			(0.0889)		0.0054	-0.0943
May-70	Market Return			(0.0547)		0.0055	-0.0602
Jun-70	Market Return			(0.0482)		0.0064	-0.0546
Jul-70	Market Return			0.0752		0.0059	0.0693
Aug-70	Market Return			0.0509		0.0057	0.0452
Sep-70	Market Return			0.0347		0.0056	0.0291
Oct-70	Market Return			(0.0097)		0.0055	-0.0152
Nov-70	Market Return			0.0536		0.0058	0.0478
Dec-70	Market Return			0.0584		0.0053	0.0531

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jan-71	Market Return			0.0419		0.0051	0.0368
Feb-71	Market Return			0.0141		0.0046	0.0095
Mar-71	Market Return			0.0382		0.0056	0.0326
Apr-71	Market Return			0.0377		0.0048	0.0329
May-71	Market Return			(0.0367)		0.0047	-0.0414
Jun-71	Market Return			0.0021		0.0056	-0.0035
Jul-71	Market Return			(0.0399)		0.0052	-0.0451
Aug-71	Market Return			0.0412		0.0055	0.0357
Sep-71	Market Return			(0.0056)		0.0049	-0.0105
Oct-71	Market Return			(0.0404)		0.0047	-0.0451
Nov-71	Market Return			0.0027		0.0051	-0.0024
Dec-71	Market Return			0.0877		0.0050	0.0827
Jan-72	Market Return			0.0194		0.0050	0.0144
Feb-72	Market Return			0.0299		0.0047	0.0252
Mar-72	Market Return			0.0072		0.0049	0.0023
Apr-72	Market Return			0.0057		0.0048	0.0009
May-72	Market Return			0.0219		0.0055	0.0164
Jun-72	Market Return			(0.0205)		0.0049	-0.0254
Jul-72	Market Return			0.0036		0.0051	-0.0015
Aug-72	Market Return			0.0391		0.0049	0.0342
Sep-72	Market Return			(0.0036)		0.0047	-0.0083
Oct-72	Market Return			0.0107		0.0052	0.0055
Nov-72	Market Return			0.0505		0.0048	0.0457
Dec-72	Market Return			0.0131		0.0045	0.0086
Jan-73	Market Return			(0.0159)		0.0054	-0.0213
Feb-73	Market Return			(0.0333)		0.0051	-0.0384
Mar-73	Market Return			(0.0002)		0.0056	-0.0058
Apr-73	Market Return			(0.0395)		0.0057	-0.0452
May-73	Market Return			(0.0139)		0.0058	-0.0197
Jun-73	Market Return			(0.0051)		0.0055	-0.0106
Jul-73	Market Return			0.0394		0.0061	0.0333
Aug-73	Market Return			(0.0318)		0.0062	-0.0380
Sep-73	Market Return			0.0415		0.0055	0.0360

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Oct-73	Market Return			0.0003		0.0063	-0.0060
Nov-73	Market Return			(0.1082)		0.0056	-0.1138
Dec-73	Market Return			0.0183		0.0060	0.0123
Jan-74	Market Return			(0.0085)		0.0061	-0.0146
Feb-74	Market Return			0.0019		0.0055	-0.0036
Mar-74	Market Return			(0.0217)		0.0058	-0.0275
Apr-74	Market Return			(0.0373)		0.0068	-0.0441
May-74	Market Return			(0.0272)		0.0068	-0.0340
Jun-74	Market Return			(0.0128)		0.0061	-0.0189
Jul-74	Market Return			(0.0759)		0.0072	-0.0831
Aug-74	Market Return			(0.0828)		0.0065	-0.0893
Sep-74	Market Return			(0.1170)		0.0071	-0.1241
Oct-74	Market Return			0.1657		0.0070	0.1587
Nov-74	Market Return			(0.0448)		0.0062	-0.0510
Dec-74	Market Return			(0.0177)		0.0067	-0.0244
Jan-75	Market Return			0.1251		0.0068	0.1183
Feb-75	Market Return			0.0674		0.0060	0.0614
Mar-75	Market Return			0.0237		0.0066	0.0171
Apr-75	Market Return			0.0493		0.0067	0.0426
May-75	Market Return			0.0509		0.0067	0.0442
Jun-75	Market Return			0.0462		0.0070	0.0392
Jul-75	Market Return			(0.0659)		0.0068	-0.0727
Aug-75	Market Return			(0.0144)		0.0065	-0.0209
Sep-75	Market Return			(0.0328)		0.0073	-0.0401
Oct-75	Market Return			0.0637		0.0072	0.0565
Nov-75	Market Return			0.0313		0.0061	0.0252
Dec-75	Market Return			(0.0096)		0.0074	-0.0170
Jan-76	Market Return			0.1199		0.0065	0.1134
Feb-76	Market Return			(0.0058)		0.0060	-0.0118
Mar-76	Market Return			0.0326		0.0071	0.0255
Apr-76	Market Return			(0.0099)		0.0064	-0.0163
May-76	Market Return			(0.0073)		0.0059	-0.0132
Jun-76	Market Return			0.0427		0.0073	0.0354

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jul-76	Market Return			(0.0068)		0.0065	-0.0133
Aug-76	Market Return			0.0014		0.0069	-0.0055
Sep-76	Market Return			0.0247		0.0064	0.0183
Oct-76	Market Return			(0.0206)		0.0061	-0.0267
Nov-76	Market Return			(0.0009)		0.0066	-0.0075
Dec-76	Market Return			0.0540		0.0063	0.0477
Jan-77	Market Return			(0.0489)		0.0059	-0.0548
Feb-77	Market Return			(0.0151)		0.0057	-0.0208
Mar-77	Market Return			(0.0119)		0.0065	-0.0184
Apr-77	Market Return			0.0014		0.0061	-0.0047
May-77	Market Return			(0.0150)		0.0067	-0.0217
Jun-77	Market Return			0.0475		0.0062	0.0413
Jul-77	Market Return			(0.0151)		0.0059	-0.0210
Aug-77	Market Return			(0.0133)		0.0067	-0.0200
Sep-77	Market Return			-		0.0061	-0.0061
Oct-77	Market Return			(0.0415)		0.0063	-0.0478
Nov-77	Market Return			0.0370		0.0063	0.0307
Dec-77	Market Return			0.0048		0.0062	-0.0014
Jan-78	Market Return			(0.0596)		0.0069	-0.0665
Feb-78	Market Return			(0.0161)		0.0060	-0.0221
Mar-78	Market Return			0.0276		0.0069	0.0207
Apr-78	Market Return			0.0870		0.0063	0.0807
May-78	Market Return			0.0136		0.0075	0.0061
Jun-78	Market Return			(0.0152)		0.0069	-0.0221
Jul-78	Market Return			0.0560		0.0073	0.0487
Aug-78	Market Return			0.0340		0.0070	0.0270
Sep-78	Market Return			(0.0048)		0.0065	-0.0113
Oct-78	Market Return			(0.0891)		0.0073	-0.0964
Nov-78	Market Return			0.0260		0.0071	0.0189
Dec-78	Market Return			0.0172		0.0068	0.0104
Jan-79	Market Return			0.0421		0.0079	0.0342
Feb-79	Market Return			(0.0284)		0.0065	-0.0349
Mar-79	Market Return			0.0575		0.0074	0.0501

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Apr-79	Market Return			0.0036		0.0076	-0.0040
May-79	Market Return			(0.0168)		0.0077	-0.0245
Jun-79	Market Return			0.0410		0.0071	0.0339
Jul-79	Market Return			0.0110		0.0076	0.0034
Aug-79	Market Return			0.0611		0.0073	0.0538
Sep-79	Market Return			0.0025		0.0068	-0.0043
Oct-79	Market Return			(0.0656)		0.0082	-0.0738
Nov-79	Market Return			0.0514		0.0083	0.0431
Dec-79	Market Return			0.0192		0.0083	0.0109
Jan-80	Market Return			0.0610		0.0083	0.0527
Feb-80	Market Return			0.0031		0.0084	-0.0053
Mar-80	Market Return			(0.0987)		0.0099	-0.1086
Apr-80	Market Return			0.0429		0.0100	0.0329
May-80	Market Return			0.0562		0.0087	0.0475
Jun-80	Market Return			0.0296		0.0086	0.0210
Jul-80	Market Return			0.0676		0.0084	0.0592
Aug-80	Market Return			0.0131		0.0081	0.0050
Sep-80	Market Return			0.0281		0.0097	0.0184
Oct-80	Market Return			0.0187		0.0097	0.0090
Nov-80	Market Return			0.1095		0.0091	0.1004
Dec-80	Market Return			(0.0315)		0.0108	-0.0423
Jan-81	Market Return			(0.0438)		0.0094	-0.0532
Feb-81	Market Return			0.0208		0.0088	0.0120
Mar-81	Market Return			0.0380		0.0111	0.0269
Apr-81	Market Return			(0.0213)		0.0101	-0.0314
May-81	Market Return			0.0062		0.0104	-0.0042
Jun-81	Market Return			(0.0080)		0.0109	-0.0189
Jul-81	Market Return			0.0007		0.0109	-0.0102
Aug-81	Market Return			(0.0554)		0.0110	-0.0664
Sep-81	Market Return			(0.0502)		0.0114	-0.0616
Oct-81	Market Return			0.0528		0.0117	0.0411
Nov-81	Market Return			0.0441		0.0113	0.0328
Dec-81	Market Return			(0.0265)		0.0100	-0.0365

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jan-82	Market Return			(0.0163)		0.0108	-0.0271
Feb-82	Market Return			(0.0512)		0.0103	-0.0615
Mar-82	Market Return			(0.0060)		0.0124	-0.0184
Apr-82	Market Return			0.0414		0.0112	0.0302
May-82	Market Return			(0.0288)		0.0101	-0.0389
Jun-82	Market Return			(0.0174)		0.0120	-0.0294
Jul-82	Market Return			(0.0215)		0.0114	-0.0329
Aug-82	Market Return			0.1267		0.0112	0.1155
Sep-82	Market Return			0.0110		0.0100	0.0010
Oct-82	Market Return			0.1126		0.0091	0.1035
Nov-82	Market Return			0.0438		0.0094	0.0344
Dec-82	Market Return			0.0173		0.0093	0.0080
Jan-83	Market Return			0.0348		0.0087	0.0261
Feb-83	Market Return			0.0260		0.0081	0.0179
Mar-83	Market Return			0.0365		0.0089	0.0276
Apr-83	Market Return			0.0758		0.0085	0.0673
May-83	Market Return			(0.0052)		0.0091	-0.0143
Jun-83	Market Return			0.0382		0.0090	0.0292
Jul-83	Market Return			(0.0313)		0.0088	-0.0401
Aug-83	Market Return			0.0170		0.0103	0.0067
Sep-83	Market Return			0.0136		0.0096	0.0040
Oct-83	Market Return			(0.0134)		0.0095	-0.0229
Nov-83	Market Return			0.0233		0.0094	0.0139
Dec-83	Market Return			(0.0061)		0.0094	-0.0155
Jan-84	Market Return			(0.0065)		0.0103	-0.0168
Feb-84	Market Return			(0.0328)		0.0092	-0.0420
Mar-84	Market Return			0.0171		0.0098	0.0073
Apr-84	Market Return			0.0069		0.0104	-0.0035
May-84	Market Return			(0.0534)		0.0103	-0.0637
Jun-84	Market Return			0.0221		0.0106	0.0115
Jul-84	Market Return			(0.0143)		0.0116	-0.0259
Aug-84	Market Return			0.1125		0.0106	0.1019
Sep-84	Market Return			0.0002		0.0094	-0.0092

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Oct-84	Market Return			0.0026		0.0108	-0.0082
Nov-84	Market Return			(0.0101)		0.0091	-0.0192
Dec-84	Market Return			0.0253		0.0098	0.0155
Jan-85	Market Return			0.0768		0.0096	0.0672
Feb-85	Market Return			0.0137		0.0082	0.0055
Mar-85	Market Return			0.0018		0.0094	-0.0076
Apr-85	Market Return			(0.0032)		0.0102	-0.0134
May-85	Market Return			0.0615		0.0097	0.0518
Jun-85	Market Return			0.0159		0.0080	0.0079
Jul-85	Market Return			(0.0026)		0.0094	-0.0120
Aug-85	Market Return			(0.0061)		0.0085	-0.0146
Sep-85	Market Return			(0.0321)		0.0088	-0.0409
Oct-85	Market Return			0.0447		0.0089	0.0358
Nov-85	Market Return			0.0716		0.0081	0.0635
Dec-85	Market Return			0.0467		0.0086	0.0381
Jan-86	Market Return			0.0044		0.0079	-0.0035
Feb-86	Market Return			0.0761		0.0073	0.0688
Mar-86	Market Return			0.0554		0.0071	0.0483
Apr-86	Market Return			(0.0124)		0.0063	-0.0187
May-86	Market Return			0.0549		0.0062	0.0487
Jun-86	Market Return			0.0166		0.0070	0.0096
Jul-86	Market Return			(0.0569)		0.0066	-0.0635
Aug-86	Market Return			0.0748		0.0063	0.0685
Sep-86	Market Return			(0.0822)		0.0065	-0.0887
Oct-86	Market Return			0.0556		0.0069	0.0487
Nov-86	Market Return			0.0256		0.0059	0.0197
Dec-86	Market Return			(0.0264)		0.0070	-0.0334
Jan-87	Market Return			0.1343		0.0064	0.1279
Feb-87	Market Return			0.0413		0.0059	0.0354
Mar-87	Market Return			0.0272		0.0066	0.0206
Apr-87	Market Return			(0.0088)		0.0065	-0.0153
May-87	Market Return			0.0103		0.0066	0.0037
Jun-87	Market Return			0.0499		0.0075	0.0424

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jul-87	Market Return			0.0498		0.0073	0.0425
Aug-87	Market Return			0.0385		0.0075	0.0310
Sep-87	Market Return			(0.0220)		0.0075	-0.0295
Oct-87	Market Return			(0.2152)		0.0079	-0.2231
Nov-87	Market Return			(0.0819)		0.0075	-0.0894
Dec-87	Market Return			0.0738		0.0078	0.0660
Jan-88	Market Return			0.0427		0.0072	0.0355
Feb-88	Market Return			0.0470		0.0071	0.0399
Mar-88	Market Return			(0.0302)		0.0072	-0.0374
Apr-88	Market Return			0.0108		0.0070	0.0038
May-88	Market Return			0.0078		0.0078	0.0000
Jun-88	Market Return			0.0464		0.0076	0.0388
Jul-88	Market Return			(0.0040)		0.0071	-0.0111
Aug-88	Market Return			(0.0331)		0.0083	-0.0414
Sep-88	Market Return			0.0424		0.0076	0.0348
Oct-88	Market Return			0.0273		0.0076	0.0197
Nov-88	Market Return			(0.0142)		0.0070	-0.0212
Dec-88	Market Return			0.0181		0.0075	0.0106
Jan-89	Market Return			0.0723		0.0080	0.0643
Feb-89	Market Return			(0.0249)		0.0069	-0.0318
Mar-89	Market Return			0.0236		0.0079	0.0157
Apr-89	Market Return			0.0516		0.0070	0.0446
May-89	Market Return			0.0402		0.0080	0.0322
Jun-89	Market Return			(0.0054)		0.0070	-0.0124
Jul-89	Market Return			0.0898		0.0068	0.0830
Aug-89	Market Return			0.0193		0.0066	0.0127
Sep-89	Market Return			(0.0039)		0.0065	-0.0104
Oct-89	Market Return			(0.0233)		0.0072	-0.0305
Nov-89	Market Return			0.0208		0.0064	0.0144
Dec-89	Market Return			0.0236		0.0064	0.0172
Jan-90	Market Return			(0.0671)		0.0073	-0.0744
Feb-90	Market Return			0.0129		0.0066	0.0063
Mar-90	Market Return			0.0263		0.0071	0.0192

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Apr-90	Market Return			(0.0247)		0.0075	-0.0322
May-90	Market Return			0.0975		0.0075	0.0900
Jun-90	Market Return			(0.0070)		0.0068	-0.0138
Jul-90	Market Return			(0.0032)		0.0074	-0.0106
Aug-90	Market Return			(0.0903)		0.0071	-0.0974
Sep-90	Market Return			(0.0492)		0.0069	-0.0561
Oct-90	Market Return			(0.0037)		0.0081	-0.0118
Nov-90	Market Return			0.0644		0.0071	0.0573
Dec-90	Market Return			0.0274		0.0072	0.0202
Jan-91	Market Return			0.0442		0.0071	0.0371
Feb-91	Market Return			0.0716		0.0064	0.0652
Mar-91	Market Return			0.0238		0.0064	0.0174
Apr-91	Market Return			0.0028		0.0076	-0.0048
May-91	Market Return			0.0428		0.0068	0.0360
Jun-91	Market Return			(0.0457)		0.0063	-0.0520
Jul-91	Market Return			0.0468		0.0076	0.0392
Aug-91	Market Return			0.0235		0.0068	0.0167
Sep-91	Market Return			(0.0164)		0.0068	-0.0232
Oct-91	Market Return			0.0134		0.0065	0.0069
Nov-91	Market Return			(0.0404)		0.0060	-0.0464
Dec-91	Market Return			0.1143		0.0068	0.1075
Jan-92	Market Return			(0.0186)		0.0061	-0.0247
Feb-92	Market Return			0.0128		0.0059	0.0069
Mar-92	Market Return			(0.0196)		0.0067	-0.0263
Apr-92	Market Return			0.0291		0.0065	0.0226
May-92	Market Return			0.0054		0.0061	-0.0007
Jun-92	Market Return			(0.0145)		0.0067	-0.0212
Jul-92	Market Return			0.0403		0.0063	0.0340
Aug-92	Market Return			(0.0202)		0.0060	-0.0262
Sep-92	Market Return			0.0115		0.0058	0.0057
Oct-92	Market Return			0.0036		0.0057	-0.0021
Nov-92	Market Return			0.0337		0.0061	0.0276
Dec-92	Market Return			0.0131		0.0063	0.0068

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jan-93	Market Return			0.0073		0.0059	0.0014
Feb-93	Market Return			0.0135		0.0055	0.0080
Mar-93	Market Return			0.0215		0.0063	0.0152
Apr-93	Market Return			(0.0245)		0.0057	-0.0302
May-93	Market Return			0.0270		0.0052	0.0218
Jun-93	Market Return			0.0033		0.0062	-0.0029
Jul-93	Market Return			(0.0047)		0.0054	-0.0101
Aug-93	Market Return			0.0381		0.0056	0.0325
Sep-93	Market Return			(0.0074)		0.0050	-0.0124
Oct-93	Market Return			0.0203		0.0049	0.0154
Nov-93	Market Return			(0.0094)		0.0053	-0.0147
Dec-93	Market Return			0.0123		0.0055	0.0068
Jan-94	Market Return			0.0335		0.0055	0.0280
Feb-94	Market Return			(0.0270)		0.0049	-0.0319
Mar-94	Market Return			(0.0435)		0.0058	-0.0493
Apr-94	Market Return			0.0130		0.0057	0.0073
May-94	Market Return			0.0163		0.0063	0.0100
Jun-94	Market Return			(0.0247)		0.0061	-0.0308
Jul-94	Market Return			0.0331		0.0060	0.0271
Aug-94	Market Return			0.0407		0.0066	0.0341
Sep-94	Market Return			(0.0241)		0.0061	-0.0302
Oct-94	Market Return			0.0229		0.0066	0.0163
Nov-94	Market Return			(0.0367)		0.0064	-0.0431
Dec-94	Market Return			0.0146		0.0066	0.0080
Jan-95	Market Return			0.0260		0.0070	0.0190
Feb-95	Market Return			0.0388		0.0059	0.0329
Mar-95	Market Return			0.0296		0.0064	0.0232
Apr-95	Market Return			0.0291		0.0058	0.0233
May-95	Market Return			0.0395		0.0065	0.0330
Jun-95	Market Return			0.0235		0.0054	0.0181
Jul-95	Market Return			0.0333		0.0056	0.0277
Aug-95	Market Return			0.0027		0.0057	-0.0030
Sep-95	Market Return			0.0419		0.0052	0.0367

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Oct-95	Market Return			(0.0035)		0.0057	-0.0092
Nov-95	Market Return			0.0440		0.0051	0.0389
Dec-95	Market Return			0.0185		0.0049	0.0136
Jan-96	Market Return			0.0344		0.0054	0.0290
Feb-96	Market Return			0.0096		0.0048	0.0048
Mar-96	Market Return			0.0096		0.0052	0.0044
Apr-96	Market Return			0.0147		0.0059	0.0088
May-96	Market Return			0.0258		0.0058	0.0200
Jun-96	Market Return			0.0041		0.0054	-0.0013
Jul-96	Market Return			(0.0445)		0.0062	-0.0507
Aug-96	Market Return			0.0212		0.0057	0.0155
Sep-96	Market Return			0.0562		0.0060	0.0502
Oct-96	Market Return			0.0274		0.0058	0.0216
Nov-96	Market Return			0.0759		0.0052	0.0707
Dec-96	Market Return			(0.0196)		0.0056	-0.0252
Jan-97	Market Return			0.0621		0.0056	0.0565
Feb-97	Market Return			0.0081		0.0051	0.0030
Mar-97	Market Return			(0.0416)		0.0059	-0.0475
Apr-97	Market Return			0.0597		0.0059	0.0538
May-97	Market Return			0.0614		0.0058	0.0556
Jun-97	Market Return			0.0446		0.0059	0.0387
Jul-97	Market Return			0.0794		0.0058	0.0736
Aug-97	Market Return			(0.0556)		0.0049	-0.0605
Sep-97	Market Return			0.0548		0.0058	0.0490
Oct-97	Market Return			(0.0334)		0.0054	-0.0388
Nov-97	Market Return			0.0463		0.0047	0.0416
Dec-97	Market Return			0.0172		0.0054	0.0118
Jan-98	Market Return			0.0111		0.0048	0.0063
Feb-98	Market Return			0.0721		0.0044	0.0677
Mar-98	Market Return			0.0512		0.0052	0.0460
Apr-98	Market Return			0.0101		0.0049	0.0052
May-98	Market Return			(0.0172)		0.0048	-0.0220
Jun-98	Market Return			0.0406		0.0052	0.0354

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jul-98	Market Return			(0.0106)		0.0049	-0.0155
Aug-98	Market Return			(0.1446)		0.0048	-0.1494
Sep-98	Market Return			0.0641		0.0044	0.0597
Oct-98	Market Return			0.0813		0.0042	0.0771
Nov-98	Market Return			0.0606		0.0045	0.0561
Dec-98	Market Return			0.0576		0.0045	0.0531
Jan-99	Market Return			0.0418		0.0042	0.0376
Feb-99	Market Return			(0.0311)		0.0040	-0.0351
Mar-99	Market Return			0.0400		0.0053	0.0347
Apr-99	Market Return			0.0387		0.0048	0.0339
May-99	Market Return			(0.0236)		0.0045	-0.0281
Jun-99	Market Return			0.0555		0.0055	0.0500
Jul-99	Market Return			(0.0312)		0.0051	-0.0363
Aug-99	Market Return			(0.0050)		0.0054	-0.0104
Sep-99	Market Return			(0.0274)		0.0052	-0.0326
Oct-99	Market Return			0.0633		0.0050	0.0583
Nov-99	Market Return			0.0203		0.0056	0.0147
Dec-99	Market Return			0.0589		0.0055	0.0534
Jan-00	Market Return			(0.0502)		0.0057	-0.0559
Feb-00	Market Return			(0.0189)		0.0051	-0.0240
Mar-00	Market Return			0.0978		0.0054	0.0924
Apr-00	Market Return			(0.0301)		0.0047	-0.0348
May-00	Market Return			(0.0205)		0.0056	-0.0261
Jun-00	Market Return			0.0246		0.0052	0.0194
Jul-00	Market Return			(0.0156)		0.0052	-0.0208
Aug-00	Market Return			0.0621		0.0050	0.0571
Sep-00	Market Return			(0.0528)		0.0046	-0.0574
Oct-00	Market Return			(0.0042)		0.0053	-0.0095
Nov-00	Market Return			(0.0788)		0.0048	-0.0836
Dec-00	Market Return			0.0049		0.0045	0.0004
Jan-01	Market Return			0.0355		0.0049	0.0306
Feb-01	Market Return			(0.0912)		0.0042	-0.0954
Mar-01	Market Return			(0.0634)		0.0045	-0.0679

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Apr-01	Market Return			0.0777		0.0047	0.0730
May-01	Market Return			0.0067		0.0050	0.0017
Jun-01	Market Return			(0.0243)		0.0047	-0.0290
Jul-01	Market Return			(0.0098)		0.0052	-0.0150
Aug-01	Market Return			(0.0626)		0.0046	-0.0672
Sep-01	Market Return			(0.0808)		0.0041	-0.0849
Oct-01	Market Return			0.0191		0.0048	0.0143
Nov-01	Market Return			0.0767		0.0041	0.0726
Dec-01	Market Return			0.0088		0.0046	0.0042
Jan-02	Market Return			(0.0146)		0.0048	-0.0194
Feb-02	Market Return			(0.0193)		0.0043	-0.0236
Mar-02	Market Return			0.0376		0.0043	0.0333
Apr-02	Market Return			(0.0606)		0.0054	-0.0660
May-02	Market Return			(0.0074)		0.0049	-0.0123
Jun-02	Market Return			(0.0712)		0.0044	-0.0756
Jul-02	Market Return			(0.0780)		0.0051	-0.0831
Aug-02	Market Return			0.0066		0.0044	0.0022
Sep-02	Market Return			(0.1087)		0.0042	-0.1129
Oct-02	Market Return			0.0880		0.0040	0.0840
Nov-02	Market Return			0.0589		0.0040	0.0549
Dec-02	Market Return			(0.0588)		0.0045	-0.0633
Jan-03	Market Return			(0.0262)		0.0041	-0.0303
Feb-03	Market Return			(0.0150)		0.0038	-0.0188
Mar-03	Market Return			0.0097		0.0040	0.0057
Apr-03	Market Return			0.0824		0.0040	0.0784
May-03	Market Return			0.0527		0.0039	0.0488
Jun-03	Market Return			0.0128		0.0036	0.0092
Jul-03	Market Return			0.0176		0.0038	0.0138
Aug-03	Market Return			0.0195		0.0042	0.0153
Sep-03	Market Return			(0.0106)		0.0046	-0.0152
Oct-03	Market Return			0.0566		0.0041	0.0525
Nov-03	Market Return			0.0088		0.0039	0.0049
Dec-03	Market Return			0.0524		0.0047	0.0477

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jan-04	Market Return			0.0184		0.0042	0.0142
Feb-04	Market Return			0.0139		0.0038	0.0101
Mar-04	Market Return			(0.0151)		0.0043	-0.0194
Apr-04	Market Return			(0.0157)		0.0039	-0.0196
May-04	Market Return			0.0137		0.0040	0.0097
Jun-04	Market Return			0.0194		0.0048	0.0146
Jul-04	Market Return			(0.0331)		0.0043	-0.0374
Aug-04	Market Return			0.0040		0.0045	-0.0005
Sep-04	Market Return			0.0108		0.0040	0.0068
Oct-04	Market Return			0.0153		0.0038	0.0115
Nov-04	Market Return			0.0405		0.0041	0.0364
Dec-04	Market Return			0.0340		0.0043	0.0297
Jan-05	Market Return			(0.0244)		0.0041	-0.0285
Feb-05	Market Return			0.0210		0.0035	0.0175
Mar-05	Market Return			(0.0177)		0.0041	-0.0218

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Apr-05	Market Return			(0.0190)		0.0039	-0.0229
May-05	Market Return			0.0318		0.0040	0.0278
Jun-05	Market Return			0.0014		0.0036	-0.0022
Jul-05	Market Return			0.0372		0.0034	0.0338
Aug-05	Market Return			(0.0091)		0.0040	-0.0131
Sep-05	Market Return			0.0081		0.0035	0.0046
Oct-05	Market Return			(0.0167)		0.0039	-0.0206
Nov-05	Market Return			0.0378		0.0039	0.0339
Dec-05	Market Return			0.0003		0.0039	-0.0036
Jan-06	Market Return			0.0265		0.0040	0.0225
Feb-06	Market Return			0.0027		0.0036	-0.0009
Mar-06	Market Return			0.0124		0.0039	0.0085
Apr-06	Market Return			0.0134		0.0039	0.0095
May-06	Market Return			(0.0288)		0.0048	-0.0336
Jun-06	Market Return			0.0014		0.0044	-0.0030
Jul-06	Market Return			0.0062		0.0045	0.0017
Aug-06	Market Return			0.0238		0.0043	0.0195
Sep-06	Market Return			0.0258		0.0039	0.0219
Oct-06	Market Return			0.0326		0.0042	0.0284
Nov-06	Market Return			0.0190		0.0039	0.0151
Dec-06	Market Return			0.0140		0.0036	0.0104
Jan-07	Market Return			0.0151		0.0043	0.0108
Feb-07	Market Return			(0.0196)		0.0038	-0.0234
Mar-07	Market Return			0.0112		0.0039	0.0073
Apr-07	Market Return			0.0443		0.0042	0.0401
May-07	Market Return			0.0349		0.0041	0.0308
Jun-07	Market Return			(0.0166)		0.0040	-0.0206
Jul-07	Market Return			(0.0310)		0.0046	-0.0356
Aug-07	Market Return			0.0150		0.0042	0.0108
Sep-07	Market Return			0.0375		0.0037	0.0338
Oct-07	Market Return			0.0159		0.0043	0.0116
Nov-07	Market Return			(0.0418)		0.0039	-0.0457
Dec-07	Market Return			(0.0069)		0.0037	-0.0106

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jan-08	Market Return			(0.0600)		0.0040	-0.0640
Feb-08	Market Return			(0.0352)		0.0034	-0.0386
Mar-08	Market Return			(0.0043)		0.0037	-0.0080
Apr-08	Market Return			0.0487		0.0035	0.0452
May-08	Market Return			0.0130		0.0037	0.0093
Jun-08	Market Return			(0.0843)		0.0040	-0.0883
Jul-08	Market Return			(0.0084)		0.0039	-0.0123
Aug-08	Market Return			0.0145		0.0036	0.0109
Sep-08	Market Return			(0.0891)		0.0039	-0.0930
Oct-08	Market Return			(0.1679)		0.0037	-0.1716
Nov-08	Market Return			(0.0718)		0.0036	-0.0754
Dec-08	Market Return			0.0106		0.0033	0.0073
Jan-09	Market Return			(0.0843)		0.0024	-0.0867
Feb-09	Market Return			(0.1065)		0.0030	-0.1095
Mar-09	Market Return			0.0876		0.0035	0.0841
Apr-09	Market Return			0.0957		0.0029	0.0928
May-09	Market Return			0.0559		0.0033	0.0526
Jun-09	Market Return			0.0020		0.0038	-0.0018
Jul-09	Market Return			0.0756		0.0036	0.0720
Aug-09	Market Return			0.0361		0.0036	0.0325
Sep-09	Market Return			0.0373		0.0034	0.0339
Oct-09	Market Return			(0.0186)		0.0033	-0.0219
Nov-09	Market Return			0.0600		0.0035	0.0565

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Dec-09	Market Return			0.0193		0.0034	0.0159
Jan-10	Market Return			(0.0360)		0.0036	-0.0396
Feb-10	Market Return			0.0310		0.0033	0.0277
Mar-10	Market Return			0.0603		0.0040	0.0563
Apr-10	Market Return			0.0158		0.0038	0.0120
May-10	Market Return			(0.0799)		0.0034	-0.0833
Jun-10	Market Return			(0.0523)		0.0037	-0.0560
Jul-10	Market Return			0.0707		0.0031	0.0676
Aug-10	Market Return			(0.0451)		0.0032	-0.0483
Sep-10	Market Return			0.0892		0.0026	0.0866
Oct-10	Market Return			0.0380		0.0027	0.0353
Nov-10	Market Return			0.0001		0.0032	-0.0031
Dec-10	Market Return			0.0668		0.0032	0.0636
Jan-11	Market Return			0.0237		0.003567	0.0201
Feb-11	Market Return			0.0343		0.003683	0.0306
Mar-11	Market Return			0.0004		0.003558	-0.0032
Apr-11	Market Return			0.0296		0.003567	0.0260
May-11	Market Return			(0.0113)		0.003342	-0.0146
Jun-11	Market Return			(0.0167)		0.003258	-0.0200
Jul-11	Market Return			(0.0203)		0.003292	-0.0236
Aug-11	Market Return			(0.0543)		0.003042	-0.0573
Sep-11	Market Return			(0.0703)		0.002358	-0.0727
Oct-11	Market Return			0.1093		0.002392	0.1069
Nov-11	Market Return			(0.0022)		0.002267	-0.0045
Dec-11	Market Return			0.0102		0.002483	0.0077
Jan-12	Market Return			0.0448		0.0021	0.0427
Feb-12	Market Return			0.0432		0.002	0.0412
Mar-12	Market Return			0.0329		0.0022	0.0307
Apr-12	Market Return			(0.0063)		0.0025	-0.0088
May-12	Market Return			(0.0601)		0.0023	-0.0624
Jun-12	Market Return			0.0412		0.0018	0.0394
Jul-12	Market Return			0.0139		0.002	0.0119
Aug-12	Market Return			0.0225		0.0018	0.0207

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Sep-12	Market Return			0.0258		0.0017	0.0241
Oct-12	Market Return			(0.0185)		0.0021	-0.0206
Nov-12	Market Return			0.0058		0.0019	0.0039
Dec-12	Market Return			0.0091		0.0019	0.0072
Jan-13	Market Return			0.0518		0.0022	0.0496
Feb-13	Market Return			0.0136		0.0022	0.0114
Mar-13	Market Return			0.0375		0.0021	0.0354
Apr-13	Market Return			0.0193		0.0026	0.0167
May-13	Market Return			0.0234		0.0023	0.0211
Jun-13	Market Return			(0.0134)		0.0024	-0.0158
Jul-13	Market Return			0.0509		0.003	0.0479
Aug-13	Market Return			(0.0290)		0.0028	-0.0318
Sep-13	Market Return			0.0314		0.0029	0.0285
Oct-13	Market Return			0.0460		0.0029	0.0431
Nov-13	Market Return			0.0305		0.0027	0.0278
Dec-13	Market Return			0.0253		0.0031	0.0222
Jan-14	Market Return			(0.0346)		0.0032	-0.0378
Feb-14	Market Return			0.0457		0.0026	0.0431
Mar-14	Market Return			0.0084		0.0029	0.0055
Apr-14	Market Return			0.0074		0.0028	0.0046
May-14	Market Return			0.0235		0.0028	0.0207
Jun-14	Market Return			0.0207		0.0025	0.0182
Jul-14	Market Return			(0.0138)		0.0027	-0.0165
Aug-14	Market Return			0.0400		0.0026	0.0374
Sep-14	Market Return			(0.0140)		0.0023	-0.0163
Oct-14	Market Return			0.0244		0.0025	0.0219
Nov-14	Market Return			0.0269		0.0023	0.0246
Dec-14	Market Return			(0.0025)		0.0022	-0.0047
Jan-15	Market Return			(0.0300)		0.002	-0.0320
Feb-15	Market Return			0.0575		0.0015	0.0560
Mar-15	Market Return			(0.0158)		0.0021	-0.0179
Apr-15	Market Return			0.0096		0.0019	0.0077
May-15	Market Return			0.0129		0.002	0.0109

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP
Jun-15	Market Return			(0.0194)		0.0023	-0.0217
Jul-15	Market Return			0.0210		0.0024	0.0186
Aug-15	Market Return			(0.0603)		0.0022	-0.0625
Sep-15	Market Return			(0.0247)		0.0021	-0.0268
Oct-15	Market Return			0.0844		0.0021	0.0823
Nov-15	Market Return			0.0030		0.0022	0.0008

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jan-26							
Feb-26							
Mar-26							
Apr-26							
May-26							
Jun-26							
Jul-26							
Aug-26							
Sep-26							
Oct-26							
Nov-26							
Dec-26							
Jan-27							
Feb-27							
Mar-27							
Apr-27							
May-27							
Jun-27							
Jul-27							
Aug-27							
Sep-27							
Oct-27							
Nov-27							
Dec-27							
Jan-28	S&P 500 Utility Index			0.0375		0.0040	0.0335
Feb-28	S&P 500 Utility Index			-0.0080		0.0040	-0.0120
Mar-28	S&P 500 Utility Index			0.0723		0.0040	0.0683
Apr-28	S&P 500 Utility Index			0.0986		0.0040	0.0946
May-28	S&P 500 Utility Index			0.0208		0.0041	0.0167
Jun-28	S&P 500 Utility Index			-0.0401		0.0042	-0.0443
Jul-28	S&P 500 Utility Index			-0.0076		0.0042	-0.0118
Aug-28	S&P 500 Utility Index			0.0682		0.0042	0.0640
Sep-28	S&P 500 Utility Index			0.0287		0.0042	0.0245
Oct-28	S&P 500 Utility Index			-0.0092		0.0042	-0.0134

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Nov-28	S&P 500 Utility Index			0.2147		0.0042	0.2106
Dec-28	S&P 500 Utility Index			0.0100		0.0042	0.0058
Jan-29	S&P 500 Utility Index			0.1325		0.0042	0.1283
Feb-29	S&P 500 Utility Index			-0.0232		0.0043	-0.0275
Mar-29	S&P 500 Utility Index			-0.0110		0.0043	-0.0153
Apr-29	S&P 500 Utility Index			0.0347		0.0043	0.0304
May-29	S&P 500 Utility Index			0.0470		0.0043	0.0427
Jun-29	S&P 500 Utility Index			0.2178		0.0044	0.2134
Jul-29	S&P 500 Utility Index			0.0905		0.0044	0.0861
Aug-29	S&P 500 Utility Index			0.1033		0.0044	0.0989
Sep-29	S&P 500 Utility Index			0.0004		0.0045	-0.0041
Oct-29	S&P 500 Utility Index			-0.3022		0.0045	-0.3067
Nov-29	S&P 500 Utility Index			-0.1424		0.0044	-0.1468
Dec-29	S&P 500 Utility Index			0.0680		0.0044	0.0636
Jan-30	S&P 500 Utility Index			0.0740		0.0044	0.0696
Feb-30	S&P 500 Utility Index			0.0885		0.0044	0.0841
Mar-30	S&P 500 Utility Index			0.0891		0.0043	0.0848
Apr-30	S&P 500 Utility Index			0.0341		0.0043	0.0298
May-30	S&P 500 Utility Index			-0.0236		0.0042	-0.0278
Jun-30	S&P 500 Utility Index			-0.1903		0.0042	-0.1945
Jul-30	S&P 500 Utility Index			0.0176		0.0042	0.0134
Aug-30	S&P 500 Utility Index			0.0076		0.0041	0.0035
Sep-30	S&P 500 Utility Index			-0.1108		0.0041	-0.1149
Oct-30	S&P 500 Utility Index			-0.0818		0.0041	-0.0859
Nov-30	S&P 500 Utility Index			-0.0730		0.0041	-0.0771
Dec-30	S&P 500 Utility Index			-0.0339		0.0043	-0.0382
Jan-31	S&P 500 Utility Index			0.0540		0.0042	0.0498
Feb-31	S&P 500 Utility Index			0.1524		0.0042	0.1482
Mar-31	S&P 500 Utility Index			-0.0239		0.0042	-0.0281
Apr-31	S&P 500 Utility Index			-0.1054		0.0041	-0.1095
May-31	S&P 500 Utility Index			-0.1029		0.0040	-0.1069
Jun-31	S&P 500 Utility Index			0.1373		0.0041	0.1332
Jul-31	S&P 500 Utility Index			-0.0622		0.0040	-0.0662
Aug-31	S&P 500 Utility Index			0.0256		0.0040	0.0216

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Sep-31	S&P 500 Utility Index			-0.3149		0.0042	-0.3191
Oct-31	S&P 500 Utility Index			0.0990		0.0046	0.0944
Nov-31	S&P 500 Utility Index			-0.0614		0.0046	-0.0660
Dec-31	S&P 500 Utility Index			-0.1283		0.0052	-0.1335
Jan-32	S&P 500 Utility Index			-0.0200		0.0051	-0.0251
Feb-32	S&P 500 Utility Index			0.0799		0.0053	0.0746
Mar-32	S&P 500 Utility Index			-0.1058		0.0051	-0.1109
Apr-32	S&P 500 Utility Index			-0.1535		0.0057	-0.1592
May-32	S&P 500 Utility Index			-0.2806		0.0061	-0.2867
Jun-32	S&P 500 Utility Index			0.0090		0.0063	0.0027
Jul-32	S&P 500 Utility Index			0.3318		0.0061	0.3257
Aug-32	S&P 500 Utility Index			0.4030		0.0053	0.3977
Sep-32	S&P 500 Utility Index			-0.0270		0.0049	-0.0319
Oct-32	S&P 500 Utility Index			-0.1047		0.0048	-0.1095
Nov-32	S&P 500 Utility Index			-0.0354		0.0049	-0.0403
Dec-32	S&P 500 Utility Index			0.0893		0.0049	0.0844
Jan-33	S&P 500 Utility Index			-0.0311		0.0045	-0.0356
Feb-33	S&P 500 Utility Index			-0.1984		0.0048	-0.2032
Mar-33	S&P 500 Utility Index			-0.1080		0.0053	-0.1133
Apr-33	S&P 500 Utility Index			0.2635		0.0057	0.2578
May-33	S&P 500 Utility Index			0.1732		0.0054	0.1678
Jun-33	S&P 500 Utility Index			0.1426		0.0051	0.1375
Jul-33	S&P 500 Utility Index			-0.1204		0.0049	-0.1253
Aug-33	S&P 500 Utility Index			-0.0056		0.0050	-0.0106
Sep-33	S&P 500 Utility Index			-0.1759		0.0053	-0.1812
Oct-33	S&P 500 Utility Index			-0.0712		0.0053	-0.0765
Nov-33	S&P 500 Utility Index			-0.0180		0.0059	-0.0239
Dec-33	S&P 500 Utility Index			0.0126		0.0060	0.0066
Jan-34	S&P 500 Utility Index			0.1746		0.0055	0.1691
Feb-34	S&P 500 Utility Index			-0.0242		0.0048	-0.0290
Mar-34	S&P 500 Utility Index			-0.0111		0.0047	-0.0158
Apr-34	S&P 500 Utility Index			-0.0351		0.0045	-0.0396
May-34	S&P 500 Utility Index			-0.0765		0.0045	-0.0810
Jun-34	S&P 500 Utility Index			0.0478		0.0045	0.0433

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jul-34	S&P 500 Utility Index			-0.1603		0.0044	-0.1647
Aug-34	S&P 500 Utility Index			0.0269		0.0045	0.0224
Sep-34	S&P 500 Utility Index			0.0095		0.0046	0.0049
Oct-34	S&P 500 Utility Index			-0.0666		0.0045	-0.0711
Nov-34	S&P 500 Utility Index			-0.0048		0.0045	-0.0093
Dec-34	S&P 500 Utility Index			-0.0701		0.0045	-0.0746
Jan-35	S&P 500 Utility Index			-0.0231		0.0043	-0.0274
Feb-35	S&P 500 Utility Index			-0.1136		0.0041	-0.1177
Mar-35	S&P 500 Utility Index			0.1043		0.0041	0.1002
Apr-35	S&P 500 Utility Index			0.1178		0.0040	0.1138
May-35	S&P 500 Utility Index			0.1106		0.0038	0.1068
Jun-35	S&P 500 Utility Index			0.1036		0.0038	0.0998
Jul-35	S&P 500 Utility Index			0.0870		0.0037	0.0833
Aug-35	S&P 500 Utility Index			0.0563		0.0037	0.0526
Sep-35	S&P 500 Utility Index			-0.0122		0.0037	-0.0159
Oct-35	S&P 500 Utility Index			0.1224		0.0037	0.1187
Nov-35	S&P 500 Utility Index			0.0108		0.0036	0.0072
Dec-35	S&P 500 Utility Index			0.0479		0.0036	0.0443
Jan-36	S&P 500 Utility Index			0.1103		0.0035	0.1068
Feb-36	S&P 500 Utility Index			-0.0342		0.0035	-0.0377
Mar-36	S&P 500 Utility Index			0.0033		0.0035	-0.0002
Apr-36	S&P 500 Utility Index			-0.0814		0.0035	-0.0849
May-36	S&P 500 Utility Index			0.0761		0.0035	0.0727
Jun-36	S&P 500 Utility Index			0.0350		0.0034	0.0316
Jul-36	S&P 500 Utility Index			0.1009		0.0034	0.0975
Aug-36	S&P 500 Utility Index			-0.0018		0.0034	-0.0052
Sep-36	S&P 500 Utility Index			-0.0225		0.0034	-0.0259
Oct-36	S&P 500 Utility Index			0.0566		0.0034	0.0532
Nov-36	S&P 500 Utility Index			-0.0169		0.0033	-0.0202
Dec-36	S&P 500 Utility Index			-0.0174		0.0032	-0.0206
Jan-37	S&P 500 Utility Index			0.0195		0.0032	0.0163
Feb-37	S&P 500 Utility Index			-0.0353		0.0032	-0.0385
Mar-37	S&P 500 Utility Index			-0.0573		0.0033	-0.0606
Apr-37	S&P 500 Utility Index			-0.0736		0.0034	-0.0770

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
May-37	S&P 500 Utility Index			-0.0516		0.0033	-0.0549
Jun-37	S&P 500 Utility Index			-0.0467		0.0033	-0.0500
Jul-37	S&P 500 Utility Index			0.1671		0.0033	0.1638
Aug-37	S&P 500 Utility Index			-0.0903		0.0032	-0.0935
Sep-37	S&P 500 Utility Index			-0.1174		0.0033	-0.1207
Oct-37	S&P 500 Utility Index			-0.0516		0.0034	-0.0550
Nov-37	S&P 500 Utility Index			0.0080		0.0034	0.0046
Dec-37	S&P 500 Utility Index			-0.0951		0.0034	-0.0985
Jan-38	S&P 500 Utility Index			-0.0368		0.0033	-0.0401
Feb-38	S&P 500 Utility Index			0.0341		0.0034	0.0307
Mar-38	S&P 500 Utility Index			-0.1984		0.0033	-0.2017
Apr-38	S&P 500 Utility Index			0.1538		0.0034	0.1504
May-38	S&P 500 Utility Index			0.0181		0.0033	0.0148
Jun-38	S&P 500 Utility Index			0.1622		0.0033	0.1589
Jul-38	S&P 500 Utility Index			0.0148		0.0032	0.0116
Aug-38	S&P 500 Utility Index			-0.0557		0.0032	-0.0589
Sep-38	S&P 500 Utility Index			0.0191		0.0032	0.0159
Oct-38	S&P 500 Utility Index			0.1801		0.0032	0.1769
Nov-38	S&P 500 Utility Index			-0.0620		0.0031	-0.0651
Dec-38	S&P 500 Utility Index			0.0391		0.0031	0.0360
Jan-39	S&P 500 Utility Index			0.0165		0.0031	0.0134
Feb-39	S&P 500 Utility Index			0.0801		0.0030	0.0771
Mar-39	S&P 500 Utility Index			-0.1378		0.0030	-0.1408
Apr-39	S&P 500 Utility Index			0.0285		0.0030	0.0255
May-39	S&P 500 Utility Index			0.0665		0.0029	0.0636
Jun-39	S&P 500 Utility Index			-0.0423		0.0029	-0.0452
Jul-39	S&P 500 Utility Index			0.1208		0.0029	0.1179
Aug-39	S&P 500 Utility Index			-0.0647		0.0028	-0.0675
Sep-39	S&P 500 Utility Index			0.0421		0.0031	0.0390
Oct-39	S&P 500 Utility Index			0.0130		0.0030	0.0100
Nov-39	S&P 500 Utility Index			-0.0157		0.0028	-0.0185
Dec-39	S&P 500 Utility Index			0.0272		0.0028	0.0244
Jan-40	S&P 500 Utility Index			0.0069		0.0028	0.0041
Feb-40	S&P 500 Utility Index			-0.0102		0.0028	-0.0130

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Mar-40	S&P 500 Utility Index			0.0094		0.0028	0.0066
Apr-40	S&P 500 Utility Index			-0.0092		0.0027	-0.0119
May-40	S&P 500 Utility Index			-0.1964		0.0028	-0.1992
Jun-40	S&P 500 Utility Index			0.1506		0.0028	0.1478
Jul-40	S&P 500 Utility Index			0.0065		0.0027	0.0038
Aug-40	S&P 500 Utility Index			-0.0094		0.0027	-0.0121
Sep-40	S&P 500 Utility Index			-0.0211		0.0027	-0.0238
Oct-40	S&P 500 Utility Index			0.0317		0.0026	0.0291
Nov-40	S&P 500 Utility Index			-0.1207		0.0026	-0.1233
Dec-40	S&P 500 Utility Index			0.0154		0.0026	0.0128
Jan-41	S&P 500 Utility Index			-0.0084		0.0026	-0.0110
Feb-41	S&P 500 Utility Index			-0.0233		0.0027	-0.0260
Mar-41	S&P 500 Utility Index			-0.0280		0.0026	-0.0306
Apr-41	S&P 500 Utility Index			-0.0844		0.0026	-0.0870
May-41	S&P 500 Utility Index			-0.0337		0.0026	-0.0363
Jun-41	S&P 500 Utility Index			0.0257		0.0025	0.0232
Jul-41	S&P 500 Utility Index			0.0538		0.0025	0.0513
Aug-41	S&P 500 Utility Index			-0.0192		0.0025	-0.0217
Sep-41	S&P 500 Utility Index			-0.0282		0.0025	-0.0307
Oct-41	S&P 500 Utility Index			-0.0848		0.0025	-0.0873
Nov-41	S&P 500 Utility Index			-0.0652		0.0025	-0.0677
Dec-41	S&P 500 Utility Index			-0.0678		0.0026	-0.0704
Jan-42	S&P 500 Utility Index			0.0252		0.0026	0.0226
Feb-42	S&P 500 Utility Index			-0.0339		0.0026	-0.0365
Mar-42	S&P 500 Utility Index			-0.1046		0.0026	-0.1072
Apr-42	S&P 500 Utility Index			-0.0432		0.0026	-0.0458
May-42	S&P 500 Utility Index			0.0956		0.0026	0.0930
Jun-42	S&P 500 Utility Index			0.0057		0.0026	0.0031
Jul-42	S&P 500 Utility Index			0.0040		0.0026	0.0014
Aug-42	S&P 500 Utility Index			0.0026		0.0026	0.0000
Sep-42	S&P 500 Utility Index			0.0466		0.0026	0.0440
Oct-42	S&P 500 Utility Index			0.1362		0.0026	0.1336
Nov-42	S&P 500 Utility Index			-0.0015		0.0026	-0.0041
Dec-42	S&P 500 Utility Index			0.0328		0.0026	0.0303

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jan-43	S&P 500 Utility Index			0.1217		0.0025	0.1192
Feb-43	S&P 500 Utility Index			0.0719		0.0025	0.0694
Mar-43	S&P 500 Utility Index			0.0412		0.0025	0.0387
Apr-43	S&P 500 Utility Index			0.0387		0.0025	0.0362
May-43	S&P 500 Utility Index			0.0347		0.0025	0.0322
Jun-43	S&P 500 Utility Index			0.0538		0.0025	0.0513
Jul-43	S&P 500 Utility Index			0.0038		0.0025	0.0013
Aug-43	S&P 500 Utility Index			0.0105		0.0025	0.0080
Sep-43	S&P 500 Utility Index			0.0323		0.0025	0.0298
Oct-43	S&P 500 Utility Index			0.0082		0.0025	0.0057
Nov-43	S&P 500 Utility Index			-0.0775		0.0025	-0.0800
Dec-43	S&P 500 Utility Index			0.0578		0.0025	0.0553
Jan-44	S&P 500 Utility Index			0.0106		0.0025	0.0081
Feb-44	S&P 500 Utility Index			0.0179		0.0025	0.0154
Mar-44	S&P 500 Utility Index			0.0104		0.0025	0.0079
Apr-44	S&P 500 Utility Index			-0.0091		0.0025	-0.0116
May-44	S&P 500 Utility Index			0.0301		0.0025	0.0276
Jun-44	S&P 500 Utility Index			0.0526		0.0025	0.0501
Jul-44	S&P 500 Utility Index			0.0029		0.0025	0.0004
Aug-44	S&P 500 Utility Index			0.0357		0.0025	0.0333
Sep-44	S&P 500 Utility Index			-0.0150		0.0024	-0.0174
Oct-44	S&P 500 Utility Index			0.0139		0.0025	0.0115
Nov-44	S&P 500 Utility Index			-0.0130		0.0025	-0.0155
Dec-44	S&P 500 Utility Index			0.0324		0.0025	0.0299
Jan-45	S&P 500 Utility Index			0.0497		0.0025	0.0472
Feb-45	S&P 500 Utility Index			0.0695		0.0025	0.0670
Mar-45	S&P 500 Utility Index			-0.0357		0.0025	-0.0382
Apr-45	S&P 500 Utility Index			0.1066		0.0025	0.1041
May-45	S&P 500 Utility Index			0.0171		0.0024	0.0147
Jun-45	S&P 500 Utility Index			0.0662		0.0024	0.0638
Jul-45	S&P 500 Utility Index			-0.0051		0.0024	-0.0075
Aug-45	S&P 500 Utility Index			0.0031		0.0023	0.0008
Sep-45	S&P 500 Utility Index			0.0739		0.0023	0.0716
Oct-45	S&P 500 Utility Index			0.0641		0.0023	0.0618

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Nov-45	S&P 500 Utility Index			0.0471		0.0023	0.0448
Dec-45	S&P 500 Utility Index			-0.0117		0.0023	-0.0140
Jan-46	S&P 500 Utility Index			0.1199		0.0022	0.1177
Feb-46	S&P 500 Utility Index			-0.0640		0.0022	-0.0662
Mar-46	S&P 500 Utility Index			0.0631		0.0022	0.0609
Apr-46	S&P 500 Utility Index			0.0338		0.0022	0.0316
May-46	S&P 500 Utility Index			0.0301		0.0022	0.0279
Jun-46	S&P 500 Utility Index			-0.0276		0.0023	-0.0299
Jul-46	S&P 500 Utility Index			-0.0395		0.0022	-0.0417
Aug-46	S&P 500 Utility Index			-0.0724		0.0023	-0.0747
Sep-46	S&P 500 Utility Index			-0.1051		0.0023	-0.1074
Oct-46	S&P 500 Utility Index			0.0220		0.0023	0.0197
Nov-46	S&P 500 Utility Index			0.0058		0.0023	0.0035
Dec-46	S&P 500 Utility Index			0.0706		0.0023	0.0683
Jan-47	S&P 500 Utility Index			-0.0002		0.0023	-0.0025
Feb-47	S&P 500 Utility Index			-0.0089		0.0023	-0.0112
Mar-47	S&P 500 Utility Index			-0.0364		0.0023	-0.0387
Apr-47	S&P 500 Utility Index			-0.0320		0.0023	-0.0343
May-47	S&P 500 Utility Index			-0.0279		0.0023	-0.0302
Jun-47	S&P 500 Utility Index			0.0428		0.0023	0.0405
Jul-47	S&P 500 Utility Index			0.0214		0.0023	0.0191
Aug-47	S&P 500 Utility Index			-0.0022		0.0023	-0.0045
Sep-47	S&P 500 Utility Index			-0.0142		0.0023	-0.0165
Oct-47	S&P 500 Utility Index			-0.0133		0.0024	-0.0157
Nov-47	S&P 500 Utility Index			-0.0824		0.0024	-0.0848
Dec-47	S&P 500 Utility Index			0.0189		0.0025	0.0164
Jan-48	S&P 500 Utility Index			0.0070		0.0025	0.0045
Feb-48	S&P 500 Utility Index			-0.0372		0.0025	-0.0397
Mar-48	S&P 500 Utility Index			0.0617		0.0025	0.0592
Apr-48	S&P 500 Utility Index			0.0160		0.0025	0.0135
May-48	S&P 500 Utility Index			0.0583		0.0025	0.0559
Jun-48	S&P 500 Utility Index			0.0212		0.0025	0.0188
Jul-48	S&P 500 Utility Index			-0.0443		0.0025	-0.0468
Aug-48	S&P 500 Utility Index			0.0036		0.0025	0.0011

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Sep-48	S&P 500 Utility Index			-0.0071		0.0025	-0.0096
Oct-48	S&P 500 Utility Index			0.0403		0.0025	0.0378
Nov-48	S&P 500 Utility Index			-0.0913		0.0026	-0.0939
Dec-48	S&P 500 Utility Index			0.0221		0.0026	0.0196
Jan-49	S&P 500 Utility Index			0.0504		0.0025	0.0479
Feb-49	S&P 500 Utility Index			0.0005		0.0025	-0.0020
Mar-49	S&P 500 Utility Index			0.0364		0.0025	0.0339
Apr-49	S&P 500 Utility Index			0.0058		0.0025	0.0033
May-49	S&P 500 Utility Index			0.0034		0.0025	0.0009
Jun-49	S&P 500 Utility Index			-0.0134		0.0025	-0.0159
Jul-49	S&P 500 Utility Index			0.0569		0.0024	0.0545
Aug-49	S&P 500 Utility Index			0.0346		0.0024	0.0322
Sep-49	S&P 500 Utility Index			0.0373		0.0024	0.0349
Oct-49	S&P 500 Utility Index			0.0112		0.0024	0.0088
Nov-49	S&P 500 Utility Index			0.0159		0.0023	0.0136
Dec-49	S&P 500 Utility Index			0.0396		0.0023	0.0373
Jan-50	S&P 500 Utility Index			0.0353		0.0023	0.0330
Feb-50	S&P 500 Utility Index			0.0100		0.0023	0.0077
Mar-50	S&P 500 Utility Index			0.0084		0.0023	0.0061
Apr-50	S&P 500 Utility Index			0.0185		0.0023	0.0162
May-50	S&P 500 Utility Index			0.0192		0.0023	0.0169
Jun-50	S&P 500 Utility Index			-0.0771		0.0023	-0.0794
Jul-50	S&P 500 Utility Index			-0.0436		0.0023	-0.0459
Aug-50	S&P 500 Utility Index			0.0154		0.0023	0.0131
Sep-50	S&P 500 Utility Index			0.0418		0.0023	0.0395
Oct-50	S&P 500 Utility Index			-0.0027		0.0024	-0.0051
Nov-50	S&P 500 Utility Index			-0.0176		0.0024	-0.0200
Dec-50	S&P 500 Utility Index			0.0312		0.0024	0.0288
Jan-51	S&P 500 Utility Index			0.0438		0.0024	0.0414
Feb-51	S&P 500 Utility Index			0.0268		0.0024	0.0244
Mar-51	S&P 500 Utility Index			-0.0174		0.0025	-0.0199
Apr-51	S&P 500 Utility Index			0.0005		0.0026	-0.0021
May-51	S&P 500 Utility Index			0.0066		0.0026	0.0040
Jun-51	S&P 500 Utility Index			-0.0040		0.0027	-0.0067

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jul-51	S&P 500 Utility Index			0.0439		0.0027	0.0412
Aug-51	S&P 500 Utility Index			0.0152		0.0027	0.0125
Sep-51	S&P 500 Utility Index			0.0086		0.0026	0.0060
Oct-51	S&P 500 Utility Index			0.0029		0.0026	0.0003
Nov-51	S&P 500 Utility Index			0.0120		0.0027	0.0093
Dec-51	S&P 500 Utility Index			0.0352		0.0027	0.0325
Jan-52	S&P 500 Utility Index			0.0305		0.0027	0.0278
Feb-52	S&P 500 Utility Index			0.0059		0.0027	0.0032
Mar-52	S&P 500 Utility Index			0.0176		0.0027	0.0149
Apr-52	S&P 500 Utility Index			-0.0154		0.0027	-0.0181
May-52	S&P 500 Utility Index			0.0190		0.0027	0.0163
Jun-52	S&P 500 Utility Index			0.0049		0.0027	0.0022
Jul-52	S&P 500 Utility Index			0.0206		0.0027	0.0179
Aug-52	S&P 500 Utility Index			0.0203		0.0027	0.0176
Sep-52	S&P 500 Utility Index			0.0015		0.0027	-0.0012
Oct-52	S&P 500 Utility Index			0.0101		0.0027	0.0074
Nov-52	S&P 500 Utility Index			0.0423		0.0027	0.0396
Dec-52	S&P 500 Utility Index			0.0213		0.0027	0.0186
Jan-53	S&P 500 Utility Index			0.0103		0.0027	0.0076
Feb-53	S&P 500 Utility Index			-0.0067		0.0028	-0.0095
Mar-53	S&P 500 Utility Index			-0.0043		0.0028	-0.0071
Apr-53	S&P 500 Utility Index			-0.0192		0.0029	-0.0221
May-53	S&P 500 Utility Index			0.0024		0.0030	-0.0006
Jun-53	S&P 500 Utility Index			-0.0273		0.0031	-0.0304
Jul-53	S&P 500 Utility Index			0.0345		0.0031	0.0315
Aug-53	S&P 500 Utility Index			0.0016		0.0030	-0.0014
Sep-53	S&P 500 Utility Index			0.0119		0.0030	0.0089
Oct-53	S&P 500 Utility Index			0.0411		0.0029	0.0382
Nov-53	S&P 500 Utility Index			0.0274		0.0028	0.0246
Dec-53	S&P 500 Utility Index			0.0064		0.0028	0.0036
Jan-54	S&P 500 Utility Index			0.0327		0.0028	0.0299
Feb-54	S&P 500 Utility Index			0.0117		0.0027	0.0090
Mar-54	S&P 500 Utility Index			0.0270		0.0026	0.0244
Apr-54	S&P 500 Utility Index			0.0121		0.0026	0.0095

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
May-54	S&P 500 Utility Index			0.0257		0.0026	0.0231
Jun-54	S&P 500 Utility Index			0.0096		0.0026	0.0070
Jul-54	S&P 500 Utility Index			0.0495		0.0026	0.0469
Aug-54	S&P 500 Utility Index			-0.0131		0.0026	-0.0157
Sep-54	S&P 500 Utility Index			0.0178		0.0026	0.0152
Oct-54	S&P 500 Utility Index			-0.0368		0.0026	-0.0394
Nov-54	S&P 500 Utility Index			0.0565		0.0026	0.0539
Dec-54	S&P 500 Utility Index			0.0341		0.0026	0.0315
Jan-55	S&P 500 Utility Index			0.0143		0.0026	0.0117
Feb-55	S&P 500 Utility Index			0.0344		0.0026	0.0318
Mar-55	S&P 500 Utility Index			-0.0110		0.0026	-0.0136
Apr-55	S&P 500 Utility Index			0.0202		0.0026	0.0176
May-55	S&P 500 Utility Index			-0.0058		0.0027	-0.0085
Jun-55	S&P 500 Utility Index			0.0211		0.0027	0.0184
Jul-55	S&P 500 Utility Index			0.0466		0.0027	0.0439
Aug-55	S&P 500 Utility Index			0.0052		0.0027	0.0025
Sep-55	S&P 500 Utility Index			-0.0290		0.0027	-0.0317
Oct-55	S&P 500 Utility Index			-0.0085		0.0028	-0.0113
Nov-55	S&P 500 Utility Index			0.0292		0.0028	0.0264
Dec-55	S&P 500 Utility Index			-0.0067		0.0028	-0.0095
Jan-56	S&P 500 Utility Index			0.0030		0.0028	0.0002
Feb-56	S&P 500 Utility Index			0.0178		0.0027	0.0151
Mar-56	S&P 500 Utility Index			0.0394		0.0027	0.0367
Apr-56	S&P 500 Utility Index			-0.0287		0.0028	-0.0315
May-56	S&P 500 Utility Index			-0.0138		0.0029	-0.0167
Jun-56	S&P 500 Utility Index			0.0211		0.0029	0.0182
Jul-56	S&P 500 Utility Index			0.0525		0.0030	0.0495
Aug-56	S&P 500 Utility Index			-0.0259		0.0030	-0.0289
Sep-56	S&P 500 Utility Index			-0.0319		0.0031	-0.0350
Oct-56	S&P 500 Utility Index			0.0063		0.0032	0.0031
Nov-56	S&P 500 Utility Index			0.0028		0.0032	-0.0004
Dec-56	S&P 500 Utility Index			0.0104		0.0033	0.0071
Jan-57	S&P 500 Utility Index			0.0324		0.0033	0.0291
Feb-57	S&P 500 Utility Index			-0.0061		0.0034	-0.0095

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Mar-57	S&P 500 Utility Index			0.0078		0.0034	0.0044
Apr-57	S&P 500 Utility Index			0.0402		0.0033	0.0369
May-57	S&P 500 Utility Index			0.0180		0.0033	0.0147
Jun-57	S&P 500 Utility Index			-0.0418		0.0034	-0.0452
Jul-57	S&P 500 Utility Index			0.0035		0.0035	0.0000
Aug-57	S&P 500 Utility Index			-0.0294		0.0036	-0.0330
Sep-57	S&P 500 Utility Index			-0.0138		0.0038	-0.0176
Oct-57	S&P 500 Utility Index			-0.0074		0.0038	-0.0112
Nov-57	S&P 500 Utility Index			0.0428		0.0039	0.0390
Dec-57	S&P 500 Utility Index			0.0195		0.0036	0.0159
Jan-58	S&P 500 Utility Index			0.0602		0.0033	0.0569
Feb-58	S&P 500 Utility Index			0.0137		0.0033	0.0104
Mar-58	S&P 500 Utility Index			0.0200		0.0034	0.0166
Apr-58	S&P 500 Utility Index			0.0516		0.0033	0.0483
May-58	S&P 500 Utility Index			0.0164		0.0033	0.0131
Jun-58	S&P 500 Utility Index			0.0172		0.0033	0.0139
Jul-58	S&P 500 Utility Index			0.0109		0.0034	0.0075
Aug-58	S&P 500 Utility Index			-0.0067		0.0036	-0.0103
Sep-58	S&P 500 Utility Index			0.0332		0.0038	0.0294
Oct-58	S&P 500 Utility Index			0.0406		0.0038	0.0368
Nov-58	S&P 500 Utility Index			0.0263		0.0037	0.0226
Dec-58	S&P 500 Utility Index			0.0655		0.0037	0.0618
Jan-59	S&P 500 Utility Index			0.0134		0.0038	0.0096
Feb-59	S&P 500 Utility Index			0.0206		0.0038	0.0169
Mar-59	S&P 500 Utility Index			0.0102		0.0037	0.0065
Apr-59	S&P 500 Utility Index			-0.0028		0.0038	-0.0066
May-59	S&P 500 Utility Index			-0.0120		0.0040	-0.0160
Jun-59	S&P 500 Utility Index			-0.0088		0.0041	-0.0129
Jul-59	S&P 500 Utility Index			0.0371		0.0041	0.0330
Aug-59	S&P 500 Utility Index			0.0175		0.0041	0.0134
Sep-59	S&P 500 Utility Index			-0.0393		0.0042	-0.0435
Oct-59	S&P 500 Utility Index			0.0157		0.0041	0.0116
Nov-59	S&P 500 Utility Index			0.0001		0.0041	-0.0040
Dec-59	S&P 500 Utility Index			0.0230		0.0041	0.0189

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jan-60	S&P 500 Utility Index			-0.0108		0.0042	-0.0150
Feb-60	S&P 500 Utility Index			0.0181		0.0042	0.0139
Mar-60	S&P 500 Utility Index			0.0141		0.0041	0.0100
Apr-60	S&P 500 Utility Index			0.0075		0.0040	0.0035
May-60	S&P 500 Utility Index			0.0233		0.0041	0.0193
Jun-60	S&P 500 Utility Index			0.0408		0.0040	0.0368
Jul-60	S&P 500 Utility Index			-0.0100		0.0040	-0.0140
Aug-60	S&P 500 Utility Index			0.0502		0.0039	0.0463
Sep-60	S&P 500 Utility Index			-0.0514		0.0038	-0.0552
Oct-60	S&P 500 Utility Index			-0.0012		0.0038	-0.0050
Nov-60	S&P 500 Utility Index			0.0386		0.0039	0.0347
Dec-60	S&P 500 Utility Index			0.0724		0.0039	0.0685
Jan-61	S&P 500 Utility Index			0.0619		0.0039	0.0580
Feb-61	S&P 500 Utility Index			0.0357		0.0038	0.0319
Mar-61	S&P 500 Utility Index			0.0319		0.0037	0.0282
Apr-61	S&P 500 Utility Index			0.0109		0.0037	0.0072
May-61	S&P 500 Utility Index			0.0133		0.0038	0.0095
Jun-61	S&P 500 Utility Index			-0.0227		0.0038	-0.0265
Jul-61	S&P 500 Utility Index			0.0424		0.0039	0.0385
Aug-61	S&P 500 Utility Index			0.0454		0.0039	0.0415
Sep-61	S&P 500 Utility Index			-0.0067		0.0039	-0.0106
Oct-61	S&P 500 Utility Index			0.0480		0.0039	0.0441
Nov-61	S&P 500 Utility Index			0.0335		0.0039	0.0296
Dec-61	S&P 500 Utility Index			-0.0292		0.0039	-0.0331
Jan-62	S&P 500 Utility Index			-0.0366		0.0039	-0.0405
Feb-62	S&P 500 Utility Index			0.0300		0.0039	0.0261
Mar-62	S&P 500 Utility Index			0.0081		0.0039	0.0042
Apr-62	S&P 500 Utility Index			-0.0353		0.0038	-0.0391
May-62	S&P 500 Utility Index			-0.0912		0.0038	-0.0950
Jun-62	S&P 500 Utility Index			-0.0548		0.0037	-0.0585
Jul-62	S&P 500 Utility Index			0.0689		0.0038	0.0652
Aug-62	S&P 500 Utility Index			0.0271		0.0038	0.0233
Sep-62	S&P 500 Utility Index			-0.0334		0.0038	-0.0372
Oct-62	S&P 500 Utility Index			-0.0014		0.0037	-0.0051

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Nov-62	S&P 500 Utility Index			0.0768		0.0037	0.0731
Dec-62	S&P 500 Utility Index			0.0312		0.0037	0.0275
Jan-63	S&P 500 Utility Index			0.0558		0.0037	0.0521
Feb-63	S&P 500 Utility Index			-0.0206		0.0036	-0.0242
Mar-63	S&P 500 Utility Index			0.0186		0.0036	0.0150
Apr-63	S&P 500 Utility Index			0.0232		0.0036	0.0196
May-63	S&P 500 Utility Index			0.0070		0.0036	0.0034
Jun-63	S&P 500 Utility Index			-0.0123		0.0036	-0.0159
Jul-63	S&P 500 Utility Index			0.0123		0.0037	0.0086
Aug-63	S&P 500 Utility Index			0.0425		0.0037	0.0389
Sep-63	S&P 500 Utility Index			-0.0258		0.0037	-0.0295
Oct-63	S&P 500 Utility Index			-0.0033		0.0037	-0.0070
Nov-63	S&P 500 Utility Index			-0.0082		0.0037	-0.0119
Dec-63	S&P 500 Utility Index			0.0317		0.0037	0.0280
Jan-64	S&P 500 Utility Index			0.0127		0.0037	0.0090
Feb-64	S&P 500 Utility Index			0.0032		0.0038	-0.0006
Mar-64	S&P 500 Utility Index			-0.0035		0.0038	-0.0073
Apr-64	S&P 500 Utility Index			0.0067		0.0038	0.0029
May-64	S&P 500 Utility Index			0.0032		0.0038	-0.0006
Jun-64	S&P 500 Utility Index			0.0234		0.0038	0.0196
Jul-64	S&P 500 Utility Index			0.0471		0.0038	0.0433
Aug-64	S&P 500 Utility Index			0.0031		0.0038	-0.0007
Sep-64	S&P 500 Utility Index			0.0170		0.0038	0.0132
Oct-64	S&P 500 Utility Index			0.0165		0.0038	0.0127
Nov-64	S&P 500 Utility Index			0.0114		0.0038	0.0076
Dec-64	S&P 500 Utility Index			0.0086		0.0038	0.0048
Jan-65	S&P 500 Utility Index			0.0371		0.0038	0.0333
Feb-65	S&P 500 Utility Index			0.0009		0.0038	-0.0029
Mar-65	S&P 500 Utility Index			0.0007		0.0038	-0.0031
Apr-65	S&P 500 Utility Index			0.0109		0.0037	0.0072
May-65	S&P 500 Utility Index			-0.0084		0.0038	-0.0122
Jun-65	S&P 500 Utility Index			-0.0340		0.0038	-0.0378
Jul-65	S&P 500 Utility Index			0.0105		0.0038	0.0067
Aug-65	S&P 500 Utility Index			0.0097		0.0038	0.0059

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Sep-65	S&P 500 Utility Index			0.0194		0.0039	0.0155
Oct-65	S&P 500 Utility Index			0.0129		0.0039	0.0090
Nov-65	S&P 500 Utility Index			-0.0116		0.0039	-0.0155
Dec-65	S&P 500 Utility Index			-0.0008		0.0040	-0.0048
Jan-66	S&P 500 Utility Index			-0.0297		0.0041	-0.0338
Feb-66	S&P 500 Utility Index			-0.0414		0.0041	-0.0455
Mar-66	S&P 500 Utility Index			-0.0045		0.0043	-0.0088
Apr-66	S&P 500 Utility Index			0.0172		0.0044	0.0128
May-66	S&P 500 Utility Index			-0.0296		0.0044	-0.0340
Jun-66	S&P 500 Utility Index			-0.0181		0.0045	-0.0226
Jul-66	S&P 500 Utility Index			0.0009		0.0045	-0.0036
Aug-66	S&P 500 Utility Index			-0.0875		0.0047	-0.0922
Sep-66	S&P 500 Utility Index			0.0475		0.0048	0.0427
Oct-66	S&P 500 Utility Index			0.0970		0.0048	0.0922
Nov-66	S&P 500 Utility Index			-0.0076		0.0047	-0.0123
Dec-66	S&P 500 Utility Index			0.0221		0.0047	0.0174
Jan-67	S&P 500 Utility Index			0.0271		0.0046	0.0226
Feb-67	S&P 500 Utility Index			-0.0157		0.0044	-0.0201
Mar-67	S&P 500 Utility Index			0.0197		0.0045	0.0152
Apr-67	S&P 500 Utility Index			0.0202		0.0045	0.0157
May-67	S&P 500 Utility Index			-0.0506		0.0047	-0.0553
Jun-67	S&P 500 Utility Index			-0.0131		0.0049	-0.0180
Jul-67	S&P 500 Utility Index			0.0204		0.0050	0.0155
Aug-67	S&P 500 Utility Index			-0.0065		0.0050	-0.0115
Sep-67	S&P 500 Utility Index			-0.0037		0.0050	-0.0087
Oct-67	S&P 500 Utility Index			-0.0572		0.0052	-0.0624
Nov-67	S&P 500 Utility Index			0.0293		0.0054	0.0239
Dec-67	S&P 500 Utility Index			0.0286		0.0056	0.0230
Jan-68	S&P 500 Utility Index			0.0082		0.0055	0.0028
Feb-68	S&P 500 Utility Index			-0.0233		0.0053	-0.0286
Mar-68	S&P 500 Utility Index			-0.0399		0.0053	-0.0452
Apr-68	S&P 500 Utility Index			0.0275		0.0055	0.0220
May-68	S&P 500 Utility Index			-0.0062		0.0055	-0.0117
Jun-68	S&P 500 Utility Index			0.0807		0.0055	0.0752

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jul-68	S&P 500 Utility Index			-0.0070		0.0054	-0.0124
Aug-68	S&P 500 Utility Index			0.0004		0.0052	-0.0048
Sep-68	S&P 500 Utility Index			0.0100		0.0052	0.0048
Oct-68	S&P 500 Utility Index			0.0086		0.0053	0.0033
Nov-68	S&P 500 Utility Index			0.0781		0.0055	0.0726
Dec-68	S&P 500 Utility Index			-0.0309		0.0057	-0.0366
Jan-69	S&P 500 Utility Index			0.0169		0.0059	0.0110
Feb-69	S&P 500 Utility Index			-0.0532		0.0059	-0.0591
Mar-69	S&P 500 Utility Index			-0.0096		0.0061	-0.0157
Apr-69	S&P 500 Utility Index			0.0139		0.0061	0.0078
May-69	S&P 500 Utility Index			-0.0006		0.0060	-0.0066
Jun-69	S&P 500 Utility Index			-0.0516		0.0062	-0.0578
Jul-69	S&P 500 Utility Index			-0.0363		0.0063	-0.0426
Aug-69	S&P 500 Utility Index			-0.0114		0.0062	-0.0176
Sep-69	S&P 500 Utility Index			-0.0372		0.0064	-0.0436
Oct-69	S&P 500 Utility Index			0.0798		0.0067	0.0731
Nov-69	S&P 500 Utility Index			-0.0588		0.0067	-0.0655
Dec-69	S&P 500 Utility Index			-0.0097		0.0072	-0.0169
Jan-70	S&P 500 Utility Index			-0.0453		0.0072	-0.0525
Feb-70	S&P 500 Utility Index			0.1053		0.0071	0.0982
Mar-70	S&P 500 Utility Index			0.0232		0.0069	0.0163
Apr-70	S&P 500 Utility Index			-0.0929		0.0069	-0.0998
May-70	S&P 500 Utility Index			-0.0515		0.0072	-0.0587
Jun-70	S&P 500 Utility Index			-0.0582		0.0075	-0.0657
Jul-70	S&P 500 Utility Index			0.0973		0.0076	0.0898
Aug-70	S&P 500 Utility Index			0.0581		0.0074	0.0507
Sep-70	S&P 500 Utility Index			-0.0114		0.0074	-0.0188
Oct-70	S&P 500 Utility Index			-0.0149		0.0073	-0.0222
Nov-70	S&P 500 Utility Index			0.0975		0.0073	0.0902
Dec-70	S&P 500 Utility Index			0.0735		0.0071	0.0664
Jan-71	S&P 500 Utility Index			0.0257		0.0068	0.0189
Feb-71	S&P 500 Utility Index			-0.0277		0.0066	-0.0343
Mar-71	S&P 500 Utility Index			0.0331		0.0067	0.0264
Apr-71	S&P 500 Utility Index			-0.0349		0.0067	-0.0416

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
May-71	S&P 500 Utility Index			-0.0351		0.0070	-0.0421
Jun-71	S&P 500 Utility Index			0.0398		0.0070	0.0328
Jul-71	S&P 500 Utility Index			-0.0225		0.0070	-0.0295
Aug-71	S&P 500 Utility Index			-0.0247		0.0070	-0.0317
Sep-71	S&P 500 Utility Index			-0.0146		0.0068	-0.0214
Oct-71	S&P 500 Utility Index			0.0170		0.0068	0.0103
Nov-71	S&P 500 Utility Index			-0.0055		0.0066	-0.0121
Dec-71	S&P 500 Utility Index			0.0806		0.0066	0.0740
Jan-72	S&P 500 Utility Index			-0.0074		0.0065	-0.0139
Feb-72	S&P 500 Utility Index			-0.0240		0.0065	-0.0305
Mar-72	S&P 500 Utility Index			-0.0036		0.0065	-0.0101
Apr-72	S&P 500 Utility Index			-0.0277		0.0065	-0.0342
May-72	S&P 500 Utility Index			-0.0017		0.0065	-0.0082
Jun-72	S&P 500 Utility Index			-0.0210		0.0065	-0.0275
Jul-72	S&P 500 Utility Index			-0.0014		0.0065	-0.0079
Aug-72	S&P 500 Utility Index			0.0574		0.0064	0.0510
Sep-72	S&P 500 Utility Index			0.0027		0.0063	-0.0036
Oct-72	S&P 500 Utility Index			0.0651		0.0064	0.0587
Nov-72	S&P 500 Utility Index			0.0639		0.0063	0.0576
Dec-72	S&P 500 Utility Index			-0.0174		0.0062	-0.0236
Jan-73	S&P 500 Utility Index			-0.0439		0.0063	-0.0502
Feb-73	S&P 500 Utility Index			-0.0234		0.0064	-0.0298
Mar-73	S&P 500 Utility Index			-0.0135		0.0064	-0.0199
Apr-73	S&P 500 Utility Index			-0.0049		0.0064	-0.0113
May-73	S&P 500 Utility Index			0.0067		0.0064	0.0003
Jun-73	S&P 500 Utility Index			-0.0167		0.0064	-0.0231
Jul-73	S&P 500 Utility Index			-0.0199		0.0065	-0.0264
Aug-73	S&P 500 Utility Index			-0.0284		0.0067	-0.0351
Sep-73	S&P 500 Utility Index			0.0771		0.0067	0.0704
Oct-73	S&P 500 Utility Index			-0.0388		0.0067	-0.0455
Nov-73	S&P 500 Utility Index			-0.1172		0.0068	-0.1240
Dec-73	S&P 500 Utility Index			0.0375		0.0069	0.0306
Jan-74	S&P 500 Utility Index			0.0418		0.0070	0.0348
Feb-74	S&P 500 Utility Index			0.0060		0.0070	-0.0010

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Mar-74	S&P 500 Utility Index			-0.0389		0.0071	-0.0460
Apr-74	S&P 500 Utility Index			-0.1296		0.0073	-0.1369
May-74	S&P 500 Utility Index			-0.0484		0.0075	-0.0559
Jun-74	S&P 500 Utility Index			-0.0570		0.0078	-0.0648
Jul-74	S&P 500 Utility Index			-0.0089		0.0081	-0.0170
Aug-74	S&P 500 Utility Index			-0.0871		0.0084	-0.0955
Sep-74	S&P 500 Utility Index			-0.0086		0.0087	-0.0173
Oct-74	S&P 500 Utility Index			0.1199		0.0090	0.1109
Nov-74	S&P 500 Utility Index			-0.0119		0.0087	-0.0206
Dec-74	S&P 500 Utility Index			0.0044		0.0086	-0.0042
Jan-75	S&P 500 Utility Index			0.1897		0.0086	0.1811
Feb-75	S&P 500 Utility Index			0.0143		0.0083	0.0060
Mar-75	S&P 500 Utility Index			-0.0216		0.0081	-0.0297
Apr-75	S&P 500 Utility Index			-0.0140		0.0084	-0.0224
May-75	S&P 500 Utility Index			0.0866		0.0085	0.0781
Jun-75	S&P 500 Utility Index			0.1067		0.0084	0.0983
Jul-75	S&P 500 Utility Index			-0.0510		0.0083	-0.0593
Aug-75	S&P 500 Utility Index			-0.0212		0.0084	-0.0296
Sep-75	S&P 500 Utility Index			-0.0049		0.0085	-0.0134
Oct-75	S&P 500 Utility Index			0.0708		0.0085	0.0623
Nov-75	S&P 500 Utility Index			0.0350		0.0084	0.0266
Dec-75	S&P 500 Utility Index			0.0077		0.0084	-0.0007
Jan-76	S&P 500 Utility Index			0.0894		0.0083	0.0812
Feb-76	S&P 500 Utility Index			-0.0356		0.0081	-0.0437
Mar-76	S&P 500 Utility Index			0.0100		0.0081	0.0019
Apr-76	S&P 500 Utility Index			0.0037		0.0079	-0.0042
May-76	S&P 500 Utility Index			-0.0139		0.0080	-0.0219
Jun-76	S&P 500 Utility Index			0.0337		0.0080	0.0258
Jul-76	S&P 500 Utility Index			0.0341		0.0078	0.0263
Aug-76	S&P 500 Utility Index			0.0383		0.0076	0.0307
Sep-76	S&P 500 Utility Index			0.0381		0.0074	0.0307
Oct-76	S&P 500 Utility Index			-0.0021		0.0073	-0.0094
Nov-76	S&P 500 Utility Index			0.0268		0.0073	0.0195
Dec-76	S&P 500 Utility Index			0.0631		0.0072	0.0559

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jan-77	S&P 500 Utility Index			0.0035		0.0072	-0.0037
Feb-77	S&P 500 Utility Index			-0.0372		0.0072	-0.0444
Mar-77	S&P 500 Utility Index			0.0102		0.0073	0.0030
Apr-77	S&P 500 Utility Index			0.0209		0.0073	0.0136
May-77	S&P 500 Utility Index			0.0211		0.0073	0.0138
Jun-77	S&P 500 Utility Index			0.0531		0.0072	0.0460
Jul-77	S&P 500 Utility Index			0.0164		0.0071	0.0093
Aug-77	S&P 500 Utility Index			-0.0353		0.0071	-0.0424
Sep-77	S&P 500 Utility Index			0.0247		0.0071	0.0177
Oct-77	S&P 500 Utility Index			-0.0296		0.0072	-0.0368
Nov-77	S&P 500 Utility Index			0.0381		0.0072	0.0309
Dec-77	S&P 500 Utility Index			0.0019		0.0072	-0.0053
Jan-78	S&P 500 Utility Index			-0.0533		0.0074	-0.0607
Feb-78	S&P 500 Utility Index			-0.0062		0.0075	-0.0137
Mar-78	S&P 500 Utility Index			0.0309		0.0075	0.0234
Apr-78	S&P 500 Utility Index			0.0106		0.0076	0.0030
May-78	S&P 500 Utility Index			0.0043		0.0077	-0.0034
Jun-78	S&P 500 Utility Index			0.0036		0.0078	-0.0042
Jul-78	S&P 500 Utility Index			0.0316		0.0079	0.0237
Aug-78	S&P 500 Utility Index			-0.0003		0.0078	-0.0081
Sep-78	S&P 500 Utility Index			-0.0056		0.0077	-0.0133
Oct-78	S&P 500 Utility Index			-0.0684		0.0079	-0.0763
Nov-78	S&P 500 Utility Index			0.0356		0.0081	0.0275
Dec-78	S&P 500 Utility Index			-0.0149		0.0081	-0.0230
Jan-79	S&P 500 Utility Index			0.0692		0.0083	0.0610
Feb-79	S&P 500 Utility Index			-0.0212		0.0082	-0.0294
Mar-79	S&P 500 Utility Index			0.0196		0.0084	0.0112
Apr-79	S&P 500 Utility Index			-0.0249		0.0084	-0.0333
May-79	S&P 500 Utility Index			0.0150		0.0086	0.0064
Jun-79	S&P 500 Utility Index			0.0386		0.0085	0.0302
Jul-79	S&P 500 Utility Index			0.0342		0.0083	0.0259
Aug-79	S&P 500 Utility Index			0.0102		0.0085	0.0018
Sep-79	S&P 500 Utility Index			-0.0177		0.0086	-0.0263
Oct-79	S&P 500 Utility Index			-0.0505		0.0095	-0.0600

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Nov-79	S&P 500 Utility Index			0.0607		0.0099	0.0508
Dec-79	S&P 500 Utility Index			0.0022		0.0101	-0.0079
Jan-80	S&P 500 Utility Index			-0.0023		0.0102	-0.0125
Feb-80	S&P 500 Utility Index			-0.0247		0.0110	-0.0357
Mar-80	S&P 500 Utility Index			-0.0529		0.0122	-0.0651
Apr-80	S&P 500 Utility Index			0.1186		0.0119	0.1067
May-80	S&P 500 Utility Index			0.0323		0.0106	0.0217
Jun-80	S&P 500 Utility Index			0.0337		0.0103	0.0234
Jul-80	S&P 500 Utility Index			-0.0041		0.0101	-0.0142
Aug-80	S&P 500 Utility Index			-0.0139		0.0106	-0.0245
Sep-80	S&P 500 Utility Index			-0.0114		0.0111	-0.0225
Oct-80	S&P 500 Utility Index			0.0274		0.0113	0.0161
Nov-80	S&P 500 Utility Index			0.0501		0.0117	0.0384
Dec-80	S&P 500 Utility Index			-0.0014		0.0122	-0.0136
Jan-81	S&P 500 Utility Index			-0.0186		0.0119	-0.0305
Feb-81	S&P 500 Utility Index			-0.0224		0.0122	-0.0346
Mar-81	S&P 500 Utility Index			0.0420		0.0126	0.0294
Apr-81	S&P 500 Utility Index			-0.0096		0.0127	-0.0223
May-81	S&P 500 Utility Index			0.0291		0.0134	0.0157
Jun-81	S&P 500 Utility Index			0.0272		0.0132	0.0140
Jul-81	S&P 500 Utility Index			0.0341		0.0134	0.0207
Aug-81	S&P 500 Utility Index			-0.0024		0.0137	-0.0161
Sep-81	S&P 500 Utility Index			-0.0409		0.0142	-0.0551
Oct-81	S&P 500 Utility Index			0.0617		0.0144	0.0473
Nov-81	S&P 500 Utility Index			0.0481		0.0137	0.0344
Dec-81	S&P 500 Utility Index			-0.0305		0.0135	-0.0440
Jan-82	S&P 500 Utility Index			0.0037		0.0140	-0.0103
Feb-82	S&P 500 Utility Index			-0.0035		0.0141	-0.0176
Mar-82	S&P 500 Utility Index			0.0168		0.0137	0.0031
Apr-82	S&P 500 Utility Index			0.0548		0.0137	0.0411
May-82	S&P 500 Utility Index			-0.0187		0.0134	-0.0321
Jun-82	S&P 500 Utility Index			-0.0161		0.0136	-0.0297
Jul-82	S&P 500 Utility Index			-0.0198		0.0137	-0.0335
Aug-82	S&P 500 Utility Index			0.1211		0.0133	0.1078

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Sep-82	S&P 500 Utility Index			0.0052		0.0129	-0.0077
Oct-82	S&P 500 Utility Index			0.0659		0.0125	0.0534
Nov-82	S&P 500 Utility Index			0.0017		0.0121	-0.0104
Dec-82	S&P 500 Utility Index			0.0360		0.0120	0.0240
Jan-83	S&P 500 Utility Index			0.0372		0.0119	0.0253
Feb-83	S&P 500 Utility Index			-0.0005		0.0119	-0.0124
Mar-83	S&P 500 Utility Index			0.0017		0.0117	-0.0100
Apr-83	S&P 500 Utility Index			0.0571		0.0114	0.0457
May-83	S&P 500 Utility Index			0.0124		0.0112	0.0012
Jun-83	S&P 500 Utility Index			-0.0123		0.0114	-0.0237
Jul-83	S&P 500 Utility Index			0.0339		0.0113	0.0226
Aug-83	S&P 500 Utility Index			0.0040		0.0113	-0.0073
Sep-83	S&P 500 Utility Index			0.0445		0.0112	0.0333
Oct-83	S&P 500 Utility Index			0.0532		0.0110	0.0422
Nov-83	S&P 500 Utility Index			-0.0204		0.0112	-0.0316
Dec-83	S&P 500 Utility Index			-0.0226		0.0113	-0.0339
Jan-84	S&P 500 Utility Index			0.0482		0.0112	0.0370
Feb-84	S&P 500 Utility Index			-0.0411		0.0112	-0.0523
Mar-84	S&P 500 Utility Index			-0.0055		0.0115	-0.0170
Apr-84	S&P 500 Utility Index			0.0159		0.0118	0.0041
May-84	S&P 500 Utility Index			-0.0230		0.0124	-0.0354
Jun-84	S&P 500 Utility Index			0.0069		0.0126	-0.0057
Jul-84	S&P 500 Utility Index			0.0433		0.0124	0.0309
Aug-84	S&P 500 Utility Index			0.0646		0.0120	0.0526
Sep-84	S&P 500 Utility Index			0.0438		0.0118	0.0320
Oct-84	S&P 500 Utility Index			0.0272		0.0115	0.0157
Nov-84	S&P 500 Utility Index			0.0270		0.0110	0.0160
Dec-84	S&P 500 Utility Index			0.0316		0.0109	0.0207
Jan-85	S&P 500 Utility Index			0.0235		0.0108	0.0127
Feb-85	S&P 500 Utility Index			0.0193		0.0109	0.0084
Mar-85	S&P 500 Utility Index			0.0362		0.0115	0.0247
Apr-85	S&P 500 Utility Index			0.0207		0.0113	0.0094
May-85	S&P 500 Utility Index			0.0606		0.0110	0.0496
Jun-85	S&P 500 Utility Index			0.0279		0.0101	0.0178

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jul-85	S&P 500 Utility Index			-0.0427		0.0101	-0.0528
Aug-85	S&P 500 Utility Index			0.0181		0.0101	0.0080
Sep-85	S&P 500 Utility Index			-0.0521		0.0101	-0.0622
Oct-85	S&P 500 Utility Index			0.0638		0.0100	0.0538
Nov-85	S&P 500 Utility Index			0.0522		0.0096	0.0426
Dec-85	S&P 500 Utility Index			0.0694		0.0092	0.0602
Jan-86	S&P 500 Utility Index			0.0293		0.0090	0.0203
Feb-86	S&P 500 Utility Index			0.0623		0.0086	0.0537
Mar-86	S&P 500 Utility Index			0.0514		0.0079	0.0435
Apr-86	S&P 500 Utility Index			-0.0333		0.0076	-0.0409
May-86	S&P 500 Utility Index			0.0525		0.0080	0.0445
Jun-86	S&P 500 Utility Index			0.0597		0.0080	0.0517
Jul-86	S&P 500 Utility Index			0.0283		0.0078	0.0205
Aug-86	S&P 500 Utility Index			0.0884		0.0078	0.0806
Sep-86	S&P 500 Utility Index			-0.1137		0.0079	-0.1216
Oct-86	S&P 500 Utility Index			0.0505		0.0079	0.0426
Nov-86	S&P 500 Utility Index			0.0211		0.0077	0.0134
Dec-86	S&P 500 Utility Index			-0.0254		0.0076	-0.0330
Jan-87	S&P 500 Utility Index			0.0984		0.0075	0.0909
Feb-87	S&P 500 Utility Index			-0.0301		0.0075	-0.0376
Mar-87	S&P 500 Utility Index			-0.0189		0.0074	-0.0263
Apr-87	S&P 500 Utility Index			-0.0414		0.0078	-0.0492
May-87	S&P 500 Utility Index			-0.0064		0.0082	-0.0146
Jun-87	S&P 500 Utility Index			0.0439		0.0083	0.0356
Jul-87	S&P 500 Utility Index			-0.0025		0.0084	-0.0109
Aug-87	S&P 500 Utility Index			0.0527		0.0087	0.0440
Sep-87	S&P 500 Utility Index			0.0021		0.0093	-0.0072
Oct-87	S&P 500 Utility Index			-0.0705		0.0095	-0.0800
Nov-87	S&P 500 Utility Index			-0.0555		0.0090	-0.0645
Dec-87	S&P 500 Utility Index			0.0108		0.0091	0.0017
Jan-88	S&P 500 Utility Index			0.1153		0.0090	0.1063
Feb-88	S&P 500 Utility Index			-0.0175		0.0084	-0.0259
Mar-88	S&P 500 Utility Index			-0.0527		0.0084	-0.0611
Apr-88	S&P 500 Utility Index			0.0019		0.0088	-0.0069

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
May-88	S&P 500 Utility Index			0.0460		0.0090	0.0370
Jun-88	S&P 500 Utility Index			0.0315		0.0090	0.0225
Jul-88	S&P 500 Utility Index			0.0017		0.0092	-0.0075
Aug-88	S&P 500 Utility Index			-0.0137		0.0093	-0.0230
Sep-88	S&P 500 Utility Index			0.0413		0.0089	0.0324
Oct-88	S&P 500 Utility Index			0.0262		0.0083	0.0179
Nov-88	S&P 500 Utility Index			-0.0079		0.0082	-0.0161
Dec-88	S&P 500 Utility Index			0.0063		0.0084	-0.0021
Jan-89	S&P 500 Utility Index			0.0571		0.0084	0.0487
Feb-89	S&P 500 Utility Index			-0.0215		0.0084	-0.0299
Mar-89	S&P 500 Utility Index			0.0269		0.0085	0.0184
Apr-89	S&P 500 Utility Index			0.0634		0.0085	0.0549
May-89	S&P 500 Utility Index			0.0580		0.0083	0.0497
Jun-89	S&P 500 Utility Index			0.0161		0.0080	0.0081
Jul-89	S&P 500 Utility Index			0.0804		0.0079	0.0725
Aug-89	S&P 500 Utility Index			-0.0057		0.0079	-0.0136
Sep-89	S&P 500 Utility Index			0.0170		0.0080	0.0090
Oct-89	S&P 500 Utility Index			0.0045		0.0079	-0.0034
Nov-89	S&P 500 Utility Index			0.0336		0.0079	0.0257
Dec-89	S&P 500 Utility Index			0.0731		0.0079	0.0652
Jan-90	S&P 500 Utility Index			-0.0809		0.0080	-0.0889
Feb-90	S&P 500 Utility Index			-0.0109		0.0081	-0.0190
Mar-90	S&P 500 Utility Index			0.0187		0.0082	0.0105
Apr-90	S&P 500 Utility Index			-0.0385		0.0083	-0.0468
May-90	S&P 500 Utility Index			0.0682		0.0083	0.0599
Jun-90	S&P 500 Utility Index			-0.0211		0.0082	-0.0293
Jul-90	S&P 500 Utility Index			-0.0032		0.0081	-0.0113
Aug-90	S&P 500 Utility Index			-0.0792		0.0082	-0.0874
Sep-90	S&P 500 Utility Index			0.0411		0.0084	0.0327
Oct-90	S&P 500 Utility Index			0.0653		0.0084	0.0569
Nov-90	S&P 500 Utility Index			0.0193		0.0083	0.0110
Dec-90	S&P 500 Utility Index			0.0086		0.0081	0.0005
Jan-91	S&P 500 Utility Index			-0.0301		0.0081	-0.0382
Feb-91	S&P 500 Utility Index			0.0349		0.0079	0.0270

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Mar-91	S&P 500 Utility Index			0.0198		0.0080	0.0118
Apr-91	S&P 500 Utility Index			-0.0162		0.0079	-0.0241
May-91	S&P 500 Utility Index			-0.0130		0.0079	-0.0209
Jun-91	S&P 500 Utility Index			-0.0139		0.0080	-0.0219
Jul-91	S&P 500 Utility Index			0.0307		0.0080	0.0227
Aug-91	S&P 500 Utility Index			0.0258		0.0078	0.0180
Sep-91	S&P 500 Utility Index			0.0202		0.0076	0.0126
Oct-91	S&P 500 Utility Index			0.0200		0.0076	0.0124
Nov-91	S&P 500 Utility Index			-0.0098		0.0075	-0.0173
Dec-91	S&P 500 Utility Index			0.0733		0.0074	0.0659
Jan-92	S&P 500 Utility Index			-0.0536		0.0074	-0.0610
Feb-92	S&P 500 Utility Index			-0.0273		0.0074	-0.0347
Mar-92	S&P 500 Utility Index			-0.0143		0.0075	-0.0218
Apr-92	S&P 500 Utility Index			0.0645		0.0074	0.0571
May-92	S&P 500 Utility Index			-0.0015		0.0074	-0.0089
Jun-92	S&P 500 Utility Index			0.0141		0.0073	0.0068
Jul-92	S&P 500 Utility Index			0.0790		0.0071	0.0719
Aug-92	S&P 500 Utility Index			-0.0074		0.0070	-0.0144
Sep-92	S&P 500 Utility Index			0.0073		0.0070	0.0003
Oct-92	S&P 500 Utility Index			-0.0094		0.0071	-0.0165
Nov-92	S&P 500 Utility Index			-0.0015		0.0072	-0.0087
Dec-92	S&P 500 Utility Index			0.0358		0.0070	0.0288
Jan-93	S&P 500 Utility Index			0.0157		0.0069	0.0088
Feb-93	S&P 500 Utility Index			0.0721		0.0067	0.0654
Mar-93	S&P 500 Utility Index			0.0180		0.0066	0.0114
Apr-93	S&P 500 Utility Index			-0.0027		0.0065	-0.0092
May-93	S&P 500 Utility Index			-0.0191		0.0065	-0.0256
Jun-93	S&P 500 Utility Index			0.0463		0.0065	0.0398
Jul-93	S&P 500 Utility Index			0.0226		0.0063	0.0163
Aug-93	S&P 500 Utility Index			0.0484		0.0061	0.0423
Sep-93	S&P 500 Utility Index			-0.0020		0.0059	-0.0079
Oct-93	S&P 500 Utility Index			-0.0021		0.0059	-0.0080
Nov-93	S&P 500 Utility Index			-0.0507		0.0061	-0.0568
Dec-93	S&P 500 Utility Index			-0.0053		0.0061	-0.0114

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jan-94	S&P 500 Utility Index			0.0072		0.0061	0.0011
Feb-94	S&P 500 Utility Index			-0.0567		0.0062	-0.0629
Mar-94	S&P 500 Utility Index			-0.0338		0.0065	-0.0403
Apr-94	S&P 500 Utility Index			0.0246		0.0069	0.0177
May-94	S&P 500 Utility Index			-0.0268		0.0069	-0.0337
Jun-94	S&P 500 Utility Index			0.0021		0.0069	-0.0048
Jul-94	S&P 500 Utility Index			0.0336		0.0071	0.0265
Aug-94	S&P 500 Utility Index			-0.0028		0.0070	-0.0098
Sep-94	S&P 500 Utility Index			-0.0254		0.0072	-0.0326
Oct-94	S&P 500 Utility Index			0.0086		0.0074	0.0012
Nov-94	S&P 500 Utility Index			-0.0146		0.0075	-0.0221
Dec-94	S&P 500 Utility Index			0.0052		0.0073	-0.0021
Jan-95	S&P 500 Utility Index			0.0779		0.0073	0.0706
Feb-95	S&P 500 Utility Index			-0.0015		0.0071	-0.0086
Mar-95	S&P 500 Utility Index			-0.0060		0.0070	-0.0130
Apr-95	S&P 500 Utility Index			0.0365		0.0069	0.0296
May-95	S&P 500 Utility Index			0.0316		0.0066	0.0250
Jun-95	S&P 500 Utility Index			0.0047		0.0063	-0.0016
Jul-95	S&P 500 Utility Index			0.0255		0.0064	0.0191
Aug-95	S&P 500 Utility Index			0.0202		0.0065	0.0137
Sep-95	S&P 500 Utility Index			0.0638		0.0064	0.0575
Oct-95	S&P 500 Utility Index			0.0238		0.0062	0.0176
Nov-95	S&P 500 Utility Index			0.0136		0.0062	0.0074
Dec-95	S&P 500 Utility Index			0.0708		0.0060	0.0648
Jan-96	S&P 500 Utility Index			0.0129		0.0060	0.0069
Feb-96	S&P 500 Utility Index			-0.0395		0.0061	-0.0456
Mar-96	S&P 500 Utility Index			-0.0203		0.0064	-0.0267
Apr-96	S&P 500 Utility Index			0.0110		0.0066	0.0044
May-96	S&P 500 Utility Index			-0.0025		0.0067	-0.0092
Jun-96	S&P 500 Utility Index			0.0416		0.0067	0.0349
Jul-96	S&P 500 Utility Index			-0.0628		0.0067	-0.0695
Aug-96	S&P 500 Utility Index			0.0213		0.0065	0.0148
Sep-96	S&P 500 Utility Index			0.0095		0.0067	0.0028
Oct-96	S&P 500 Utility Index			0.0508		0.0065	0.0443

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Nov-96	S&P 500 Utility Index			0.0211		0.0063	0.0148
Dec-96	S&P 500 Utility Index			-0.0060		0.0063	-0.0123
Jan-97	S&P 500 Utility Index			0.0066		0.0065	0.0001
Feb-97	S&P 500 Utility Index			-0.0095		0.0064	-0.0159
Mar-97	S&P 500 Utility Index			-0.0301		0.0066	-0.0367
Apr-97	S&P 500 Utility Index			-0.0150		0.0067	-0.0217
May-97	S&P 500 Utility Index			0.0423		0.0066	0.0357
Jun-97	S&P 500 Utility Index			0.0314		0.0064	0.0250
Jul-97	S&P 500 Utility Index			0.0230		0.0062	0.0168
Aug-97	S&P 500 Utility Index			-0.0183		0.0062	-0.0245
Sep-97	S&P 500 Utility Index			0.0433		0.0062	0.0371
Oct-97	S&P 500 Utility Index			0.0098		0.0061	0.0037
Nov-97	S&P 500 Utility Index			0.0707		0.0060	0.0647
Dec-97	S&P 500 Utility Index			0.0752		0.0060	0.0692
Jan-98	S&P 500 Utility Index			-0.0395		0.0059	-0.0454
Feb-98	S&P 500 Utility Index			0.0341		0.0059	0.0282
Mar-98	S&P 500 Utility Index			0.0642		0.0060	0.0582
Apr-98	S&P 500 Utility Index			-0.0193		0.0060	-0.0253
May-98	S&P 500 Utility Index			-0.0050		0.0060	-0.0110
Jun-98	S&P 500 Utility Index			0.0369		0.0059	0.0310
Jul-98	S&P 500 Utility Index			-0.0493		0.0059	-0.0552
Aug-98	S&P 500 Utility Index			0.0161		0.0058	0.0103
Sep-98	S&P 500 Utility Index			0.0835		0.0058	0.0777
Oct-98	S&P 500 Utility Index			-0.0166		0.0058	-0.0224
Nov-98	S&P 500 Utility Index			0.0134		0.0059	0.0075
Dec-98	S&P 500 Utility Index			0.0295		0.0058	0.0237
Jan-99	S&P 500 Utility Index			-0.0451		0.0058	-0.0509
Feb-99	S&P 500 Utility Index			-0.0364		0.0059	-0.0423
Mar-99	S&P 500 Utility Index			-0.0148		0.0060	-0.0208
Apr-99	S&P 500 Utility Index			0.0884		0.0060	0.0824
May-99	S&P 500 Utility Index			0.0609		0.0062	0.0547
Jun-99	S&P 500 Utility Index			-0.0332		0.0064	-0.0396
Jul-99	S&P 500 Utility Index			-0.0114		0.0064	-0.0178
Aug-99	S&P 500 Utility Index			0.0117		0.0066	0.0051

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Sep-99	S&P 500 Utility Index			-0.0480		0.0066	-0.0546
Oct-99	S&P 500 Utility Index			0.0157		0.0067	0.0090
Nov-99	S&P 500 Utility Index			-0.0773		0.0066	-0.0839
Dec-99	S&P 500 Utility Index			0.0093		0.0068	0.0025
Jan-00	S&P 500 Utility Index			0.1085		0.0070	0.1015
Feb-00	S&P 500 Utility Index			-0.0578		0.0069	-0.0647
Mar-00	S&P 500 Utility Index			0.0349		0.0069	0.0280
Apr-00	S&P 500 Utility Index			0.0794		0.0069	0.0725
May-00	S&P 500 Utility Index			0.0486		0.0072	0.0414
Jun-00	S&P 500 Utility Index			-0.0575		0.0070	-0.0645
Jul-00	S&P 500 Utility Index			0.0677		0.0069	0.0608
Aug-00	S&P 500 Utility Index			0.1372		0.0068	0.1304
Sep-00	S&P 500 Utility Index			0.0915		0.0069	0.0846
Oct-00	S&P 500 Utility Index			-0.0357		0.0068	-0.0425
Nov-00	S&P 500 Utility Index			-0.0132		0.0068	-0.0200
Dec-00	S&P 500 Utility Index			0.0982		0.0065	0.0917
Jan-01	S&P 500 Utility Index			-0.0967		0.0065	-0.1032
Feb-01	S&P 500 Utility Index			0.0353		0.0064	0.0289
Mar-01	S&P 500 Utility Index			-0.0063		0.0064	-0.0127
Apr-01	S&P 500 Utility Index			0.0605		0.0066	0.0539
May-01	S&P 500 Utility Index			-0.0343		0.0067	-0.0410
Jun-01	S&P 500 Utility Index			-0.0791		0.0065	-0.0856
Jul-01	S&P 500 Utility Index			-0.0448		0.0065	-0.0513
Aug-01	S&P 500 Utility Index			-0.0290		0.0063	-0.0353
Sep-01	S&P 500 Utility Index			-0.1152		0.0064	-0.1216
Oct-01	S&P 500 Utility Index			-0.0017		0.0064	-0.0081
Nov-01	S&P 500 Utility Index			-0.0552		0.0063	-0.0615
Dec-01	S&P 500 Utility Index			0.0260		0.0065	0.0195
Jan-02	S&P 500 Utility Index			-0.0565		0.0064	-0.0629
Feb-02	S&P 500 Utility Index			-0.0235		0.0063	-0.0298
Mar-02	S&P 500 Utility Index			0.1223		0.0065	0.1158
Apr-02	S&P 500 Utility Index			-0.0171		0.0063	-0.0234
May-02	S&P 500 Utility Index			-0.0902		0.0063	-0.0965
Jun-02	S&P 500 Utility Index			-0.0710		0.0062	-0.0772

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jul-02	S&P 500 Utility Index			-0.1380		0.0061	-0.1441
Aug-02	S&P 500 Utility Index			0.0350		0.0060	0.0290
Sep-02	S&P 500 Utility Index			-0.1283		0.0059	-0.1342
Oct-02	S&P 500 Utility Index			-0.0173		0.0060	-0.0233
Nov-02	S&P 500 Utility Index			0.0249		0.0060	0.0189
Dec-02	S&P 500 Utility Index			0.0416		0.0059	0.0357
Jan-03	S&P 500 Utility Index			-0.0292		0.0059	-0.0351
Feb-03	S&P 500 Utility Index			-0.0490		0.0058	-0.0548
Mar-03	S&P 500 Utility Index			0.0505		0.0057	0.0448
Apr-03	S&P 500 Utility Index			0.0885		0.0055	0.0830
May-03	S&P 500 Utility Index			0.1021		0.0053	0.0968
Jun-03	S&P 500 Utility Index			0.0119		0.0052	0.0067
Jul-03	S&P 500 Utility Index			-0.0650		0.0055	-0.0705
Aug-03	S&P 500 Utility Index			0.0175		0.0057	0.0118
Sep-03	S&P 500 Utility Index			0.0457		0.0055	0.0402
Oct-03	S&P 500 Utility Index			0.0112		0.0054	0.0059
Nov-03	S&P 500 Utility Index			-0.0005		0.0053	-0.0058
Dec-03	S&P 500 Utility Index			0.0675		0.0052	0.0623
Jan-04	S&P 500 Utility Index			0.0216		0.0051	0.0165
Feb-04	S&P 500 Utility Index			0.0181		0.0051	0.0130
Mar-04	S&P 500 Utility Index			0.0104		0.0050	0.0054
Apr-04	S&P 500 Utility Index			-0.0362		0.0053	-0.0415
May-04	S&P 500 Utility Index			0.0079		0.0055	0.0024
Jun-04	S&P 500 Utility Index			0.0155		0.0054	0.0101
Jul-04	S&P 500 Utility Index			0.0173		0.0052	0.0121
Aug-04	S&P 500 Utility Index			0.0393		0.0051	0.0342
Sep-04	S&P 500 Utility Index			0.0091		0.0050	0.0041
Oct-04	S&P 500 Utility Index			0.0495		0.0050	0.0445
Nov-04	S&P 500 Utility Index			0.0407		0.0050	0.0357
Dec-04	S&P 500 Utility Index			0.0265		0.0049	0.0216
Jan-05	S&P 500 Utility Index			0.0221		0.0048	0.0173
Feb-05	S&P 500 Utility Index			0.0197		0.0047	0.0150
Mar-05	S&P 500 Utility Index			0.0108		0.0049	0.0059
Apr-05	S&P 500 Utility Index			0.0321		0.0047	0.0274

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
May-05	S&P 500 Utility Index			0.0008		0.0046	-0.0038
Jun-05	S&P 500 Utility Index			0.0576		0.0045	0.0531
Jul-05	S&P 500 Utility Index			0.0233		0.0046	0.0187
Aug-05	S&P 500 Utility Index			0.0073		0.0046	0.0027
Sep-05	S&P 500 Utility Index			0.0402		0.0046	0.0356
Oct-05	S&P 500 Utility Index			-0.0617		0.0048	-0.0665
Nov-05	S&P 500 Utility Index			-0.0039		0.0049	-0.0088
Dec-05	S&P 500 Utility Index			0.0110		0.0048	0.0062
Jan-06	S&P 500 Utility Index			0.0263		0.0048	0.0216
Feb-06	S&P 500 Utility Index			0.0095		0.0049	0.0047
Mar-06	S&P 500 Utility Index			-0.0463		0.0050	-0.0513
Apr-06	S&P 500 Utility Index			0.0172		0.0052	0.0119
May-06	S&P 500 Utility Index			0.0143		0.0054	0.0089
Jun-06	S&P 500 Utility Index			0.0242		0.0053	0.0188
Jul-06	S&P 500 Utility Index			0.0511		0.0053	0.0458
Aug-06	S&P 500 Utility Index			0.0271		0.0052	0.0220
Sep-06	S&P 500 Utility Index			-0.0174		0.0050	-0.0224
Oct-06	S&P 500 Utility Index			0.0560		0.0050	0.0510
Nov-06	S&P 500 Utility Index			0.0214		0.0048	0.0166
Dec-06	S&P 500 Utility Index			0.0118		0.0048	0.0070
Jan-07	S&P 500 Utility Index			-0.0011		0.0050	-0.0061
Feb-07	S&P 500 Utility Index			0.0503		0.0049	0.0454
Mar-07	S&P 500 Utility Index			0.0414		0.0049	0.0365
Apr-07	S&P 500 Utility Index			0.0438		0.0050	0.0388
May-07	S&P 500 Utility Index			0.0051		0.0050	0.0002
Jun-07	S&P 500 Utility Index			-0.0506		0.0053	-0.0559
Jul-07	S&P 500 Utility Index			-0.0357		0.0052	-0.0409
Aug-07	S&P 500 Utility Index			0.0210		0.0052	0.0158
Sep-07	S&P 500 Utility Index			0.0354		0.0052	0.0303
Oct-07	S&P 500 Utility Index			0.0686		0.0051	0.0635
Nov-07	S&P 500 Utility Index			0.0034		0.0050	-0.0016
Dec-07	S&P 500 Utility Index			0.0028		0.0051	-0.0024
Jan-08	S&P 500 Utility Index			-0.0681		0.0050	-0.0731
Feb-08	S&P 500 Utility Index			-0.0500		0.0052	-0.0551

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Mar-08	S&P 500 Utility Index			0.0171		0.0052	0.0119
Apr-08	S&P 500 Utility Index			0.0552		0.0052	0.0499
May-08	S&P 500 Utility Index			0.0320		0.0052	0.0268
Jun-08	S&P 500 Utility Index			-0.0087		0.0053	-0.0140
Jul-08	S&P 500 Utility Index			-0.0611		0.0053	-0.0664
Aug-08	S&P 500 Utility Index			-0.0166		0.0053	-0.0219
Sep-08	S&P 500 Utility Index			-0.1148		0.0054	-0.1202
Oct-08	S&P 500 Utility Index			-0.1161		0.0063	-0.1224
Nov-08	S&P 500 Utility Index			0.0279		0.0063	0.0216
Dec-08	S&P 500 Utility Index			-0.0168		0.0055	-0.0222
Jan-09	S&P 500 Utility Index			-0.0045		0.0053	-0.0099
Feb-09	S&P 500 Utility Index			-0.1257		0.0053	-0.1310
Mar-09	S&P 500 Utility Index			0.0253		0.0054	0.0199
Apr-09	S&P 500 Utility Index			0.0085		0.0054	0.0031
May-09	S&P 500 Utility Index			0.0353		0.0054	0.0299
Jun-09	S&P 500 Utility Index			0.0552		0.0052	0.0500
Jul-09	S&P 500 Utility Index			0.0408		0.0050	0.0358
Aug-09	S&P 500 Utility Index			0.0055		0.0048	0.0007
Sep-09	S&P 500 Utility Index			0.0143		0.0046	0.0097
Oct-09	S&P 500 Utility Index			-0.0284		0.0046	-0.0331
Nov-09	S&P 500 Utility Index			0.0456		0.0047	0.0409
Dec-09	S&P 500 Utility Index			0.0558		0.0048	0.0510
Jan-10	S&P 500 Utility Index			-0.0475		0.0048	-0.0523
Feb-10	S&P 500 Utility Index			-0.0149		0.0049	-0.0198
Mar-10	S&P 500 Utility Index			0.0280		0.0049	0.0231
Apr-10	S&P 500 Utility Index			0.0281		0.0048	0.0232
May-10	S&P 500 Utility Index			-0.0576		0.0046	-0.0622
Jun-10	S&P 500 Utility Index			-0.0064		0.0046	-0.0109
Jul-10	S&P 500 Utility Index			0.0774		0.0044	0.0730
Aug-10	S&P 500 Utility Index			0.0125		0.0042	0.0083
Sep-10	S&P 500 Utility Index			0.0296		0.0042	0.0254
Oct-10	S&P 500 Utility Index			0.0129		0.0043	0.0086
Nov-10	S&P 500 Utility Index			-0.0323		0.0045	-0.0368
Dec-10	S&P 500 Utility Index			0.0312		0.0046	0.0265

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Jan-11	S&P 500 Utility Index			0.0142		0.0046	0.0096
Feb-11	S&P 500 Utility Index			0.0112		0.0047	0.0065
Mar-11	S&P 500 Utility Index			0.0015		0.0046	-0.0032
Apr-11	S&P 500 Utility Index			0.0419		0.0046	0.0373
May-11	S&P 500 Utility Index			0.0198		0.0044	0.0153
Jun-11	S&P 500 Utility Index			-0.0013		0.0044	-0.0057
Jul-11	S&P 500 Utility Index			-0.0075		0.0044	-0.0119
Aug-11	S&P 500 Utility Index			0.0204		0.0039	0.0165
Sep-11	S&P 500 Utility Index			0.0023		0.0037	-0.0015
Oct-11	S&P 500 Utility Index			0.0387		0.0038	0.0350
Nov-11	S&P 500 Utility Index			0.0080		0.0035	0.0045
Dec-11	S&P 500 Utility Index			0.0338		0.0036	0.0302
Jan-12	S&P 500 Utility Index			-0.0332		0.0036	-0.0369
Feb-12	S&P 500 Utility Index			0.0035		0.0036	-0.0002
Mar-12	S&P 500 Utility Index			0.0137		0.0037	0.0100
Apr-12	S&P 500 Utility Index			0.0212		0.0037	0.0176
May-12	S&P 500 Utility Index			0.0022		0.0035	-0.0013
Jun-12	S&P 500 Utility Index			0.0410		0.0034	0.0376
Jul-12	S&P 500 Utility Index			0.0284		0.0033	0.0252
Aug-12	S&P 500 Utility Index			-0.0447		0.0033	-0.0481
Sep-12	S&P 500 Utility Index			0.0123		0.0034	0.0089
Oct-12	S&P 500 Utility Index			0.0172		0.0033	0.0140
Nov-12	S&P 500 Utility Index			-0.0464		0.0032	-0.0496
Dec-12	S&P 500 Utility Index			0.0011		0.0033	-0.0022
Jan-13	S&P 500 Utility Index			0.0351		0.0035	0.0316
Feb-13	S&P 500 Utility Index			0.0339		0.0035	0.0304
Mar-13	S&P 500 Utility Index			0.0540		0.0035	0.0505
Apr-13	S&P 500 Utility Index			0.0590		0.0033	0.0557
May-13	S&P 500 Utility Index			-0.0896		0.0035	-0.0931
Jun-13	S&P 500 Utility Index			0.0114		0.0038	0.0076
Jul-13	S&P 500 Utility Index			0.0385		0.0039	0.0346
Aug-13	S&P 500 Utility Index			-0.0500		0.0039	-0.0539
Sep-13	S&P 500 Utility Index			0.0108		0.0040	0.0068
Oct-13	S&P 500 Utility Index			0.0377		0.0039	0.0338

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	A Rated PU	RP
Nov-13	S&P 500 Utility Index			-0.0199		0.0040	-0.0239
Dec-13	S&P 500 Utility Index			0.0076		0.0040	0.0036
Jan-14	S&P 500 Utility Index			0.0281		0.0039	0.0242
Feb-14	S&P 500 Utility Index			0.0335		0.0038	0.0297
Mar-14	S&P 500 Utility Index			0.0337		0.0038	0.0299
Apr-14	S&P 500 Utility Index			0.0426		0.0037	0.0389
May-14	S&P 500 Utility Index			-0.0105		0.0036	-0.0141
Jun-14	S&P 500 Utility Index			0.0448		0.0036	0.0412
Jul-14	S&P 500 Utility Index			-0.0680		0.0035	-0.0715
Aug-14	S&P 500 Utility Index			0.0495		0.0034	0.0461
Sep-14	S&P 500 Utility Index			-0.0186		0.0035	-0.0221
Oct-14	S&P 500 Utility Index			0.0802		0.0034	0.0768
Nov-14	S&P 500 Utility Index			0.0120		0.0034	0.0086
Dec-14	S&P 500 Utility Index			0.0350		0.0033	0.0317
Jan-15	S&P 500 Utility Index			0.0233		0.0030	0.0203
Feb-15	S&P 500 Utility Index			-0.0633		0.0031	-0.0664
Mar-15	S&P 500 Utility Index			-0.0049		0.0031	-0.0080
Apr-15	S&P 500 Utility Index			-0.0129		0.0031	-0.0160
May-15	S&P 500 Utility Index			0.0065		0.0035	0.0030
Jun-15	S&P 500 Utility Index			-0.0600		0.0037	-0.0637
Jul-15	S&P 500 Utility Index			0.0481		0.0037	0.0444
Aug-15	S&P 500 Utility Index			-0.0397		0.0035	-0.0432
Sep-15	S&P 500 Utility Index			0.0290		0.0037	0.0253
Oct-15	S&P 500 Utility Index			0.0108		0.0036	0.0072
Nov-15	S&P 500 Utility Index			-0.0213		0.0037	-0.0250

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Jan-26						
Feb-26						
Mar-26						
Apr-26						
May-26						
Jun-26						
Jul-26						
Aug-26						
Sep-26						
Oct-26						
Nov-26						
Dec-26						
Jan-27						
Feb-27						
Mar-27						
Apr-27						
May-27						
Jun-27						
Jul-27						
Aug-27						
Sep-27						
Oct-27						
Nov-27						
Dec-27						
Jan-28	MKT Minus Aaa and Aa Avg			(0.0040)		0.0038 -0.0078
Feb-28	MKT Minus Aaa and Aa Avg			(0.0125)		0.0038 -0.0163
Mar-28	MKT Minus Aaa and Aa Avg			0.1101		0.0038 0.1063
Apr-28	MKT Minus Aaa and Aa Avg			0.0345		0.0038 0.0307
May-28	MKT Minus Aaa and Aa Avg			0.0197		0.0038 0.0159
Jun-28	MKT Minus Aaa and Aa Avg			(0.0385)		0.0039 -0.0424
Jul-28	MKT Minus Aaa and Aa Avg			0.0141		0.0039 0.0102
Aug-28	MKT Minus Aaa and Aa Avg			0.0803		0.0039 0.0764
Sep-28	MKT Minus Aaa and Aa Avg			0.0259		0.0039 0.0220
Oct-28	MKT Minus Aaa and Aa Avg			0.0168		0.0039 0.0129

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Nov-28	MKT Minus	Aaa and Aa Avg		0.1292		0.0039 0.1253
Dec-28	MKT Minus	Aaa and Aa Avg		0.0049		0.0039 0.0010
Jan-29	MKT Minus	Aaa and Aa Avg		0.0583		0.0039 0.0544
Feb-29	MKT Minus	Aaa and Aa Avg		(0.0019)		0.0040 -0.0059
Mar-29	MKT Minus	Aaa and Aa Avg		(0.0012)		0.0040 -0.0052
Apr-29	MKT Minus	Aaa and Aa Avg		0.0176		0.0040 0.0136
May-29	MKT Minus	Aaa and Aa Avg		(0.0362)		0.0040 -0.0402
Jun-29	MKT Minus	Aaa and Aa Avg		0.1140		0.0041 0.1099
Jul-29	MKT Minus	Aaa and Aa Avg		0.0471		0.0041 0.0430
Aug-29	MKT Minus	Aaa and Aa Avg		0.1028		0.0041 0.0987
Sep-29	MKT Minus	Aaa and Aa Avg		(0.0476)		0.0041 -0.0517
Oct-29	MKT Minus	Aaa and Aa Avg		(0.1973)		0.0041 -0.2014
Nov-29	MKT Minus	Aaa and Aa Avg		(0.1246)		0.0040 -0.1286
Dec-29	MKT Minus	Aaa and Aa Avg		0.0282		0.0040 0.0242
Jan-30	MKT Minus	Aaa and Aa Avg		0.0639		0.0040 0.0599
Feb-30	MKT Minus	Aaa and Aa Avg		0.0259		0.0040 0.0219
Mar-30	MKT Minus	Aaa and Aa Avg		0.0812		0.0039 0.0773
Apr-30	MKT Minus	Aaa and Aa Avg		(0.0080)		0.0039 -0.0119
May-30	MKT Minus	Aaa and Aa Avg		(0.0096)		0.0039 -0.0135
Jun-30	MKT Minus	Aaa and Aa Avg		(0.1625)		0.0039 -0.1664
Jul-30	MKT Minus	Aaa and Aa Avg		0.0386		0.0039 0.0347
Aug-30	MKT Minus	Aaa and Aa Avg		0.0141		0.0038 0.0103
Sep-30	MKT Minus	Aaa and Aa Avg		(0.1282)		0.0038 -0.1320
Oct-30	MKT Minus	Aaa and Aa Avg		(0.0855)		0.0038 -0.0893
Nov-30	MKT Minus	Aaa and Aa Avg		(0.0089)		0.0038 -0.0127
Dec-30	MKT Minus	Aaa and Aa Avg		(0.0706)		0.0039 -0.0745
Jan-31	MKT Minus	Aaa and Aa Avg		0.0502		0.0038 0.0464
Feb-31	MKT Minus	Aaa and Aa Avg		0.1193		0.0038 0.1155
Mar-31	MKT Minus	Aaa and Aa Avg		(0.0675)		0.0038 -0.0713
Apr-31	MKT Minus	Aaa and Aa Avg		(0.0935)		0.0038 -0.0973
May-31	MKT Minus	Aaa and Aa Avg		(0.1279)		0.0038 -0.1317
Jun-31	MKT Minus	Aaa and Aa Avg		0.1421		0.0038 0.1383
Jul-31	MKT Minus	Aaa and Aa Avg		(0.0722)		0.0038 -0.0760
Aug-31	MKT Minus	Aaa and Aa Avg		0.0182		0.0039 0.0143

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Sep-31	MKT Minus			(0.2973)		0.0040 -0.3013
Oct-31	MKT Minus			0.0896		0.0044 0.0852
Nov-31	MKT Minus			(0.0798)		0.0044 -0.0842
Dec-31	MKT Minus			(0.1400)		0.0048 -0.1448
Jan-32	MKT Minus			(0.0271)		0.0047 -0.0318
Feb-32	MKT Minus			0.0570		0.0047 0.0523
Mar-32	MKT Minus			(0.1158)		0.0045 -0.1203
Apr-32	MKT Minus			(0.1997)		0.0047 -0.2044
May-32	MKT Minus			(0.2196)		0.0049 -0.2245
Jun-32	MKT Minus			(0.0022)		0.0050 -0.0072
Jul-32	MKT Minus			0.3815		0.0049 0.3766
Aug-32	MKT Minus			0.3869		0.0045 0.3824
Sep-32	MKT Minus			(0.0346)		0.0043 -0.0389
Oct-32	MKT Minus			(0.1349)		0.0042 -0.1391
Nov-32	MKT Minus			(0.0417)		0.0043 -0.0460
Dec-32	MKT Minus			0.0565		0.0042 0.0523
Jan-33	MKT Minus			0.0087		0.0041 0.0046
Feb-33	MKT Minus			(0.1772)		0.0041 -0.1813
Mar-33	MKT Minus			0.0353		0.0043 0.0310
Apr-33	MKT Minus			0.4256		0.0044 0.4212
May-33	MKT Minus			0.1683		0.0042 0.1641
Jun-33	MKT Minus			0.1338		0.0040 0.1298
Jul-33	MKT Minus			(0.0862)		0.0038 -0.0900
Aug-33	MKT Minus			0.1206		0.0038 0.1168
Sep-33	MKT Minus			(0.1118)		0.0039 -0.1157
Oct-33	MKT Minus			(0.0855)		0.0039 -0.0894
Nov-33	MKT Minus			0.1127		0.0041 0.1086
Dec-33	MKT Minus			0.0253		0.0041 0.0212
Jan-34	MKT Minus			0.1069		0.0039 0.1030
Feb-34	MKT Minus			(0.0322)		0.0037 -0.0359
Mar-34	MKT Minus			-		0.0036 -0.0036
Apr-34	MKT Minus			(0.0251)		0.0035 -0.0286
May-34	MKT Minus			(0.0736)		0.0035 -0.0771
Jun-34	MKT Minus			0.0229		0.0034 0.0195

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Jul-34	MKT Minus			(0.1132)		0.0034 -0.1166
Aug-34	MKT Minus			0.0611		0.0034 0.0577
Sep-34	MKT Minus			(0.0033)		0.0035 -0.0068
Oct-34	MKT Minus			(0.0286)		0.0034 -0.0320
Nov-34	MKT Minus			0.0942		0.0034 0.0908
Dec-34	MKT Minus			(0.0010)		0.0034 -0.0044
Jan-35	MKT Minus			(0.0411)		0.0033 -0.0444
Feb-35	MKT Minus			(0.0341)		0.0033 -0.0374
Mar-35	MKT Minus			(0.0286)		0.0032 -0.0318
Apr-35	MKT Minus			0.0980		0.0032 0.0948
May-35	MKT Minus			0.0409		0.0032 0.0377
Jun-35	MKT Minus			0.0699		0.0032 0.0667
Jul-35	MKT Minus			0.0850		0.0031 0.0819
Aug-35	MKT Minus			0.0280		0.0031 0.0249
Sep-35	MKT Minus			0.0256		0.0031 0.0225
Oct-35	MKT Minus			0.0777		0.0031 0.0746
Nov-35	MKT Minus			0.0474		0.0030 0.0444
Dec-35	MKT Minus			0.0394		0.0030 0.0364
Jan-36	MKT Minus			0.0670		0.0029 0.0641
Feb-36	MKT Minus			0.0224		0.0029 0.0195
Mar-36	MKT Minus			0.0268		0.0029 0.0240
Apr-36	MKT Minus			(0.0751)		0.0029 -0.0780
May-36	MKT Minus			0.0545		0.0028 0.0517
Jun-36	MKT Minus			0.0333		0.0028 0.0305
Jul-36	MKT Minus			0.0701		0.0028 0.0673
Aug-36	MKT Minus			0.0151		0.0028 0.0123
Sep-36	MKT Minus			0.0031		0.0027 0.0004
Oct-36	MKT Minus			0.0775		0.0027 0.0748
Nov-36	MKT Minus			0.0134		0.0027 0.0107
Dec-36	MKT Minus			(0.0029)		0.0027 -0.0056
Jan-37	MKT Minus			0.0390		0.0027 0.0363
Feb-37	MKT Minus			0.0191		0.0028 0.0163
Mar-37	MKT Minus			(0.0077)		0.0028 -0.0105
Apr-37	MKT Minus			(0.0809)		0.0029 -0.0838

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
May-37	MKT Minus	Aaa and Aa Avg		(0.0024)		0.0028 -0.0052
Jun-37	MKT Minus	Aaa and Aa Avg		(0.0504)		0.0028 -0.0532
Jul-37	MKT Minus	Aaa and Aa Avg		0.1045		0.0028 0.1017
Aug-37	MKT Minus	Aaa and Aa Avg		(0.0483)		0.0028 -0.0511
Sep-37	MKT Minus	Aaa and Aa Avg		(0.1403)		0.0028 -0.1431
Oct-37	MKT Minus	Aaa and Aa Avg		(0.0981)		0.0028 -0.1009
Nov-37	MKT Minus	Aaa and Aa Avg		(0.0866)		0.0028 -0.0894
Dec-37	MKT Minus	Aaa and Aa Avg		(0.0459)		0.0028 -0.0487
Jan-38	MKT Minus	Aaa and Aa Avg		0.0152		0.0028 0.0124
Feb-38	MKT Minus	Aaa and Aa Avg		0.0674		0.0028 0.0646
Mar-38	MKT Minus	Aaa and Aa Avg		(0.2487)		0.0028 -0.2515
Apr-38	MKT Minus	Aaa and Aa Avg		0.1447		0.0029 0.1418
May-38	MKT Minus	Aaa and Aa Avg		(0.0330)		0.0028 -0.0358
Jun-38	MKT Minus	Aaa and Aa Avg		0.2503		0.0029 0.2474
Jul-38	MKT Minus	Aaa and Aa Avg		0.0744		0.0029 0.0716
Aug-38	MKT Minus	Aaa and Aa Avg		(0.0226)		0.0028 -0.0254
Sep-38	MKT Minus	Aaa and Aa Avg		0.0166		0.0028 0.0138
Oct-38	MKT Minus	Aaa and Aa Avg		0.0776		0.0028 0.0748
Nov-38	MKT Minus	Aaa and Aa Avg		(0.0273)		0.0027 -0.0300
Dec-38	MKT Minus	Aaa and Aa Avg		0.0401		0.0027 0.0374
Jan-39	MKT Minus	Aaa and Aa Avg		(0.0674)		0.0026 -0.0700
Feb-39	MKT Minus	Aaa and Aa Avg		0.0390		0.0026 0.0364
Mar-39	MKT Minus	Aaa and Aa Avg		(0.1339)		0.0026 -0.1365
Apr-39	MKT Minus	Aaa and Aa Avg		(0.0027)		0.0026 -0.0053
May-39	MKT Minus	Aaa and Aa Avg		0.0733		0.0026 0.0707
Jun-39	MKT Minus	Aaa and Aa Avg		(0.0612)		0.0025 -0.0637
Jul-39	MKT Minus	Aaa and Aa Avg		0.1105		0.0025 0.1080
Aug-39	MKT Minus	Aaa and Aa Avg		(0.0648)		0.0025 -0.0673
Sep-39	MKT Minus	Aaa and Aa Avg		0.1673		0.0028 0.1645
Oct-39	MKT Minus	Aaa and Aa Avg		(0.0123)		0.0027 -0.0150
Nov-39	MKT Minus	Aaa and Aa Avg		(0.0398)		0.0026 -0.0424
Dec-39	MKT Minus	Aaa and Aa Avg		0.0270		0.0025 0.0245
Jan-40	MKT Minus	Aaa and Aa Avg		(0.0336)		0.0025 -0.0361
Feb-40	MKT Minus	Aaa and Aa Avg		0.0133		0.0025 0.0108

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Mar-40	MKT Minus	Aaa and Aa Avg		0.0124		0.0025 0.0100
Apr-40	MKT Minus	Aaa and Aa Avg		(0.0024)		0.0024 -0.0048
May-40	MKT Minus	Aaa and Aa Avg		(0.2289)		0.0025 -0.2314
Jun-40	MKT Minus	Aaa and Aa Avg		0.0809		0.0025 0.0784
Jul-40	MKT Minus	Aaa and Aa Avg		0.0341		0.0025 0.0316
Aug-40	MKT Minus	Aaa and Aa Avg		0.0350		0.0025 0.0326
Sep-40	MKT Minus	Aaa and Aa Avg		0.0123		0.0024 0.0099
Oct-40	MKT Minus	Aaa and Aa Avg		0.0422		0.0024 0.0398
Nov-40	MKT Minus	Aaa and Aa Avg		(0.0316)		0.0024 -0.0340
Dec-40	MKT Minus	Aaa and Aa Avg		0.0009		0.0023 -0.0014
Jan-41	MKT Minus	Aaa and Aa Avg		(0.0463)		0.0024 -0.0487
Feb-41	MKT Minus	Aaa and Aa Avg		(0.0060)		0.0024 -0.0084
Mar-41	MKT Minus	Aaa and Aa Avg		0.0071		0.0024 0.0047
Apr-41	MKT Minus	Aaa and Aa Avg		(0.0612)		0.0024 -0.0636
May-41	MKT Minus	Aaa and Aa Avg		0.0183		0.0024 0.0159
Jun-41	MKT Minus	Aaa and Aa Avg		0.0578		0.0024 0.0554
Jul-41	MKT Minus	Aaa and Aa Avg		0.0579		0.0024 0.0556
Aug-41	MKT Minus	Aaa and Aa Avg		0.0010		0.0024 -0.0014
Sep-41	MKT Minus	Aaa and Aa Avg		(0.0068)		0.0024 -0.0092
Oct-41	MKT Minus	Aaa and Aa Avg		(0.0657)		0.0023 -0.0680
Nov-41	MKT Minus	Aaa and Aa Avg		(0.0284)		0.0023 -0.0307
Dec-41	MKT Minus	Aaa and Aa Avg		(0.0407)		0.0024 -0.0431
Jan-42	MKT Minus	Aaa and Aa Avg		0.0161		0.0024 0.0137
Feb-42	MKT Minus	Aaa and Aa Avg		(0.0159)		0.0024 -0.0183
Mar-42	MKT Minus	Aaa and Aa Avg		(0.0652)		0.0024 -0.0676
Apr-42	MKT Minus	Aaa and Aa Avg		(0.0399)		0.0024 -0.0423
May-42	MKT Minus	Aaa and Aa Avg		0.0796		0.0024 0.0772
Jun-42	MKT Minus	Aaa and Aa Avg		0.0221		0.0024 0.0197
Jul-42	MKT Minus	Aaa and Aa Avg		0.0337		0.0024 0.0313
Aug-42	MKT Minus	Aaa and Aa Avg		0.0164		0.0024 0.0140
Sep-42	MKT Minus	Aaa and Aa Avg		0.0290		0.0024 0.0266
Oct-42	MKT Minus	Aaa and Aa Avg		0.0678		0.0024 0.0654
Nov-42	MKT Minus	Aaa and Aa Avg		(0.0021)		0.0024 -0.0045
Dec-42	MKT Minus	Aaa and Aa Avg		0.0549		0.0024 0.0525

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Jan-43	MKT Minus			0.0737		0.0024 0.0713
Feb-43	MKT Minus			0.0583		0.0024 0.0559
Mar-43	MKT Minus			0.0545		0.0024 0.0522
Apr-43	MKT Minus			0.0035		0.0024 0.0012
May-43	MKT Minus			0.0552		0.0023 0.0529
Jun-43	MKT Minus			0.0223		0.0023 0.0200
Jul-43	MKT Minus			(0.0526)		0.0023 -0.0549
Aug-43	MKT Minus			0.0171		0.0023 0.0148
Sep-43	MKT Minus			0.0263		0.0023 0.0240
Oct-43	MKT Minus			(0.0108)		0.0023 -0.0131
Nov-43	MKT Minus			(0.0654)		0.0023 -0.0677
Dec-43	MKT Minus			0.0617		0.0023 0.0594
Jan-44	MKT Minus			0.0171		0.0023 0.0148
Feb-44	MKT Minus			0.0042		0.0023 0.0019
Mar-44	MKT Minus			0.0195		0.0023 0.0172
Apr-44	MKT Minus			(0.0100)		0.0023 -0.0123
May-44	MKT Minus			0.0505		0.0023 0.0482
Jun-44	MKT Minus			0.0543		0.0023 0.0520
Jul-44	MKT Minus			(0.0193)		0.0023 -0.0216
Aug-44	MKT Minus			0.0157		0.0023 0.0134
Sep-44	MKT Minus			(0.0008)		0.0023 -0.0031
Oct-44	MKT Minus			0.0023		0.0023 0.0000
Nov-44	MKT Minus			0.0133		0.0023 0.0110
Dec-44	MKT Minus			0.0374		0.0023 0.0351
Jan-45	MKT Minus			0.0158		0.0023 0.0135
Feb-45	MKT Minus			0.0683		0.0022 0.0661
Mar-45	MKT Minus			(0.0441)		0.0022 -0.0463
Apr-45	MKT Minus			0.0902		0.0022 0.0880
May-45	MKT Minus			0.0195		0.0022 0.0173
Jun-45	MKT Minus			(0.0007)		0.0022 -0.0029
Jul-45	MKT Minus			(0.0180)		0.0022 -0.0202
Aug-45	MKT Minus			0.0641		0.0022 0.0619
Sep-45	MKT Minus			0.0438		0.0022 0.0416
Oct-45	MKT Minus			0.0322		0.0022 0.0300

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Nov-45	MKT Minus			0.0396		0.0022 0.0374
Dec-45	MKT Minus			0.0116		0.0022 0.0094
Jan-46	MKT Minus			0.0714		0.0022 0.0693
Feb-46	MKT Minus			(0.0641)		0.0021 -0.0662
Mar-46	MKT Minus			0.0480		0.0021 0.0459
Apr-46	MKT Minus			0.0393		0.0021 0.0372
May-46	MKT Minus			0.0288		0.0021 0.0267
Jun-46	MKT Minus			(0.0370)		0.0021 -0.0391
Jul-46	MKT Minus			(0.0239)		0.0021 -0.0260
Aug-46	MKT Minus			(0.0674)		0.0021 -0.0695
Sep-46	MKT Minus			(0.0997)		0.0022 -0.1019
Oct-46	MKT Minus			(0.0060)		0.0022 -0.0082
Nov-46	MKT Minus			(0.0027)		0.0022 -0.0049
Dec-46	MKT Minus			0.0457		0.0022 0.0435
Jan-47	MKT Minus			0.0255		0.0022 0.0233
Feb-47	MKT Minus			(0.0077)		0.0022 -0.0099
Mar-47	MKT Minus			(0.0149)		0.0022 -0.0171
Apr-47	MKT Minus			(0.0363)		0.0022 -0.0385
May-47	MKT Minus			0.0014		0.0022 -0.0008
Jun-47	MKT Minus			0.0554		0.0022 0.0532
Jul-47	MKT Minus			0.0381		0.0022 0.0359
Aug-47	MKT Minus			(0.0203)		0.0022 -0.0225
Sep-47	MKT Minus			(0.0111)		0.0022 -0.0133
Oct-47	MKT Minus			0.0238		0.0023 0.0215
Nov-47	MKT Minus			(0.0175)		0.0023 -0.0198
Dec-47	MKT Minus			0.0233		0.0024 0.0209
Jan-48	MKT Minus			(0.0379)		0.0024 -0.0403
Feb-48	MKT Minus			(0.0388)		0.0024 -0.0412
Mar-48	MKT Minus			0.0793		0.0024 0.0769
Apr-48	MKT Minus			0.0292		0.0024 0.0268
May-48	MKT Minus			0.0879		0.0023 0.0856
Jun-48	MKT Minus			0.0054		0.0023 0.0031
Jul-48	MKT Minus			(0.0508)		0.0024 -0.0532
Aug-48	MKT Minus			0.0158		0.0024 0.0134

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Sep-48	MKT Minus	Aaa and Aa Avg		(0.0276)		0.0024 -0.0300
Oct-48	MKT Minus	Aaa and Aa Avg		0.0710		0.0024 0.0686
Nov-48	MKT Minus	Aaa and Aa Avg		(0.0961)		0.0024 -0.0985
Dec-48	MKT Minus	Aaa and Aa Avg		0.0346		0.0024 0.0322
Jan-49	MKT Minus	Aaa and Aa Avg		0.0039		0.0023 0.0016
Feb-49	MKT Minus	Aaa and Aa Avg		(0.0296)		0.0023 -0.0319
Mar-49	MKT Minus	Aaa and Aa Avg		0.0328		0.0023 0.0305
Apr-49	MKT Minus	Aaa and Aa Avg		(0.0179)		0.0023 -0.0202
May-49	MKT Minus	Aaa and Aa Avg		(0.0258)		0.0023 -0.0281
Jun-49	MKT Minus	Aaa and Aa Avg		0.0014		0.0023 -0.0009
Jul-49	MKT Minus	Aaa and Aa Avg		0.0650		0.0023 0.0627
Aug-49	MKT Minus	Aaa and Aa Avg		0.0219		0.0022 0.0197
Sep-49	MKT Minus	Aaa and Aa Avg		0.0263		0.0022 0.0241
Oct-49	MKT Minus	Aaa and Aa Avg		0.0340		0.0022 0.0318
Nov-49	MKT Minus	Aaa and Aa Avg		0.0175		0.0022 0.0153
Dec-49	MKT Minus	Aaa and Aa Avg		0.0486		0.0022 0.0464
Jan-50	MKT Minus	Aaa and Aa Avg		0.0197		0.0022 0.0175
Feb-50	MKT Minus	Aaa and Aa Avg		0.0199		0.0022 0.0177
Mar-50	MKT Minus	Aaa and Aa Avg		0.0070		0.0022 0.0048
Apr-50	MKT Minus	Aaa and Aa Avg		0.0486		0.0022 0.0464
May-50	MKT Minus	Aaa and Aa Avg		0.0509		0.0022 0.0487
Jun-50	MKT Minus	Aaa and Aa Avg		(0.0548)		0.0022 -0.0570
Jul-50	MKT Minus	Aaa and Aa Avg		0.0119		0.0022 0.0097
Aug-50	MKT Minus	Aaa and Aa Avg		0.0443		0.0022 0.0421
Sep-50	MKT Minus	Aaa and Aa Avg		0.0592		0.0022 0.0570
Oct-50	MKT Minus	Aaa and Aa Avg		0.0093		0.0022 0.0071
Nov-50	MKT Minus	Aaa and Aa Avg		0.0169		0.0022 0.0147
Dec-50	MKT Minus	Aaa and Aa Avg		0.0513		0.0022 0.0491
Jan-51	MKT Minus	Aaa and Aa Avg		0.0637		0.0022 0.0615
Feb-51	MKT Minus	Aaa and Aa Avg		0.0157		0.0022 0.0135
Mar-51	MKT Minus	Aaa and Aa Avg		(0.0156)		0.0023 -0.0179
Apr-51	MKT Minus	Aaa and Aa Avg		0.0509		0.0024 0.0485
May-51	MKT Minus	Aaa and Aa Avg		(0.0299)		0.0024 -0.0323
Jun-51	MKT Minus	Aaa and Aa Avg		(0.0228)		0.0025 -0.0253

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Jul-51	MKT Minus			0.0711		0.0025 0.0686
Aug-51	MKT Minus			0.0478		0.0024 0.0454
Sep-51	MKT Minus			0.0013		0.0024 -0.0011
Oct-51	MKT Minus			(0.0103)		0.0024 -0.0127
Nov-51	MKT Minus			0.0096		0.0025 0.0071
Dec-51	MKT Minus			0.0424		0.0025 0.0399
Jan-52	MKT Minus			0.0181		0.0025 0.0156
Feb-52	MKT Minus			(0.0282)		0.0025 -0.0307
Mar-52	MKT Minus			0.0503		0.0025 0.0478
Apr-52	MKT Minus			(0.0402)		0.0025 -0.0427
May-52	MKT Minus			0.0343		0.0025 0.0318
Jun-52	MKT Minus			0.0490		0.0025 0.0465
Jul-52	MKT Minus			0.0196		0.0025 0.0171
Aug-52	MKT Minus			(0.0071)		0.0025 -0.0096
Sep-52	MKT Minus			(0.0176)		0.0025 -0.0201
Oct-52	MKT Minus			0.0020		0.0025 -0.0005
Nov-52	MKT Minus			0.0571		0.0025 0.0546
Dec-52	MKT Minus			0.0382		0.0025 0.0357
Jan-53	MKT Minus			(0.0049)		0.0025 -0.0074
Feb-53	MKT Minus			(0.0106)		0.0026 -0.0132
Mar-53	MKT Minus			(0.0212)		0.0026 -0.0238
Apr-53	MKT Minus			(0.0237)		0.0027 -0.0264
May-53	MKT Minus			0.0077		0.0028 0.0049
Jun-53	MKT Minus			(0.0134)		0.0029 -0.0163
Jul-53	MKT Minus			0.0273		0.0028 0.0245
Aug-53	MKT Minus			(0.0501)		0.0028 -0.0529
Sep-53	MKT Minus			0.0034		0.0028 0.0006
Oct-53	MKT Minus			0.0540		0.0027 0.0513
Nov-53	MKT Minus			0.0204		0.0027 0.0177
Dec-53	MKT Minus			0.0052		0.0027 0.0025
Jan-54	MKT Minus			0.0536		0.0026 0.0510
Feb-54	MKT Minus			0.0111		0.0025 0.0086
Mar-54	MKT Minus			0.0325		0.0025 0.0300
Apr-54	MKT Minus			0.0516		0.0024 0.0492

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
May-54	MKT Minus	Aaa and Aa Avg		0.0418		0.0025 0.0393
Jun-54	MKT Minus	Aaa and Aa Avg		0.0031		0.0025 0.0006
Jul-54	MKT Minus	Aaa and Aa Avg		0.0589		0.0025 0.0564
Aug-54	MKT Minus	Aaa and Aa Avg		(0.0275)		0.0025 -0.0300
Sep-54	MKT Minus	Aaa and Aa Avg		0.0851		0.0025 0.0826
Oct-54	MKT Minus	Aaa and Aa Avg		(0.0167)		0.0025 -0.0192
Nov-54	MKT Minus	Aaa and Aa Avg		0.0909		0.0025 0.0884
Dec-54	MKT Minus	Aaa and Aa Avg		0.0534		0.0025 0.0509
Jan-55	MKT Minus	Aaa and Aa Avg		0.0197		0.0025 0.0172
Feb-55	MKT Minus	Aaa and Aa Avg		0.0098		0.0025 0.0073
Mar-55	MKT Minus	Aaa and Aa Avg		(0.0030)		0.0026 -0.0056
Apr-55	MKT Minus	Aaa and Aa Avg		0.0396		0.0026 0.0370
May-55	MKT Minus	Aaa and Aa Avg		0.0055		0.0026 0.0029
Jun-55	MKT Minus	Aaa and Aa Avg		0.0841		0.0026 0.0815
Jul-55	MKT Minus	Aaa and Aa Avg		0.0622		0.0026 0.0596
Aug-55	MKT Minus	Aaa and Aa Avg		(0.0025)		0.0026 -0.0051
Sep-55	MKT Minus	Aaa and Aa Avg		0.0130		0.0026 0.0104
Oct-55	MKT Minus	Aaa and Aa Avg		(0.0284)		0.0026 -0.0310
Nov-55	MKT Minus	Aaa and Aa Avg		0.0827		0.0026 0.0801
Dec-55	MKT Minus	Aaa and Aa Avg		0.0015		0.0027 -0.0012
Jan-56	MKT Minus	Aaa and Aa Avg		(0.0347)		0.0026 -0.0373
Feb-56	MKT Minus	Aaa and Aa Avg		0.0413		0.0026 0.0387
Mar-56	MKT Minus	Aaa and Aa Avg		0.0710		0.0026 0.0684
Apr-56	MKT Minus	Aaa and Aa Avg		(0.0004)		0.0027 -0.0031
May-56	MKT Minus	Aaa and Aa Avg		(0.0593)		0.0028 -0.0621
Jun-56	MKT Minus	Aaa and Aa Avg		0.0409		0.0028 0.0381
Jul-56	MKT Minus	Aaa and Aa Avg		0.0530		0.0028 0.0502
Aug-56	MKT Minus	Aaa and Aa Avg		(0.0328)		0.0029 -0.0357
Sep-56	MKT Minus	Aaa and Aa Avg		(0.0440)		0.0030 -0.0470
Oct-56	MKT Minus	Aaa and Aa Avg		0.0066		0.0030 0.0036
Nov-56	MKT Minus	Aaa and Aa Avg		(0.0050)		0.0031 -0.0081
Dec-56	MKT Minus	Aaa and Aa Avg		0.0370		0.0032 0.0338
Jan-57	MKT Minus	Aaa and Aa Avg		(0.0401)		0.0032 -0.0433
Feb-57	MKT Minus	Aaa and Aa Avg		(0.0264)		0.0031 -0.0295

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Mar-57	MKT Minus			0.0215		0.0031 0.0184
Apr-57	MKT Minus			0.0388		0.0031 0.0357
May-57	MKT Minus			0.0437		0.0032 0.0405
Jun-57	MKT Minus			0.0004		0.0033 -0.0029
Jul-57	MKT Minus			0.0131		0.0034 0.0097
Aug-57	MKT Minus			(0.0505)		0.0035 -0.0540
Sep-57	MKT Minus			(0.0602)		0.0035 -0.0637
Oct-57	MKT Minus			(0.0302)		0.0035 -0.0337
Nov-57	MKT Minus			0.0231		0.0035 0.0196
Dec-57	MKT Minus			(0.0395)		0.0033 -0.0428
Jan-58	MKT Minus			0.0445		0.0031 0.0414
Feb-58	MKT Minus			(0.0141)		0.0031 -0.0172
Mar-58	MKT Minus			0.0328		0.0031 0.0297
Apr-58	MKT Minus			0.0337		0.0031 0.0306
May-58	MKT Minus			0.0212		0.0031 0.0181
Jun-58	MKT Minus			0.0279		0.0031 0.0248
Jul-58	MKT Minus			0.0449		0.0031 0.0418
Aug-58	MKT Minus			0.0176		0.0033 0.0143
Sep-58	MKT Minus			0.0501		0.0035 0.0466
Oct-58	MKT Minus			0.0270		0.0035 0.0235
Nov-58	MKT Minus			0.0284		0.0035 0.0249
Dec-58	MKT Minus			0.0535		0.0034 0.0501
Jan-59	MKT Minus			0.0053		0.0035 0.0018
Feb-59	MKT Minus			0.0049		0.0035 0.0014
Mar-59	MKT Minus			0.0020		0.0035 -0.0015
Apr-59	MKT Minus			0.0402		0.0036 0.0366
May-59	MKT Minus			0.0240		0.0037 0.0203
Jun-59	MKT Minus			(0.0022)		0.0038 -0.0060
Jul-59	MKT Minus			0.0363		0.0038 0.0325
Aug-59	MKT Minus			(0.0102)		0.0038 -0.0140
Sep-59	MKT Minus			(0.0443)		0.0038 -0.0481
Oct-59	MKT Minus			0.0128		0.0039 0.0089
Nov-59	MKT Minus			0.0186		0.0039 0.0147
Dec-59	MKT Minus			0.0292		0.0039 0.0253

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and AæRP
Jan-60	MKT Minus Aaa and Aa Avg			(0.0700)		0.0039 -0.0739
Feb-60	MKT Minus Aaa and Aa Avg			0.0147		0.0039 0.0108
Mar-60	MKT Minus Aaa and Aa Avg			(0.0123)		0.0038 -0.0161
Apr-60	MKT Minus Aaa and Aa Avg			(0.0161)		0.0038 -0.0199
May-60	MKT Minus Aaa and Aa Avg			0.0326		0.0038 0.0288
Jun-60	MKT Minus Aaa and Aa Avg			0.0211		0.0038 0.0173
Jul-60	MKT Minus Aaa and Aa Avg			(0.0234)		0.0037 -0.0271
Aug-60	MKT Minus Aaa and Aa Avg			0.0317		0.0036 0.0281
Sep-60	MKT Minus Aaa and Aa Avg			(0.0590)		0.0036 -0.0626
Oct-60	MKT Minus Aaa and Aa Avg			(0.0007)		0.0036 -0.0043
Nov-60	MKT Minus Aaa and Aa Avg			0.0465		0.0037 0.0428
Dec-60	MKT Minus Aaa and Aa Avg			0.0479		0.0037 0.0442
Jan-61	MKT Minus Aaa and Aa Avg			0.0645		0.0037 0.0608
Feb-61	MKT Minus Aaa and Aa Avg			0.0319		0.0036 0.0283
Mar-61	MKT Minus Aaa and Aa Avg			0.0270		0.0036 0.0234
Apr-61	MKT Minus Aaa and Aa Avg			0.0051		0.0036 0.0015
May-61	MKT Minus Aaa and Aa Avg			0.0239		0.0036 0.0203
Jun-61	MKT Minus Aaa and Aa Avg			(0.0275)		0.0037 -0.0312
Jul-61	MKT Minus Aaa and Aa Avg			0.0342		0.0037 0.0305
Aug-61	MKT Minus Aaa and Aa Avg			0.0243		0.0038 0.0205
Sep-61	MKT Minus Aaa and Aa Avg			(0.0184)		0.0038 -0.0222
Oct-61	MKT Minus Aaa and Aa Avg			0.0298		0.0037 0.0261
Nov-61	MKT Minus Aaa and Aa Avg			0.0447		0.0037 0.0410
Dec-61	MKT Minus Aaa and Aa Avg			0.0046		0.0037 0.0009
Jan-62	MKT Minus Aaa and Aa Avg			(0.0366)		0.0037 -0.0403
Feb-62	MKT Minus Aaa and Aa Avg			0.0209		0.0037 0.0172
Mar-62	MKT Minus Aaa and Aa Avg			(0.0046)		0.0037 -0.0083
Apr-62	MKT Minus Aaa and Aa Avg			(0.0607)		0.0037 -0.0644
May-62	MKT Minus Aaa and Aa Avg			(0.0811)		0.0036 -0.0847
Jun-62	MKT Minus Aaa and Aa Avg			(0.0803)		0.0036 -0.0839
Jul-62	MKT Minus Aaa and Aa Avg			0.0652		0.0037 0.0615
Aug-62	MKT Minus Aaa and Aa Avg			0.0208		0.0037 0.0171
Sep-62	MKT Minus Aaa and Aa Avg			(0.0465)		0.0037 -0.0502
Oct-62	MKT Minus Aaa and Aa Avg			0.0064		0.0036 0.0028

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Nov-62	MKT Minus			0.1086		0.1050
Dec-62	MKT Minus			0.0153	0.0036	0.0117
Jan-63	MKT Minus			0.0506	0.0036	0.0470
Feb-63	MKT Minus			(0.0239)	0.0036	-0.0275
Mar-63	MKT Minus			0.0370	0.0036	0.0334
Apr-63	MKT Minus			0.0500	0.0036	0.0464
May-63	MKT Minus			0.0193	0.0036	0.0157
Jun-63	MKT Minus			(0.0188)	0.0036	-0.0224
Jul-63	MKT Minus			(0.0022)	0.0036	-0.0058
Aug-63	MKT Minus			0.0535	0.0036	0.0499
Sep-63	MKT Minus			(0.0097)	0.0036	-0.0133
Oct-63	MKT Minus			0.0339	0.0036	0.0303
Nov-63	MKT Minus			(0.0046)	0.0037	-0.0083
Dec-63	MKT Minus			0.0262	0.0037	0.0225
Jan-64	MKT Minus			0.0283	0.0037	0.0246
Feb-64	MKT Minus			0.0147	0.0037	0.0110
Mar-64	MKT Minus			0.0165	0.0037	0.0128
Apr-64	MKT Minus			0.0075	0.0037	0.0038
May-64	MKT Minus			0.0162	0.0037	0.0125
Jun-64	MKT Minus			0.0178	0.0037	0.0141
Jul-64	MKT Minus			0.0195	0.0037	0.0158
Aug-64	MKT Minus			(0.0118)	0.0037	-0.0155
Sep-64	MKT Minus			0.0301	0.0037	0.0264
Oct-64	MKT Minus			0.0096	0.0037	0.0059
Nov-64	MKT Minus			0.0005	0.0037	-0.0032
Dec-64	MKT Minus			0.0056	0.0037	0.0019
Jan-65	MKT Minus			0.0345	0.0037	0.0308
Feb-65	MKT Minus			0.0031	0.0037	-0.0006
Mar-65	MKT Minus			(0.0133)	0.0037	-0.0170
Apr-65	MKT Minus			0.0356	0.0037	0.0319
May-65	MKT Minus			(0.0030)	0.0037	-0.0067
Jun-65	MKT Minus			(0.0473)	0.0037	-0.0510
Jul-65	MKT Minus			0.0147	0.0038	0.0109
Aug-65	MKT Minus			0.0272	0.0038	0.0234

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Sep-65	MKT Minus			0.0334		0.0038 0.0296
Oct-65	MKT Minus			0.0289		0.0038 0.0251
Nov-65	MKT Minus			(0.0031)		0.0039 -0.0070
Dec-65	MKT Minus			0.0106		0.0040 0.0067
Jan-66	MKT Minus			0.0062		0.0040 0.0022
Feb-66	MKT Minus			(0.0131)		0.0040 -0.0171
Mar-66	MKT Minus			(0.0205)		0.0042 -0.0247
Apr-66	MKT Minus			0.0220		0.0042 0.0178
May-66	MKT Minus			(0.0492)		0.0042 -0.0534
Jun-66	MKT Minus			(0.0146)		0.0043 -0.0189
Jul-66	MKT Minus			(0.0120)		0.0043 -0.0163
Aug-66	MKT Minus			(0.0725)		0.0045 -0.0770
Sep-66	MKT Minus			(0.0053)		0.0046 -0.0099
Oct-66	MKT Minus			0.0494		0.0045 0.0449
Nov-66	MKT Minus			0.0095		0.0045 0.0050
Dec-66	MKT Minus			0.0002		0.0045 -0.0043
Jan-67	MKT Minus			0.0798		0.0044 0.0754
Feb-67	MKT Minus			0.0072		0.0043 0.0029
Mar-67	MKT Minus			0.0409		0.0043 0.0366
Apr-67	MKT Minus			0.0437		0.0043 0.0394
May-67	MKT Minus			(0.0477)		0.0044 -0.0521
Jun-67	MKT Minus			0.0190		0.0046 0.0144
Jul-67	MKT Minus			0.0468		0.0047 0.0421
Aug-67	MKT Minus			(0.0070)		0.0047 -0.0117
Sep-67	MKT Minus			0.0342		0.0048 0.0294
Oct-67	MKT Minus			(0.0276)		0.0049 -0.0325
Nov-67	MKT Minus			0.0065		0.0051 0.0014
Dec-67	MKT Minus			0.0278		0.0052 0.0226
Jan-68	MKT Minus			(0.0425)		0.0052 -0.0477
Feb-68	MKT Minus			(0.0261)		0.0052 -0.0313
Mar-68	MKT Minus			0.0110		0.0052 0.0058
Apr-68	MKT Minus			0.0834		0.0052 0.0782
May-68	MKT Minus			0.0161		0.0053 0.0108
Jun-68	MKT Minus			0.0105		0.0053 0.0052

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Jul-68	MKT Minus			(0.0172)		0.0053 -0.0225
Aug-68	MKT Minus			0.0164		0.0051 0.0113
Sep-68	MKT Minus			0.0400		0.0051 0.0349
Oct-68	MKT Minus			0.0087		0.0052 0.0035
Nov-68	MKT Minus			0.0531		0.0053 0.0478
Dec-68	MKT Minus			(0.0402)		0.0055 -0.0457
Jan-69	MKT Minus			(0.0068)		0.0056 -0.0124
Feb-69	MKT Minus			(0.0426)		0.0056 -0.0482
Mar-69	MKT Minus			0.0359		0.0058 0.0302
Apr-69	MKT Minus			0.0229		0.0058 0.0171
May-69	MKT Minus			0.0026		0.0057 -0.0031
Jun-69	MKT Minus			(0.0542)		0.0059 -0.0601
Jul-69	MKT Minus			(0.0587)		0.0060 -0.0647
Aug-69	MKT Minus			0.0454		0.0059 0.0395
Sep-69	MKT Minus			(0.0236)		0.0060 -0.0296
Oct-69	MKT Minus			0.0459		0.0062 0.0397
Nov-69	MKT Minus			(0.0297)		0.0062 -0.0359
Dec-69	MKT Minus			(0.0177)		0.0065 -0.0242
Jan-70	MKT Minus			(0.0743)		0.0067 -0.0810
Feb-70	MKT Minus			0.0586		0.0067 0.0519
Mar-70	MKT Minus			0.0030		0.0066 -0.0036
Apr-70	MKT Minus			(0.0889)		0.0066 -0.0955
May-70	MKT Minus			(0.0547)		0.0068 -0.0615
Jun-70	MKT Minus			(0.0482)		0.0071 -0.0553
Jul-70	MKT Minus			0.0752		0.0071 0.0681
Aug-70	MKT Minus			0.0509		0.0069 0.0440
Sep-70	MKT Minus			0.0347		0.0069 0.0278
Oct-70	MKT Minus			(0.0097)		0.0069 -0.0166
Nov-70	MKT Minus			0.0536		0.0069 0.0467
Dec-70	MKT Minus			0.0584		0.0066 0.0518
Jan-71	MKT Minus			0.0419		0.0064 0.0355
Feb-71	MKT Minus			0.0141		0.0061 0.0080
Mar-71	MKT Minus			0.0382		0.0062 0.0320
Apr-71	MKT Minus			0.0377		0.0062 0.0315

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and AæRP
May-71	MKT Minus			(0.0367)		0.0064 -0.0431
Jun-71	MKT Minus			0.0021		0.0065 -0.0044
Jul-71	MKT Minus			(0.0399)		0.0065 -0.0464
Aug-71	MKT Minus			0.0412		0.0065 0.0347
Sep-71	MKT Minus			(0.0056)		0.0064 -0.0120
Oct-71	MKT Minus			(0.0404)		0.0063 -0.0467
Nov-71	MKT Minus			0.0027		0.0062 -0.0035
Dec-71	MKT Minus			0.0877		0.0062 0.0815
Jan-72	MKT Minus			0.0194		0.0061 0.0133
Feb-72	MKT Minus			0.0299		0.0062 0.0237
Mar-72	MKT Minus			0.0072		0.0062 0.0010
Apr-72	MKT Minus			0.0057		0.0062 -0.0005
May-72	MKT Minus			0.0219		0.0062 0.0157
Jun-72	MKT Minus			(0.0205)		0.0061 -0.0266
Jul-72	MKT Minus			0.0036		0.0061 -0.0025
Aug-72	MKT Minus			0.0391		0.0061 0.0330
Sep-72	MKT Minus			(0.0036)		0.0061 -0.0097
Oct-72	MKT Minus			0.0107		0.0061 0.0046
Nov-72	MKT Minus			0.0505		0.0060 0.0445
Dec-72	MKT Minus			0.0131		0.0060 0.0071
Jan-73	MKT Minus			(0.0159)		0.0061 -0.0220
Feb-73	MKT Minus			(0.0333)		0.0061 -0.0394
Mar-73	MKT Minus			(0.0002)		0.0062 -0.0064
Apr-73	MKT Minus			(0.0395)		0.0061 -0.0456
May-73	MKT Minus			(0.0139)		0.0062 -0.0201
Jun-73	MKT Minus			(0.0051)		0.0062 -0.0113
Jul-73	MKT Minus			0.0394		0.0063 0.0331
Aug-73	MKT Minus			(0.0318)		0.0065 -0.0383
Sep-73	MKT Minus			0.0415		0.0065 0.0350
Oct-73	MKT Minus			0.0003		0.0064 -0.0061
Nov-73	MKT Minus			(0.1082)		0.0065 -0.1147
Dec-73	MKT Minus			0.0183		0.0065 0.0118
Jan-74	MKT Minus			(0.0085)		0.0066 -0.0151
Feb-74	MKT Minus			0.0019		0.0066 -0.0047

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Mar-74	MKT Minus Aaa and Aa Avg			(0.0217)		0.0067 -0.0284
Apr-74	MKT Minus Aaa and Aa Avg			(0.0373)		0.0070 -0.0443
May-74	MKT Minus Aaa and Aa Avg			(0.0272)		0.0071 -0.0343
Jun-74	MKT Minus Aaa and Aa Avg			(0.0128)		0.0072 -0.0200
Jul-74	MKT Minus Aaa and Aa Avg			(0.0759)		0.0074 -0.0833
Aug-74	MKT Minus Aaa and Aa Avg			(0.0828)		0.0076 -0.0904
Sep-74	MKT Minus Aaa and Aa Avg			(0.1170)		0.0079 -0.1249
Oct-74	MKT Minus Aaa and Aa Avg			0.1657		0.0079 0.1578
Nov-74	MKT Minus Aaa and Aa Avg			(0.0448)		0.0076 -0.0524
Dec-74	MKT Minus Aaa and Aa Avg			(0.0177)		0.0075 -0.0252
Jan-75	MKT Minus Aaa and Aa Avg			0.1251		0.0075 0.1176
Feb-75	MKT Minus Aaa and Aa Avg			0.0674		0.0073 0.0601
Mar-75	MKT Minus Aaa and Aa Avg			0.0237		0.0073 0.0164
Apr-75	MKT Minus Aaa and Aa Avg			0.0493		0.0076 0.0417
May-75	MKT Minus Aaa and Aa Avg			0.0509		0.0076 0.0433
Jun-75	MKT Minus Aaa and Aa Avg			0.0462		0.0075 0.0387
Jul-75	MKT Minus Aaa and Aa Avg			(0.0659)		0.0075 -0.0734
Aug-75	MKT Minus Aaa and Aa Avg			(0.0144)		0.0076 -0.0220
Sep-75	MKT Minus Aaa and Aa Avg			(0.0328)		0.0076 -0.0404
Oct-75	MKT Minus Aaa and Aa Avg			0.0637		0.0076 0.0561
Nov-75	MKT Minus Aaa and Aa Avg			0.0313		0.0075 0.0238
Dec-75	MKT Minus Aaa and Aa Avg			(0.0096)		0.0075 -0.0171
Jan-76	MKT Minus Aaa and Aa Avg			0.1199		0.0074 0.1125
Feb-76	MKT Minus Aaa and Aa Avg			(0.0058)		0.0073 -0.0131
Mar-76	MKT Minus Aaa and Aa Avg			0.0326		0.0073 0.0253
Apr-76	MKT Minus Aaa and Aa Avg			(0.0099)		0.0072 -0.0171
May-76	MKT Minus Aaa and Aa Avg			(0.0073)		0.0073 -0.0146
Jun-76	MKT Minus Aaa and Aa Avg			0.0427		0.0073 0.0354
Jul-76	MKT Minus Aaa and Aa Avg			(0.0068)		0.0072 -0.0140
Aug-76	MKT Minus Aaa and Aa Avg			0.0014		0.0071 -0.0057
Sep-76	MKT Minus Aaa and Aa Avg			0.0247		0.0071 0.0177
Oct-76	MKT Minus Aaa and Aa Avg			(0.0206)		0.0070 -0.0276
Nov-76	MKT Minus Aaa and Aa Avg			(0.0009)		0.0070 -0.0079
Dec-76	MKT Minus Aaa and Aa Avg			0.0540		0.0068 0.0472

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Jan-77	MKT Minus			(0.0489)		0.0067 -0.0556
Feb-77	MKT Minus			(0.0151)		0.0068 -0.0219
Mar-77	MKT Minus			(0.0119)		0.0068 -0.0187
Apr-77	MKT Minus			0.0014		0.0068 -0.0054
May-77	MKT Minus			(0.0150)		0.0068 -0.0218
Jun-77	MKT Minus			0.0475		0.0067 0.0408
Jul-77	MKT Minus			(0.0151)		0.0067 -0.0218
Aug-77	MKT Minus			(0.0133)		0.0067 -0.0200
Sep-77	MKT Minus			-		0.0067 -0.0067
Oct-77	MKT Minus			(0.0415)		0.0068 -0.0483
Nov-77	MKT Minus			0.0370		0.0068 0.0302
Dec-77	MKT Minus			0.0048		0.0069 -0.0021
Jan-78	MKT Minus			(0.0596)		0.0071 -0.0667
Feb-78	MKT Minus			(0.0161)		0.0071 -0.0232
Mar-78	MKT Minus			0.0276		0.0071 0.0205
Apr-78	MKT Minus			0.0870		0.0072 0.0798
May-78	MKT Minus			0.0136		0.0073 0.0063
Jun-78	MKT Minus			(0.0152)		0.0074 -0.0226
Jul-78	MKT Minus			0.0560		0.0075 0.0485
Aug-78	MKT Minus			0.0340		0.0074 0.0266
Sep-78	MKT Minus			(0.0048)		0.0073 -0.0121
Oct-78	MKT Minus			(0.0891)		0.0075 -0.0966
Nov-78	MKT Minus			0.0260		0.0076 0.0184
Dec-78	MKT Minus			0.0172		0.0077 0.0095
Jan-79	MKT Minus			0.0421		0.0078 0.0343
Feb-79	MKT Minus			(0.0284)		0.0078 -0.0362
Mar-79	MKT Minus			0.0575		0.0079 0.0496
Apr-79	MKT Minus			0.0036		0.0079 -0.0043
May-79	MKT Minus			(0.0168)		0.0081 -0.0249
Jun-79	MKT Minus			0.0410		0.0079 0.0331
Jul-79	MKT Minus			0.0110		0.0078 0.0032
Aug-79	MKT Minus			0.0611		0.0078 0.0533
Sep-79	MKT Minus			0.0025		0.0080 -0.0055
Oct-79	MKT Minus			(0.0656)		0.0086 -0.0742

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Nov-79	MKT Minus			0.0514		0.0092 0.0422
Dec-79	MKT Minus			0.0192		0.0091 0.0101
Jan-80	MKT Minus			0.0610		0.0094 0.0516
Feb-80	MKT Minus			0.0031		0.0105 -0.0074
Mar-80	MKT Minus			(0.0987)		0.0110 -0.1097
Apr-80	MKT Minus			0.0429		0.0105 0.0324
May-80	MKT Minus			0.0562		0.0095 0.0467
Jun-80	MKT Minus			0.0296		0.0092 0.0204
Jul-80	MKT Minus			0.0676		0.0094 0.0582
Aug-80	MKT Minus			0.0131		0.0099 0.0032
Sep-80	MKT Minus			0.0281		0.0102 0.0179
Oct-80	MKT Minus			0.0187		0.0104 0.0083
Nov-80	MKT Minus			0.1095		0.0110 0.0985
Dec-80	MKT Minus			(0.0315)		0.0112 -0.0427
Jan-81	MKT Minus			(0.0438)		0.0110 -0.0548
Feb-81	MKT Minus			0.0208		0.0114 0.0095
Mar-81	MKT Minus			0.0380		0.0113 0.0267
Apr-81	MKT Minus			(0.0213)		0.0118 -0.0331
May-81	MKT Minus			0.0062		0.0122 -0.0060
Jun-81	MKT Minus			(0.0080)		0.0117 -0.0197
Jul-81	MKT Minus			0.0007		0.0122 -0.0115
Aug-81	MKT Minus			(0.0554)		0.0126 -0.0680
Sep-81	MKT Minus			(0.0502)		0.0131 -0.0633
Oct-81	MKT Minus			0.0528		0.0130 0.0398
Nov-81	MKT Minus			0.0441		0.0122 0.0319
Dec-81	MKT Minus			(0.0265)		0.0122 -0.0387
Jan-82	MKT Minus			(0.0163)		0.0129 -0.0292
Feb-82	MKT Minus			(0.0512)		0.0129 -0.0641
Mar-82	MKT Minus			(0.0060)		0.0124 -0.0184
Apr-82	MKT Minus			0.0414		0.0122 0.0292
May-82	MKT Minus			(0.0288)		0.0121 -0.0409
Jun-82	MKT Minus			(0.0174)		0.0125 -0.0299
Jul-82	MKT Minus			(0.0215)		0.0124 -0.0339
Aug-82	MKT Minus			0.1267		0.0117 0.1150

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Sep-82	MKT Minus			0.0110		0.0111 -0.0001
Oct-82	MKT Minus			0.1126		0.0105 0.1021
Nov-82	MKT Minus			0.0438		0.0101 0.0337
Dec-82	MKT Minus			0.0173		0.0101 0.0072
Jan-83	MKT Minus			0.0348		0.0101 0.0247
Feb-83	MKT Minus			0.0260		0.0102 0.0158
Mar-83	MKT Minus			0.0365		0.0100 0.0265
Apr-83	MKT Minus			0.0758		0.0098 0.0660
May-83	MKT Minus			(0.0052)		0.0098 -0.0150
Jun-83	MKT Minus			0.0382		0.0100 0.0282
Jul-83	MKT Minus			(0.0313)		0.0102 -0.0415
Aug-83	MKT Minus			0.0170		0.0105 0.0065
Sep-83	MKT Minus			0.0136		0.0104 0.0032
Oct-83	MKT Minus			(0.0134)		0.0103 -0.0237
Nov-83	MKT Minus			0.0233		0.0104 0.0129
Dec-83	MKT Minus			(0.0061)		0.0106 -0.0167
Jan-84	MKT Minus			(0.0065)		0.0104 -0.0169
Feb-84	MKT Minus			(0.0328)		0.0103 -0.0431
Mar-84	MKT Minus			0.0171		0.0107 0.0064
Apr-84	MKT Minus			0.0069		0.0110 -0.0041
May-84	MKT Minus			(0.0534)		0.0114 -0.0648
Jun-84	MKT Minus			0.0221		0.0116 0.0105
Jul-84	MKT Minus			(0.0143)		0.0115 -0.0258
Aug-84	MKT Minus			0.1125		0.0110 0.1015
Sep-84	MKT Minus			0.0002		0.0108 -0.0106
Oct-84	MKT Minus			0.0026		0.0107 -0.0081
Nov-84	MKT Minus			(0.0101)		0.0104 -0.0205
Dec-84	MKT Minus			0.0253		0.0103 0.0150
Jan-85	MKT Minus			0.0768		0.0102 0.0666
Feb-85	MKT Minus			0.0137		0.0103 0.0034
Mar-85	MKT Minus			0.0018		0.0106 -0.0088
Apr-85	MKT Minus			(0.0032)		0.0104 -0.0136
May-85	MKT Minus			0.0615		0.0100 0.0515
Jun-85	MKT Minus			0.0159		0.0093 0.0066

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and AæRP
Jul-85	MKT Minus			(0.0026)		0.0093 -0.0119
Aug-85	MKT Minus			(0.0061)		0.0094 -0.0155
Sep-85	MKT Minus			(0.0321)		0.0094 -0.0415
Oct-85	MKT Minus			0.0447		0.0094 0.0353
Nov-85	MKT Minus			0.0716		0.0090 0.0626
Dec-85	MKT Minus			0.0467		0.0087 0.0380
Jan-86	MKT Minus			0.0044		0.0085 -0.0041
Feb-86	MKT Minus			0.0761		0.0083 0.0679
Mar-86	MKT Minus			0.0554		0.0077 0.0477
Apr-86	MKT Minus			(0.0124)		0.0075 -0.0199
May-86	MKT Minus			0.0549		0.0077 0.0472
Jun-86	MKT Minus			0.0166		0.0078 0.0088
Jul-86	MKT Minus			(0.0569)		0.0076 -0.0645
Aug-86	MKT Minus			0.0748		0.0075 0.0673
Sep-86	MKT Minus			(0.0822)		0.0076 -0.0898
Oct-86	MKT Minus			0.0556		0.0076 0.0480
Nov-86	MKT Minus			0.0256		0.0075 0.0182
Dec-86	MKT Minus			(0.0264)		0.0073 -0.0337
Jan-87	MKT Minus			0.1343		0.0072 0.1271
Feb-87	MKT Minus			0.0413		0.0072 0.0341
Mar-87	MKT Minus			0.0272		0.0072 0.0200
Apr-87	MKT Minus			(0.0088)		0.0075 -0.0163
May-87	MKT Minus			0.0103		0.0079 0.0024
Jun-87	MKT Minus			0.0499		0.0079 0.0420
Jul-87	MKT Minus			0.0498		0.0079 0.0419
Aug-87	MKT Minus			0.0385		0.0081 0.0304
Sep-87	MKT Minus			(0.0220)		0.0086 -0.0306
Oct-87	MKT Minus			(0.2152)		0.0089 -0.2241
Nov-87	MKT Minus			(0.0819)		0.0085 -0.0904
Dec-87	MKT Minus			0.0738		0.0085 0.0653
Jan-88	MKT Minus			0.0427		0.0083 0.0344
Feb-88	MKT Minus			0.0470		0.0079 0.0391
Mar-88	MKT Minus			(0.0302)		0.0079 -0.0381
Apr-88	MKT Minus			0.0108		0.0081 0.0027

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
May-88	MKT Minus			0.0078		0.0083 -0.0005
Jun-88	MKT Minus			0.0464		0.0083 0.0381
Jul-88	MKT Minus			(0.0040)		0.0084 -0.0124
Aug-88	MKT Minus			(0.0331)		0.0085 -0.0416
Sep-88	MKT Minus			0.0424		0.0083 0.0341
Oct-88	MKT Minus			0.0273		0.0080 0.0193
Nov-88	MKT Minus			(0.0142)		0.0080 -0.0222
Dec-88	MKT Minus			0.0181		0.0081 0.0100
Jan-89	MKT Minus			0.0723		0.0081 0.0642
Feb-89	MKT Minus			(0.0249)		0.0081 -0.0330
Mar-89	MKT Minus			0.0236		0.0082 0.0154
Apr-89	MKT Minus			0.0516		0.0082 0.0434
May-89	MKT Minus			0.0402		0.0081 0.0322
Jun-89	MKT Minus			(0.0054)		0.0077 -0.0131
Jul-89	MKT Minus			0.0898		0.0075 0.0823
Aug-89	MKT Minus			0.0193		0.0075 0.0118
Sep-89	MKT Minus			(0.0039)		0.0076 -0.0115
Oct-89	MKT Minus			(0.0233)		0.0075 -0.0308
Nov-89	MKT Minus			0.0208		0.0075 0.0133
Dec-89	MKT Minus			0.0236		0.0075 0.0161
Jan-90	MKT Minus			(0.0671)		0.0076 -0.0747
Feb-90	MKT Minus			0.0129		0.0078 0.0051
Mar-90	MKT Minus			0.0263		0.0079 0.0184
Apr-90	MKT Minus			(0.0247)		0.0080 -0.0327
May-90	MKT Minus			0.0975		0.0080 0.0895
Jun-90	MKT Minus			(0.0070)		0.0078 -0.0148
Jul-90	MKT Minus			(0.0032)		0.0078 -0.0110
Aug-90	MKT Minus			(0.0903)		0.0079 -0.0982
Sep-90	MKT Minus			(0.0492)		0.0081 -0.0573
Oct-90	MKT Minus			(0.0037)		0.0080 -0.0117
Nov-90	MKT Minus			0.0644		0.0079 0.0565
Dec-90	MKT Minus			0.0274		0.0077 0.0197
Jan-91	MKT Minus			0.0442		0.0077 0.0365
Feb-91	MKT Minus			0.0716		0.0075 0.0641

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Mar-91	MKT Minus			0.0238		0.0076 0.0162
Apr-91	MKT Minus			0.0028		0.0075 -0.0047
May-91	MKT Minus			0.0428		0.0075 0.0353
Jun-91	MKT Minus			(0.0457)		0.0076 -0.0533
Jul-91	MKT Minus			0.0468		0.0076 0.0392
Aug-91	MKT Minus			0.0235		0.0074 0.0161
Sep-91	MKT Minus			(0.0164)		0.0073 -0.0237
Oct-91	MKT Minus			0.0134		0.0072 0.0062
Nov-91	MKT Minus			(0.0404)		0.0072 -0.0476
Dec-91	MKT Minus			0.1143		0.0071 0.1073
Jan-92	MKT Minus			(0.0186)		0.0070 -0.0256
Feb-92	MKT Minus			0.0128		0.0071 0.0057
Mar-92	MKT Minus			(0.0196)		0.0071 -0.0267
Apr-92	MKT Minus			0.0291		0.0071 0.0220
May-92	MKT Minus			0.0054		0.0070 -0.0016
Jun-92	MKT Minus			(0.0145)		0.0070 -0.0215
Jul-92	MKT Minus			0.0403		0.0069 0.0335
Aug-92	MKT Minus			(0.0202)		0.0067 -0.0269
Sep-92	MKT Minus			0.0115		0.0067 0.0048
Oct-92	MKT Minus			0.0036		0.0068 -0.0032
Nov-92	MKT Minus			0.0337		0.0069 0.0268
Dec-92	MKT Minus			0.0131		0.0068 0.0063
Jan-93	MKT Minus			0.0073		0.0067 0.0006
Feb-93	MKT Minus			0.0135		0.0065 0.0070
Mar-93	MKT Minus			0.0215		0.0064 0.0151
Apr-93	MKT Minus			(0.0245)		0.0063 -0.0308
May-93	MKT Minus			0.0270		0.0063 0.0207
Jun-93	MKT Minus			0.0033		0.0062 -0.0029
Jul-93	MKT Minus			(0.0047)		0.0061 -0.0108
Aug-93	MKT Minus			0.0381		0.0058 0.0323
Sep-93	MKT Minus			(0.0074)		0.0056 -0.0130
Oct-93	MKT Minus			0.0203		0.0056 0.0147
Nov-93	MKT Minus			(0.0094)		0.0059 -0.0153
Dec-93	MKT Minus			0.0123		0.0059 0.0064

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Jan-94	MKT Minus			0.0335		0.0059 0.0277
Feb-94	MKT Minus			(0.0270)		0.0060 -0.0330
Mar-94	MKT Minus			(0.0435)		0.0060 -0.0495
Apr-94	MKT Minus			0.0130		0.0063 0.0067
May-94	MKT Minus			0.0163		0.0067 0.0096
Jun-94	MKT Minus			(0.0247)		0.0067 -0.0314
Jul-94	MKT Minus			0.0331		0.0068 0.0263
Aug-94	MKT Minus			0.0407		0.0068 0.0339
Sep-94	MKT Minus			(0.0241)		0.0070 -0.0311
Oct-94	MKT Minus			0.0229		0.0072 0.0157
Nov-94	MKT Minus			(0.0367)		0.0073 -0.0440
Dec-94	MKT Minus			0.0146		0.0071 0.0075
Jan-95	MKT Minus			0.0260		0.0071 0.0189
Feb-95	MKT Minus			0.0388		0.0069 0.0319
Mar-95	MKT Minus			0.0296		0.0068 0.0228
Apr-95	MKT Minus			0.0291		0.0067 0.0224
May-95	MKT Minus			0.0395		0.0064 0.0331
Jun-95	MKT Minus			0.0235		0.0061 0.0174
Jul-95	MKT Minus			0.0333		0.0062 0.0271
Aug-95	MKT Minus			0.0027		0.0064 -0.0037
Sep-95	MKT Minus			0.0419		0.0062 0.0357
Oct-95	MKT Minus			(0.0035)		0.0060 -0.0095
Nov-95	MKT Minus			0.0440		0.0059 0.0381
Dec-95	MKT Minus			0.0185		0.0058 0.0127
Jan-96	MKT Minus			0.0344		0.0058 0.0287
Feb-96	MKT Minus			0.0096		0.0059 0.0037
Mar-96	MKT Minus			0.0096		0.0062 0.0034
Apr-96	MKT Minus			0.0147		0.0063 0.0084
May-96	MKT Minus			0.0258		0.0064 0.0194
Jun-96	MKT Minus			0.0041		0.0065 -0.0024
Jul-96	MKT Minus			(0.0445)		0.0064 -0.0509
Aug-96	MKT Minus			0.0212		0.0063 0.0149
Sep-96	MKT Minus			0.0562		0.0065 0.0498
Oct-96	MKT Minus			0.0274		0.0062 0.0212

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Nov-96	MKT Minus			0.0759		0.0060 0.0699
Dec-96	MKT Minus			(0.0196)		0.0061 -0.0257
Jan-97	MKT Minus			0.0621		0.0063 0.0558
Feb-97	MKT Minus			0.0081		0.0062 0.0019
Mar-97	MKT Minus			(0.0416)		0.0064 -0.0480
Apr-97	MKT Minus			0.0597		0.0065 0.0532
May-97	MKT Minus			0.0614		0.0064 0.0550
Jun-97	MKT Minus			0.0446		0.0063 0.0383
Jul-97	MKT Minus			0.0794		0.0060 0.0734
Aug-97	MKT Minus			(0.0556)		0.0061 -0.0617
Sep-97	MKT Minus			0.0548		0.0060 0.0488
Oct-97	MKT Minus			(0.0334)		0.0059 -0.0393
Nov-97	MKT Minus			0.0463		0.0058 0.0405
Dec-97	MKT Minus			0.0172		0.0057 0.0115
Jan-98	MKT Minus			0.0111		0.0056 0.0055
Feb-98	MKT Minus			0.0721		0.0056 0.0665
Mar-98	MKT Minus			0.0512		0.0057 0.0455
Apr-98	MKT Minus			0.0101		0.0057 0.0044
May-98	MKT Minus			(0.0172)		0.0057 -0.0229
Jun-98	MKT Minus			0.0406		0.0055 0.0351
Jul-98	MKT Minus			(0.0106)		0.0056 -0.0162
Aug-98	MKT Minus			(0.1446)		0.0055 -0.1501
Sep-98	MKT Minus			0.0641		0.0055 0.0587
Oct-98	MKT Minus			0.0813		0.0054 0.0759
Nov-98	MKT Minus			0.0606		0.0055 0.0551
Dec-98	MKT Minus			0.0576		0.0054 0.0522
Jan-99	MKT Minus			0.0418		0.0054 0.0364
Feb-99	MKT Minus			(0.0311)		0.0055 -0.0366
Mar-99	MKT Minus			0.0400		0.0057 0.0343
Apr-99	MKT Minus			0.0387		0.0057 0.0330
May-99	MKT Minus			(0.0236)		0.0059 -0.0295
Jun-99	MKT Minus			0.0555		0.0061 0.0494
Jul-99	MKT Minus			(0.0312)		0.0061 -0.0373
Aug-99	MKT Minus			(0.0050)		0.0063 -0.0113

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Sep-99	MKT Minus			(0.0274)		0.0063 -0.0337
Oct-99	MKT Minus			0.0633		0.0064 0.0569
Nov-99	MKT Minus			0.0203		0.0062 0.0141
Dec-99	MKT Minus			0.0589		0.0064 0.0525
Jan-00	MKT Minus			(0.0502)		0.0066 -0.0568
Feb-00	MKT Minus			(0.0189)		0.0065 -0.0254
Mar-00	MKT Minus			0.0978		0.0065 0.0913
Apr-00	MKT Minus			(0.0301)		0.0064 -0.0365
May-00	MKT Minus			(0.0205)		0.0068 -0.0273
Jun-00	MKT Minus			0.0246		0.0065 0.0181
Jul-00	MKT Minus			(0.0156)		0.0064 -0.0220
Aug-00	MKT Minus			0.0621		0.0064 0.0557
Sep-00	MKT Minus			(0.0528)		0.0064 -0.0592
Oct-00	MKT Minus			(0.0042)		0.0064 -0.0106
Nov-00	MKT Minus			(0.0788)		0.0063 -0.0851
Dec-00	MKT Minus			0.0049		0.0061 -0.0012
Jan-01	MKT Minus			0.0355		0.0061 0.0294
Feb-01	MKT Minus			(0.0912)		0.0060 -0.0972
Mar-01	MKT Minus			(0.0634)		0.0059 -0.0693
Apr-01	MKT Minus			0.0777		0.0061 0.0716
May-01	MKT Minus			0.0067		0.0062 0.0005
Jun-01	MKT Minus			(0.0243)		0.0061 -0.0304
Jul-01	MKT Minus			(0.0098)		0.0060 -0.0158
Aug-01	MKT Minus			(0.0626)		0.0060 -0.0686
Sep-01	MKT Minus			(0.0808)		0.0060 -0.0868
Oct-01	MKT Minus			0.0191		0.0059 0.0132
Nov-01	MKT Minus			0.0767		0.0058 0.0709
Dec-01	MKT Minus			0.0088		0.0058 0.0030
Jan-02	MKT Minus			(0.0146)		0.0057 -0.0203
Feb-02	MKT Minus			(0.0193)		0.0056 -0.0249
Mar-02	MKT Minus			0.0376		0.0058 0.0318
Apr-02	MKT Minus			(0.0606)		0.0058 -0.0664
May-02	MKT Minus			(0.0074)		0.0058 -0.0132
Jun-02	MKT Minus			(0.0712)		0.0057 -0.0769

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Jul-02	MKT Minus			(0.0780)		0.0056 -0.0836
Aug-02	MKT Minus			0.0066		0.0055 0.0011
Sep-02	MKT Minus			(0.1087)		0.0053 -0.1140
Oct-02	MKT Minus			0.0880		0.0054 0.0826
Nov-02	MKT Minus			0.0589		0.0054 0.0535
Dec-02	MKT Minus			(0.0588)		0.0054 -0.0642
Jan-03	MKT Minus			(0.0262)		0.0053 -0.0315
Feb-03	MKT Minus			(0.0150)		0.0051 -0.0201
Mar-03	MKT Minus			0.0097		0.0051 0.0046
Apr-03	MKT Minus			0.0824		0.0050 0.0774
May-03	MKT Minus			0.0527		0.0046 0.0481
Jun-03	MKT Minus			0.0128		0.0045 0.0083
Jul-03	MKT Minus			0.0176		0.0048 0.0128
Aug-03	MKT Minus			0.0195		0.0051 0.0144
Sep-03	MKT Minus			(0.0106)		0.0049 -0.0155
Oct-03	MKT Minus			0.0566		0.0049 0.0517
Nov-03	MKT Minus			0.0088		0.0049 0.0039
Dec-03	MKT Minus			0.0524		0.0049 0.0475
Jan-04	MKT Minus			0.0184		0.0048 0.0136
Feb-04	MKT Minus			0.0139		0.0047 0.0092
Mar-04	MKT Minus			(0.0151)		0.0046 -0.0197
Apr-04	MKT Minus			(0.0157)		0.0049 -0.0206
May-04	MKT Minus			0.0137		0.0052 0.0085
Jun-04	MKT Minus			0.0194		0.0051 0.0143
Jul-04	MKT Minus			(0.0331)		0.0049 -0.0380
Aug-04	MKT Minus			0.0040		0.0048 -0.0008
Sep-04	MKT Minus			0.0108		0.0047 0.0061
Oct-04	MKT Minus			0.0153		0.0047 0.0107
Nov-04	MKT Minus			0.0405		0.0047 0.0358
Dec-04	MKT Minus			0.0340		0.0047 0.0294
Jan-05	MKT Minus			(0.0244)		0.0046 -0.0290
Feb-05	MKT Minus			0.0210		0.0044 0.0166
Mar-05	MKT Minus			(0.0177)		0.0046 -0.0223
Apr-05	MKT Minus			(0.0190)		0.0045 -0.0235

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
May-05	MKT Minus	Aaa and Aa Avg		0.0318		0.0044 0.0275
Jun-05	MKT Minus	Aaa and Aa Avg		0.0014		0.0042 -0.0028
Jul-05	MKT Minus	Aaa and Aa Avg		0.0372		0.0043 0.0330
Aug-05	MKT Minus	Aaa and Aa Avg		(0.0091)		0.0043 -0.0134
Sep-05	MKT Minus	Aaa and Aa Avg		0.0081		0.0043 0.0038
Oct-05	MKT Minus	Aaa and Aa Avg		(0.0167)		0.0045 -0.0212
Nov-05	MKT Minus	Aaa and Aa Avg		0.0378		0.0046 0.0332
Dec-05	MKT Minus	Aaa and Aa Avg		0.0003		0.0045 -0.0042
Jan-06	MKT Minus	Aaa and Aa Avg		0.0265		0.0045 0.0220
Feb-06	MKT Minus	Aaa and Aa Avg		0.0027		0.0045 -0.0018
Mar-06	MKT Minus	Aaa and Aa Avg		0.0124		0.0047 0.0077
Apr-06	MKT Minus	Aaa and Aa Avg		0.0134		0.0049 0.0085
May-06	MKT Minus	Aaa and Aa Avg		(0.0288)		0.0050 -0.0338
Jun-06	MKT Minus	Aaa and Aa Avg		0.0014		0.0050 -0.0036
Jul-06	MKT Minus	Aaa and Aa Avg		0.0062		0.0050 0.0012
Aug-06	MKT Minus	Aaa and Aa Avg		0.0238		0.0048 0.0190
Sep-06	MKT Minus	Aaa and Aa Avg		0.0258		0.0047 0.0211
Oct-06	MKT Minus	Aaa and Aa Avg		0.0326		0.0047 0.0279
Nov-06	MKT Minus	Aaa and Aa Avg		0.0190		0.0045 0.0145
Dec-06	MKT Minus	Aaa and Aa Avg		0.0140		0.0045 0.0095
Jan-07	MKT Minus	Aaa and Aa Avg		0.0151		0.0046 0.0105
Feb-07	MKT Minus	Aaa and Aa Avg		(0.0196)		0.0046 -0.0242
Mar-07	MKT Minus	Aaa and Aa Avg		0.0112		0.0046 0.0066
Apr-07	MKT Minus	Aaa and Aa Avg		0.0443		0.0047 0.0396
May-07	MKT Minus	Aaa and Aa Avg		0.0349		0.0047 0.0302
Jun-07	MKT Minus	Aaa and Aa Avg		(0.0166)		0.0028 -0.0194
Jul-07	MKT Minus	Aaa and Aa Avg		(0.0310)		0.0049 -0.0359
Aug-07	MKT Minus	Aaa and Aa Avg		0.0150		0.0049 0.0101
Sep-07	MKT Minus	Aaa and Aa Avg		0.0375		0.0049 0.0326
Oct-07	MKT Minus	Aaa and Aa Avg		0.0159		0.0048 0.0111
Nov-07	MKT Minus	Aaa and Aa Avg		(0.0418)		0.0047 -0.0465
Dec-07	MKT Minus	Aaa and Aa Avg		(0.0069)		0.0048 -0.0117
Jan-08	MKT Minus	Aaa and Aa Avg		(0.0600)		0.0046 -0.0646
Feb-08	MKT Minus	Aaa and Aa Avg		(0.0352)		0.0048 -0.0400

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Mar-08	MKT Minus	Aaa and Aa Avg		(0.0043)		0.0048 -0.0091
Apr-08	MKT Minus	Aaa and Aa Avg		0.0487		0.0048 0.0439
May-08	MKT Minus	Aaa and Aa Avg		0.0130		0.0048 0.0082
Jun-08	MKT Minus	Aaa and Aa Avg		(0.0843)		0.0049 -0.0892
Jul-08	MKT Minus	Aaa and Aa Avg		(0.0084)		0.0049 -0.0133
Aug-08	MKT Minus	Aaa and Aa Avg		0.0145		0.0049 0.0096
Sep-08	MKT Minus	Aaa and Aa Avg		(0.0891)		0.0049 -0.0940
Oct-08	MKT Minus	Aaa and Aa Avg		(0.1679)		0.0054 -0.1733
Nov-08	MKT Minus	Aaa and Aa Avg		(0.0718)		0.0054 -0.0772
Dec-08	MKT Minus	Aaa and Aa Avg		0.0106		0.0045 0.0061
Jan-09	MKT Minus	Aaa and Aa Avg		(0.0843)		0.0045 -0.0888
Feb-09	MKT Minus	Aaa and Aa Avg		(0.1065)		0.0047 -0.1112
Mar-09	MKT Minus	Aaa and Aa Avg		0.0876		0.0048 0.0828
Apr-09	MKT Minus	Aaa and Aa Avg		0.0957		0.0048 0.0909
May-09	MKT Minus	Aaa and Aa Avg		0.0559		0.0049 0.0510
Jun-09	MKT Minus	Aaa and Aa Avg		0.0020		0.0049 -0.0029
Jul-09	MKT Minus	Aaa and Aa Avg		0.0756		0.0046 0.0710
Aug-09	MKT Minus	Aaa and Aa Avg		0.0361		0.0045 0.0316
Sep-09	MKT Minus	Aaa and Aa Avg		0.0373		0.0043 0.0330
Oct-09	MKT Minus	Aaa and Aa Avg		(0.0186)		0.0043 -0.0229
Nov-09	MKT Minus	Aaa and Aa Avg		0.0600		0.0044 0.0556
Dec-09	MKT Minus	Aaa and Aa Avg		0.0193		0.0045 0.0148
Jan-10	MKT Minus	Aaa and Aa Avg		(0.0360)		0.0045 -0.0405
Feb-10	MKT Minus	Aaa and Aa Avg		0.0310		0.0046 0.0264
Mar-10	MKT Minus	Aaa and Aa Avg		0.0603		0.0045 0.0558
Apr-10	MKT Minus	Aaa and Aa Avg		0.0158		0.0045 0.0113
May-10	MKT Minus	Aaa and Aa Avg		(0.0799)		0.0043 -0.0842
Jun-10	MKT Minus	Aaa and Aa Avg		(0.0523)		0.0042 -0.0565
Jul-10	MKT Minus	Aaa and Aa Avg		0.0707		0.0040 0.0667
Aug-10	MKT Minus	Aaa and Aa Avg		(0.0451)		0.0038 -0.0489
Sep-10	MKT Minus	Aaa and Aa Avg		0.0892		0.0039 0.0853
Oct-10	MKT Minus	Aaa and Aa Avg		0.0380		0.0040 0.0340
Nov-10	MKT Minus	Aaa and Aa Avg		0.0001		0.0041 -0.0040
Dec-10	MKT Minus	Aaa and Aa Avg		0.0668		0.0043 0.0625

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Jan-11	MKT Minus			0.0237		0.0043 0.0194
Feb-11	MKT Minus			0.0343		0.0044 0.0299
Mar-11	MKT Minus			0.0004		0.0043 -0.0039
Apr-11	MKT Minus			0.0296		0.0044 0.0252
May-11	MKT Minus			(0.0113)		0.0042 -0.0155
Jun-11	MKT Minus			(0.0167)		0.0042 -0.0209
Jul-11	MKT Minus			(0.0203)		0.0042 -0.0245
Aug-11	MKT Minus			(0.0543)		0.0037 -0.0580
Sep-11	MKT Minus			(0.0703)		0.0035 -0.0738
Oct-11	MKT Minus			0.1093		0.0034 0.1059
Nov-11	MKT Minus			(0.0022)		0.0033 -0.0055
Dec-11	MKT Minus			0.0102		0.0033 0.0069
Jan-12	MKT Minus			0.0448		0.0033 0.0415
Feb-12	MKT Minus			0.0432		0.0033 0.0399
Mar-12	MKT Minus			0.0329		0.0034 0.0295
Apr-12	MKT Minus			(0.0063)		0.0034 -0.0097
May-12	MKT Minus			(0.0601)		0.0032 -0.0633
Jun-12	MKT Minus			0.0412		0.0031 0.0381
Jul-12	MKT Minus			0.0139		0.002892 0.0110
Aug-12	MKT Minus			0.0225		0.002954 0.0195
Sep-12	MKT Minus			0.0258		0.002988 0.0228
Oct-12	MKT Minus			(0.0185)		0.002958 -0.0215
Nov-12	MKT Minus			0.0058		0.002946 0.0029
Dec-12	MKT Minus			0.0091		0.003063 0.0060
Jan-13	MKT Minus			0.0518		0.003196 0.0486
Feb-13	MKT Minus			0.0136		0.003271 0.0103
Mar-13	MKT Minus			0.0375		0.003196 0.0343
Apr-13	MKT Minus			0.0193		0.003125 0.0162
May-13	MKT Minus			0.0234		0.003263 0.0201
Jun-13	MKT Minus			(0.0134)		0.003579 -0.0170
Jul-13	MKT Minus			0.0509		0.003667 0.0472
Aug-13	MKT Minus			(0.0290)		0.003821 -0.0328
Sep-13	MKT Minus			0.0314		0.003888 0.0275
Oct-13	MKT Minus			0.0460		0.0038 0.0422

Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	Aaa and Aa RP
Nov-13	MKT Minus Aaa and Aa Avg			0.0305		0.003875 0.0266
Dec-13	MKT Minus Aaa and Aa Avg			0.0253		0.003875 0.0214
Jan-14	MKT Minus Aaa and Aa Avg			(0.0346)		0.003758 -0.0384
Feb-14	MKT Minus Aaa and Aa Avg			0.0457		0.003713 0.0420

Unique Index Number	Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP	Trading Date
	Jan-26						0.0031		Jan-26
	Feb-26						0.0028		Feb-26
	Mar-26						0.0032		Mar-26
	Apr-26						0.0030		Apr-26
	May-26						0.0028		May-26
	Jun-26						0.0033		Jun-26
	Jul-26						0.0031		Jul-26
	Aug-26						0.0031		Aug-26
	Sep-26						0.0030		Sep-26
	Oct-26						0.0030		Oct-26
	Nov-26						0.0031		Nov-26
	Dec-26						0.0030		Dec-26
	Jan-27						0.0030		Jan-27
	Feb-27						0.0027		Feb-27
	Mar-27						0.0029		Mar-27
	Apr-27						0.0027		Apr-27
	May-27						0.0028		May-27
	Jun-27						0.0027		Jun-27
	Jul-27						0.0027		Jul-27
	Aug-27						0.0029		Aug-27
	Sep-27						0.0027		Sep-27
	Oct-27						0.0028		Oct-27
	Nov-27						0.0027		Nov-27
	Dec-27						0.0027		Dec-27
	Jan-28						0.0027		Jan-28
	Feb-28						0.0025		Feb-28
	Mar-28						0.0027		Mar-28
	Apr-28						0.0026		Apr-28
	May-28						0.0027		May-28
	Jun-28						0.0027		Jun-28
	Jul-28						0.0027		Jul-28
	Aug-28						0.0029		Aug-28
	Sep-28						0.0027		Sep-28

Oct-28	0.0030	Oct-28
Nov-28	0.0027	Nov-28
Dec-28	0.0029	Dec-28
Jan-29	0.0029	Jan-29
Feb-29	0.0027	Feb-29
Mar-29	0.0028	Mar-29
Apr-29	0.0034	Apr-29
May-29	0.0030	May-29
Jun-29	0.0029	Jun-29
Jul-29	0.0032	Jul-29
Aug-29	0.0030	Aug-29
Sep-29	0.0032	Sep-29
Oct-29	0.0031	Oct-29
Nov-29	0.0026	Nov-29
Dec-29	0.0031	Dec-29
Jan-30	0.0029	Jan-30
Feb-30	0.0026	Feb-30
Mar-30	0.0029	Mar-30
Apr-30	0.0027	Apr-30
May-30	0.0027	May-30
Jun-30	0.0029	Jun-30
Jul-30	0.0028	Jul-30
Aug-30	0.0026	Aug-30
Sep-30	0.0029	Sep-30
Oct-30	0.0027	Oct-30
Nov-30	0.0026	Nov-30
Dec-30	0.0028	Dec-30
Jan-31	0.0028	Jan-31
Feb-31	0.0026	Feb-31
Mar-31	0.0029	Mar-31
Apr-31	0.0027	Apr-31
May-31	0.0026	May-31
Jun-31	0.0028	Jun-31
Jul-31	0.0027	Jul-31
Aug-31	0.0027	Aug-31
Sep-31	0.0027	Sep-31

Oct-31	0.0029	Oct-31
Nov-31	0.0031	Nov-31
Dec-31	0.0032	Dec-31
Jan-32	0.0032	Jan-32
Feb-32	0.0032	Feb-32
Mar-32	0.0031	Mar-32
Apr-32	0.0030	Apr-32
May-32	0.0028	May-32
Jun-32	0.0028	Jun-32
Jul-32	0.0028	Jul-32
Aug-32	0.0028	Aug-32
Sep-32	0.0026	Sep-32
Oct-32	0.0027	Oct-32
Nov-32	0.0026	Nov-32
Dec-32	0.0027	Dec-32
Jan-33	0.0027	Jan-33
Feb-33	0.0023	Feb-33
Mar-33	0.0027	Mar-33
Apr-33	0.0025	Apr-33
May-33	0.0028	May-33
Jun-33	0.0025	Jun-33
Jul-33	0.0026	Jul-33
Aug-33	0.0026	Aug-33
Sep-33	0.0025	Sep-33
Oct-33	0.0026	Oct-33
Nov-33	0.0025	Nov-33
Dec-33	0.0028	Dec-33
Jan-34	0.0029	Jan-34
Feb-34	0.0024	Feb-34
Mar-34	0.0027	Mar-34
Apr-34	0.0025	Apr-34
May-34	0.0025	May-34
Jun-34	0.0024	Jun-34
Jul-34	0.0024	Jul-34
Aug-34	0.0024	Aug-34
Sep-34	0.0023	Sep-34

Oct-34	0.0027	Oct-34
Nov-34	0.0025	Nov-34
Dec-34	0.0025	Dec-34
Jan-35	0.0025	Jan-35
Feb-35	0.0021	Feb-35
Mar-35	0.0022	Mar-35
Apr-35	0.0023	Apr-35
May-35	0.0023	May-35
Jun-35	0.0022	Jun-35
Jul-35	0.0024	Jul-35
Aug-35	0.0023	Aug-35
Sep-35	0.0023	Sep-35
Oct-35	0.0023	Oct-35
Nov-35	0.0024	Nov-35
Dec-35	0.0024	Dec-35
Jan-36	0.0024	Jan-36
Feb-36	0.0023	Feb-36
Mar-36	0.0024	Mar-36
Apr-36	0.0022	Apr-36
May-36	0.0022	May-36
Jun-36	0.0024	Jun-36
Jul-36	0.0023	Jul-36
Aug-36	0.0023	Aug-36
Sep-36	0.0021	Sep-36
Oct-36	0.0023	Oct-36
Nov-36	0.0022	Nov-36
Dec-36	0.0022	Dec-36
Jan-37	0.0021	Jan-37
Feb-37	0.0020	Feb-37
Mar-37	0.0022	Mar-37
Apr-37	0.0023	Apr-37
May-37	0.0022	May-37
Jun-37	0.0025	Jun-37
Jul-37	0.0024	Jul-37
Aug-37	0.0023	Aug-37
Sep-37	0.0023	Sep-37

Oct-37	0.0023	Oct-37
Nov-37	0.0024	Nov-37
Dec-37	0.0023	Dec-37
Jan-38	0.0023	Jan-38
Feb-38	0.0021	Feb-38
Mar-38	0.0023	Mar-38
Apr-38	0.0022	Apr-38
May-38	0.0022	May-38
Jun-38	0.0021	Jun-38
Jul-38	0.0021	Jul-38
Aug-38	0.0022	Aug-38
Sep-38	0.0021	Sep-38
Oct-38	0.0022	Oct-38
Nov-38	0.0021	Nov-38
Dec-38	0.0022	Dec-38
Jan-39	0.0021	Jan-39
Feb-39	0.0019	Feb-39
Mar-39	0.0021	Mar-39
Apr-39	0.0019	Apr-39
May-39	0.0020	May-39
Jun-39	0.0018	Jun-39
Jul-39	0.0019	Jul-39
Aug-39	0.0018	Aug-39
Sep-39	0.0019	Sep-39
Oct-39	0.0023	Oct-39
Nov-39	0.0020	Nov-39
Dec-39	0.0019	Dec-39
Jan-40	0.0020	Jan-40
Feb-40	0.0018	Feb-40
Mar-40	0.0019	Mar-40
Apr-40	0.0018	Apr-40
May-40	0.0019	May-40
Jun-40	0.0019	Jun-40
Jul-40	0.0020	Jul-40
Aug-40	0.0019	Aug-40
Sep-40	0.0018	Sep-40

Oct-40	0.0018	Oct-40
Nov-40	0.0018	Nov-40
Dec-40	0.0017	Dec-40
Jan-41	0.0016	Jan-41
Feb-41	0.0016	Feb-41
Mar-41	0.0018	Mar-41
Apr-41	0.0017	Apr-41
May-41	0.0017	May-41
Jun-41	0.0016	Jun-41
Jul-41	0.0016	Jul-41
Aug-41	0.0016	Aug-41
Sep-41	0.0016	Sep-41
Oct-41	0.0016	Oct-41
Nov-41	0.0014	Nov-41
Dec-41	0.0016	Dec-41
Jan-42	0.0021	Jan-42
Feb-42	0.0019	Feb-42
Mar-42	0.0021	Mar-42
Apr-42	0.0020	Apr-42
May-42	0.0019	May-42
Jun-42	0.0021	Jun-42
Jul-42	0.0021	Jul-42
Aug-42	0.0021	Aug-42
Sep-42	0.0020	Sep-42
Oct-42	0.0021	Oct-42
Nov-42	0.0020	Nov-42
Dec-42	0.0021	Dec-42
Jan-43	0.0020	Jan-43
Feb-43	0.0019	Feb-43
Mar-43	0.0021	Mar-43
Apr-43	0.0020	Apr-43
May-43	0.0019	May-43
Jun-43	0.0021	Jun-43
Jul-43	0.0021	Jul-43
Aug-43	0.0021	Aug-43
Sep-43	0.0020	Sep-43

Oct-43	0.0020	Oct-43
Nov-43	0.0021	Nov-43
Dec-43	0.0021	Dec-43
Jan-44	0.0021	Jan-44
Feb-44	0.0020	Feb-44
Mar-44	0.0021	Mar-44
Apr-44	0.0020	Apr-44
May-44	0.0022	May-44
Jun-44	0.0020	Jun-44
Jul-44	0.0021	Jul-44
Aug-44	0.0021	Aug-44
Sep-44	0.0020	Sep-44
Oct-44	0.0021	Oct-44
Nov-44	0.0020	Nov-44
Dec-44	0.0020	Dec-44
Jan-45	0.0021	Jan-45
Feb-45	0.0018	Feb-45
Mar-45	0.0020	Mar-45
Apr-45	0.0019	Apr-45
May-45	0.0019	May-45
Jun-45	0.0019	Jun-45
Jul-45	0.0018	Jul-45
Aug-45	0.0019	Aug-45
Sep-45	0.0018	Sep-45
Oct-45	0.0019	Oct-45
Nov-45	0.0018	Nov-45
Dec-45	0.0018	Dec-45
Jan-46	0.0017	Jan-46
Feb-46	0.0015	Feb-46
Mar-46	0.0016	Mar-46
Apr-46	0.0017	Apr-46
May-46	0.0018	May-46
Jun-46	0.0016	Jun-46
Jul-46	0.0019	Jul-46
Aug-46	0.0017	Aug-46
Sep-46	0.0018	Sep-46

Oct-46	0.0019	Oct-46
Nov-46	0.0018	Nov-46
Dec-46	0.0019	Dec-46
Jan-47	0.0018	Jan-47
Feb-47	0.0016	Feb-47
Mar-47	0.0018	Mar-47
Apr-47	0.0017	Apr-47
May-47	0.0017	May-47
Jun-47	0.0019	Jun-47
Jul-47	0.0018	Jul-47
Aug-47	0.0017	Aug-47
Sep-47	0.0018	Sep-47
Oct-47	0.0018	Oct-47
Nov-47	0.0017	Nov-47
Dec-47	0.0021	Dec-47
Jan-48	0.0020	Jan-48
Feb-48	0.0019	Feb-48
Mar-48	0.0022	Mar-48
Apr-48	0.0020	Apr-48
May-48	0.0018	May-48
Jun-48	0.0021	Jun-48
Jul-48	0.0019	Jul-48
Aug-48	0.0021	Aug-48
Sep-48	0.0020	Sep-48
Oct-48	0.0019	Oct-48
Nov-48	0.0021	Nov-48
Dec-48	0.0020	Dec-48
Jan-49	0.0020	Jan-49
Feb-49	0.0018	Feb-49
Mar-49	0.0019	Mar-49
Apr-49	0.0018	Apr-49
May-49	0.0020	May-49
Jun-49	0.0019	Jun-49
Jul-49	0.0017	Jul-49
Aug-49	0.0019	Aug-49
Sep-49	0.0017	Sep-49

Oct-49	0.0018	Oct-49
Nov-49	0.0017	Nov-49
Dec-49	0.0017	Dec-49
Jan-50	0.0018	Jan-50
Feb-50	0.0016	Feb-50
Mar-50	0.0018	Mar-50
Apr-50	0.0016	Apr-50
May-50	0.0019	May-50
Jun-50	0.0017	Jun-50
Jul-50	0.0018	Jul-50
Aug-50	0.0018	Aug-50
Sep-50	0.0017	Sep-50
Oct-50	0.0019	Oct-50
Nov-50	0.0018	Nov-50
Dec-50	0.0018	Dec-50
Jan-51	0.0020	Jan-51
Feb-51	0.0017	Feb-51
Mar-51	0.0019	Mar-51
Apr-51	0.0020	Apr-51
May-51	0.0021	May-51
Jun-51	0.0020	Jun-51
Jul-51	0.0023	Jul-51
Aug-51	0.0021	Aug-51
Sep-51	0.0019	Sep-51
Oct-51	0.0023	Oct-51
Nov-51	0.0021	Nov-51
Dec-51	0.0022	Dec-51
Jan-52	0.0023	Jan-52
Feb-52	0.0021	Feb-52
Mar-52	0.0023	Mar-52
Apr-52	0.0022	Apr-52
May-52	0.0020	May-52
Jun-52	0.0022	Jun-52
Jul-52	0.0022	Jul-52
Aug-52	0.0021	Aug-52
Sep-52	0.0023	Sep-52

Oct-52	0.0023	Oct-52
Nov-52	0.0021	Nov-52
Dec-52	0.0024	Dec-52
Jan-53	0.0023	Jan-53
Feb-53	0.0021	Feb-53
Mar-53	0.0025	Mar-53
Apr-53	0.0024	Apr-53
May-53	0.0024	May-53
Jun-53	0.0027	Jun-53
Jul-53	0.0025	Jul-53
Aug-53	0.0025	Aug-53
Sep-53	0.0025	Sep-53
Oct-53	0.0023	Oct-53
Nov-53	0.0024	Nov-53
Dec-53	0.0024	Dec-53
Jan-54	0.0023	Jan-54
Feb-54	0.0022	Feb-54
Mar-54	0.0025	Mar-54
Apr-54	0.0022	Apr-54
May-54	0.0020	May-54
Jun-54	0.0025	Jun-54
Jul-54	0.0022	Jul-54
Aug-54	0.0023	Aug-54
Sep-54	0.0022	Sep-54
Oct-54	0.0021	Oct-54
Nov-54	0.0023	Nov-54
Dec-54	0.0023	Dec-54
Jan-55	0.0022	Jan-55
Feb-55	0.0022	Feb-55
Mar-55	0.0024	Mar-55
Apr-55	0.0022	Apr-55
May-55	0.0025	May-55
Jun-55	0.0023	Jun-55
Jul-55	0.0023	Jul-55
Aug-55	0.0027	Aug-55
Sep-55	0.0024	Sep-55

Oct-55	0.0025	Oct-55
Nov-55	0.0024	Nov-55
Dec-55	0.0024	Dec-55
Jan-56	0.0025	Jan-56
Feb-56	0.0023	Feb-56
Mar-56	0.0023	Mar-56
Apr-56	0.0026	Apr-56
May-56	0.0026	May-56
Jun-56	0.0023	Jun-56
Jul-56	0.0026	Jul-56
Aug-56	0.0026	Aug-56
Sep-56	0.0025	Sep-56
Oct-56	0.0029	Oct-56
Nov-56	0.0027	Nov-56
Dec-56	0.0028	Dec-56
Jan-57	0.0029	Jan-57
Feb-57	0.0025	Feb-57
Mar-57	0.0026	Mar-57
Apr-57	0.0029	Apr-57
May-57	0.0029	May-57
Jun-57	0.0025	Jun-57
Jul-57	0.0033	Jul-57
Aug-57	0.0030	Aug-57
Sep-57	0.0031	Sep-57
Oct-57	0.0031	Oct-57
Nov-57	0.0029	Nov-57
Dec-57	0.0029	Dec-57
Jan-58	0.0027	Jan-58
Feb-58	0.0025	Feb-58
Mar-58	0.0027	Mar-58
Apr-58	0.0026	Apr-58
May-58	0.0024	May-58
Jun-58	0.0027	Jun-58
Jul-58	0.0027	Jul-58
Aug-58	0.0027	Aug-58
Sep-58	0.0032	Sep-58

Oct-58	0.0032	Oct-58
Nov-58	0.0028	Nov-58
Dec-58	0.0033	Dec-58
Jan-59	0.0031	Jan-59
Feb-59	0.0031	Feb-59
Mar-59	0.0035	Mar-59
Apr-59	0.0033	Apr-59
May-59	0.0033	May-59
Jun-59	0.0036	Jun-59
Jul-59	0.0035	Jul-59
Aug-59	0.0035	Aug-59
Sep-59	0.0034	Sep-59
Oct-59	0.0035	Oct-59
Nov-59	0.0035	Nov-59
Dec-59	0.0036	Dec-59
Jan-60	0.0035	Jan-60
Feb-60	0.0037	Feb-60
Mar-60	0.0036	Mar-60
Apr-60	0.0032	Apr-60
May-60	0.0037	May-60
Jun-60	0.0034	Jun-60
Jul-60	0.0032	Jul-60
Aug-60	0.0034	Aug-60
Sep-60	0.0032	Sep-60
Oct-60	0.0033	Oct-60
Nov-60	0.0032	Nov-60
Dec-60	0.0033	Dec-60
Jan-61	0.0033	Jan-61
Feb-61	0.0030	Feb-61
Mar-61	0.0031	Mar-61
Apr-61	0.0031	Apr-61
May-61	0.0034	May-61
Jun-61	0.0032	Jun-61
Jul-61	0.0033	Jul-61
Aug-61	0.0033	Aug-61
Sep-61	0.0032	Sep-61

Oct-61	0.0034	Oct-61
Nov-61	0.0032	Nov-61
Dec-61	0.0031	Dec-61
Jan-62	0.0037	Jan-62
Feb-62	0.0032	Feb-62
Mar-62	0.0033	Mar-62
Apr-62	0.0033	Apr-62
May-62	0.0032	May-62
Jun-62	0.0030	Jun-62
Jul-62	0.0034	Jul-62
Aug-62	0.0034	Aug-62
Sep-62	0.0030	Sep-62
Oct-62	0.0035	Oct-62
Nov-62	0.0031	Nov-62
Dec-62	0.0032	Dec-62
Jan-63	0.0032	Jan-63
Feb-63	0.0029	Feb-63
Mar-63	0.0031	Mar-63
Apr-63	0.0034	Apr-63
May-63	0.0033	May-63
Jun-63	0.0030	Jun-63
Jul-63	0.0036	Jul-63
Aug-63	0.0033	Aug-63
Sep-63	0.0034	Sep-63
Oct-63	0.0034	Oct-63
Nov-63	0.0032	Nov-63
Dec-63	0.0036	Dec-63
Jan-64	0.0035	Jan-64
Feb-64	0.0032	Feb-64
Mar-64	0.0037	Mar-64
Apr-64	0.0035	Apr-64
May-64	0.0032	May-64
Jun-64	0.0038	Jun-64
Jul-64	0.0035	Jul-64
Aug-64	0.0035	Aug-64
Sep-64	0.0034	Sep-64

Oct-64	0.0034	Oct-64
Nov-64	0.0035	Nov-64
Dec-64	0.0035	Dec-64
Jan-65	0.0033	Jan-65
Feb-65	0.0032	Feb-65
Mar-65	0.0038	Mar-65
Apr-65	0.0033	Apr-65
May-65	0.0033	May-65
Jun-65	0.0038	Jun-65
Jul-65	0.0034	Jul-65
Aug-65	0.0037	Aug-65
Sep-65	0.0035	Sep-65
Oct-65	0.0034	Oct-65
Nov-65	0.0037	Nov-65
Dec-65	0.0037	Dec-65
Jan-66	0.0038	Jan-66
Feb-66	0.0034	Feb-66
Mar-66	0.0040	Mar-66
Apr-66	0.0036	Apr-66
May-66	0.0041	May-66
Jun-66	0.0039	Jun-66
Jul-66	0.0038	Jul-66
Aug-66	0.0043	Aug-66
Sep-66	0.0041	Sep-66
Oct-66	0.0040	Oct-66
Nov-66	0.0038	Nov-66
Dec-66	0.0039	Dec-66
Jan-67	0.0040	Jan-67
Feb-67	0.0034	Feb-67
Mar-67	0.0039	Mar-67
Apr-67	0.0035	Apr-67
May-67	0.0043	May-67
Jun-67	0.0039	Jun-67
Jul-67	0.0043	Jul-67
Aug-67	0.0042	Aug-67
Sep-67	0.0040	Sep-67

Oct-67	0.0045	Oct-67
Nov-67	0.0045	Nov-67
Dec-67	0.0044	Dec-67
Jan-68	0.0050	Jan-68
Feb-68	0.0042	Feb-68
Mar-68	0.0043	Mar-68
Apr-68	0.0049	Apr-68
May-68	0.0046	May-68
Jun-68	0.0042	Jun-68
Jul-68	0.0048	Jul-68
Aug-68	0.0042	Aug-68
Sep-68	0.0044	Sep-68
Oct-68	0.0045	Oct-68
Nov-68	0.0043	Nov-68
Dec-68	0.0049	Dec-68
Jan-69	0.0050	Jan-69
Feb-69	0.0046	Feb-69
Mar-69	0.0047	Mar-69
Apr-69	0.0055	Apr-69
May-69	0.0047	May-69
Jun-69	0.0055	Jun-69
Jul-69	0.0052	Jul-69
Aug-69	0.0048	Aug-69
Sep-69	0.0055	Sep-69
Oct-69	0.0057	Oct-69
Nov-69	0.0049	Nov-69
Dec-69	0.0060	Dec-69
Jan-70	0.0056	Jan-70
Feb-70	0.0052	Feb-70
Mar-70	0.0056	Mar-70
Apr-70	0.0054	Apr-70
May-70	0.0055	May-70
Jun-70	0.0064	Jun-70
Jul-70	0.0059	Jul-70
Aug-70	0.0057	Aug-70
Sep-70	0.0056	Sep-70

Oct-70	0.0055	Oct-70
Nov-70	0.0058	Nov-70
Dec-70	0.0053	Dec-70
Jan-71	0.0051	Jan-71
Feb-71	0.0046	Feb-71
Mar-71	0.0056	Mar-71
Apr-71	0.0048	Apr-71
May-71	0.0047	May-71
Jun-71	0.0056	Jun-71
Jul-71	0.0052	Jul-71
Aug-71	0.0055	Aug-71
Sep-71	0.0049	Sep-71
Oct-71	0.0047	Oct-71
Nov-71	0.0051	Nov-71
Dec-71	0.0050	Dec-71
Jan-72	0.0050	Jan-72
Feb-72	0.0047	Feb-72
Mar-72	0.0049	Mar-72
Apr-72	0.0048	Apr-72
May-72	0.0055	May-72
Jun-72	0.0049	Jun-72
Jul-72	0.0051	Jul-72
Aug-72	0.0049	Aug-72
Sep-72	0.0047	Sep-72
Oct-72	0.0052	Oct-72
Nov-72	0.0048	Nov-72
Dec-72	0.0045	Dec-72
Jan-73	0.0054	Jan-73
Feb-73	0.0051	Feb-73
Mar-73	0.0056	Mar-73
Apr-73	0.0057	Apr-73
May-73	0.0058	May-73
Jun-73	0.0055	Jun-73
Jul-73	0.0061	Jul-73
Aug-73	0.0062	Aug-73
Sep-73	0.0055	Sep-73

Oct-73	0.0063	Oct-73
Nov-73	0.0056	Nov-73
Dec-73	0.0060	Dec-73
Jan-74	0.0061	Jan-74
Feb-74	0.0055	Feb-74
Mar-74	0.0058	Mar-74
Apr-74	0.0068	Apr-74
May-74	0.0068	May-74
Jun-74	0.0061	Jun-74
Jul-74	0.0072	Jul-74
Aug-74	0.0065	Aug-74
Sep-74	0.0071	Sep-74
Oct-74	0.0070	Oct-74
Nov-74	0.0062	Nov-74
Dec-74	0.0067	Dec-74
Jan-75	0.0068	Jan-75
Feb-75	0.0060	Feb-75
Mar-75	0.0066	Mar-75
Apr-75	0.0067	Apr-75
May-75	0.0067	May-75
Jun-75	0.0070	Jun-75
Jul-75	0.0068	Jul-75
Aug-75	0.0065	Aug-75
Sep-75	0.0073	Sep-75
Oct-75	0.0072	Oct-75
Nov-75	0.0061	Nov-75
Dec-75	0.0074	Dec-75
Jan-76	0.0065	Jan-76
Feb-76	0.0060	Feb-76
Mar-76	0.0071	Mar-76
Apr-76	0.0064	Apr-76
May-76	0.0059	May-76
Jun-76	0.0073	Jun-76
Jul-76	0.0065	Jul-76
Aug-76	0.0069	Aug-76
Sep-76	0.0064	Sep-76

Oct-76	0.0061	Oct-76
Nov-76	0.0066	Nov-76
Dec-76	0.0063	Dec-76
Jan-77	0.0059	Jan-77
Feb-77	0.0057	Feb-77
Mar-77	0.0065	Mar-77
Apr-77	0.0061	Apr-77
May-77	0.0067	May-77
Jun-77	0.0062	Jun-77
Jul-77	0.0059	Jul-77
Aug-77	0.0067	Aug-77
Sep-77	0.0061	Sep-77
Oct-77	0.0063	Oct-77
Nov-77	0.0063	Nov-77
Dec-77	0.0062	Dec-77
Jan-78	0.0069	Jan-78
Feb-78	0.0060	Feb-78
Mar-78	0.0069	Mar-78
Apr-78	0.0063	Apr-78
May-78	0.0075	May-78
Jun-78	0.0069	Jun-78
Jul-78	0.0073	Jul-78
Aug-78	0.0070	Aug-78
Sep-78	0.0065	Sep-78
Oct-78	0.0073	Oct-78
Nov-78	0.0071	Nov-78
Dec-78	0.0068	Dec-78
Jan-79	0.0079	Jan-79
Feb-79	0.0065	Feb-79
Mar-79	0.0074	Mar-79
Apr-79	0.0076	Apr-79
May-79	0.0077	May-79
Jun-79	0.0071	Jun-79
Jul-79	0.0076	Jul-79
Aug-79	0.0073	Aug-79
Sep-79	0.0068	Sep-79

Oct-79	0.0082	Oct-79
Nov-79	0.0083	Nov-79
Dec-79	0.0083	Dec-79
Jan-80	0.0083	Jan-80
Feb-80	0.0084	Feb-80
Mar-80	0.0099	Mar-80
Apr-80	0.0100	Apr-80
May-80	0.0087	May-80
Jun-80	0.0086	Jun-80
Jul-80	0.0084	Jul-80
Aug-80	0.0081	Aug-80
Sep-80	0.0097	Sep-80
Oct-80	0.0097	Oct-80
Nov-80	0.0091	Nov-80
Dec-80	0.0108	Dec-80
Jan-81	0.0094	Jan-81
Feb-81	0.0088	Feb-81
Mar-81	0.0111	Mar-81
Apr-81	0.0101	Apr-81
May-81	0.0104	May-81
Jun-81	0.0109	Jun-81
Jul-81	0.0109	Jul-81
Aug-81	0.0110	Aug-81
Sep-81	0.0114	Sep-81
Oct-81	0.0117	Oct-81
Nov-81	0.0113	Nov-81
Dec-81	0.0100	Dec-81
Jan-82	0.0108	Jan-82
Feb-82	0.0103	Feb-82
Mar-82	0.0124	Mar-82
Apr-82	0.0112	Apr-82
May-82	0.0101	May-82
Jun-82	0.0120	Jun-82
Jul-82	0.0114	Jul-82
Aug-82	0.0112	Aug-82
Sep-82	0.0100	Sep-82

	Oct-82					0.0091		Oct-82	
	Nov-82					0.0094		Nov-82	
	Dec-82					0.0093		Dec-82	
	Jan-83					0.0087		Jan-83	
	Feb-83					0.0081		Feb-83	
	Mar-83					0.0089		Mar-83	
	Apr-83					0.0085		Apr-83	
	May-83					0.0091		May-83	
	Jun-83					0.0090		Jun-83	
	Jul-83					0.0088		Jul-83	
	Aug-83					0.0103		Aug-83	
	Sep-83					0.0096		Sep-83	
	Oct-83					0.0095		Oct-83	
	Nov-83					0.0094		Nov-83	
60	Dec-83	ENERGAS CO	EGAS	-17	-66	0.4	0.0094	Dec-83	
60	Jan-84	ENERGAS CO	EGAS	-17.125	0.007353	0	0.0103	-0.0029	Jan-84
60	Feb-84	ENERGAS CO	EGAS	-17.25	0.007299	0	0.0092	-0.0019	Feb-84
60	Mar-84	ENERGAS CO	EGAS	-17.813	0.032609	0	0.0098	0.0228	Mar-84
60	Apr-84	ENERGAS CO	EGAS	-16.75	-0.05965	0	0.0104	-0.0700	Apr-84
60	May-84	ENERGAS CO	EGAS	-16.625	0.016418	0.4	0.0103	0.0061	May-84
60	Jun-84	ENERGAS CO	EGAS	-17.625	0.06015	0	0.0106	0.0496	Jun-84
60	Jul-84	ENERGAS CO	EGAS	-16.75	-0.04965	0	0.0116	-0.0612	Jul-84
60	Aug-84	ENERGAS CO	EGAS	-15.625	-0.04328	0.4	0.0106	-0.0539	Aug-84
60	Sep-84	ENERGAS CO	EGAS	-17	0.088	0	0.0094	0.0786	Sep-84
60	Oct-84	ENERGAS CO	EGAS	-17.75	0.044118	0	0.0108	0.0333	Oct-84
60	Nov-84	ENERGAS CO	EGAS	-19.25	0.107042	0.4	0.0091	0.0979	Nov-84
60	Dec-84	ENERGAS CO	EGAS	-20	0.038961	0	0.0098	0.0292	Dec-84
60	Jan-85	ENERGAS CO	EGAS	-21.125	0.05625	0	0.0096	0.0467	Jan-85
60	Feb-85	ENERGAS CO	EGAS	-21.25	0.024852	0.4	0.0082	0.0167	Feb-85
60	Mar-85	ENERGAS CO	EGAS	20.75	-0.02353	0	0.0094	-0.0329	Mar-85
60	Apr-85	ENERGAS CO	EGAS	23	0.108434	0	0.0102	0.0982	Apr-85
60	May-85	ENERGAS CO	EGAS	26	0.147826	0.4	0.0097	0.1381	May-85
60	Jun-85	ENERGAS CO	EGAS	14.25	0.096154	0	0.0080	0.0882	Jun-85
60	Jul-85	ENERGAS CO	EGAS	13	-0.08772	0	0.0094	-0.0971	Jul-85
60	Aug-85	ENERGAS CO	EGAS	13	0.016923	0.22	0.0085	0.0084	Aug-85
60	Sep-85	ENERGAS CO	EGAS	13.125	0.009615	0	0.0088	0.0008	Sep-85

60	Oct-85	ENERGAS CO	EGAS	14.875	0.133333	0	0.0089	0.1244	Oct-85
60	Nov-85	ENERGAS CO	EGAS	16.375	0.117647	0.25	0.0081	0.1095	Nov-85
60	Dec-85	ENERGAS CO	EGAS	16	-0.0229	0	0.0086	-0.0315	Dec-85
60	Jan-86	ENERGAS CO	EGAS	17.125	0.070312	0	0.0079	0.0624	Jan-86
60	Feb-86	ENERGAS CO	EGAS	15.625	-0.07299	0.25	0.0073	-0.0803	Feb-86
60	Mar-86	ENERGAS CO	EGAS	16.375	0.048	0	0.0071	0.0409	Mar-86
60	Apr-86	ENERGAS CO	EGAS	14.375	-0.12214	0	0.0063	-0.1284	Apr-86
60	May-86	ENERGAS CO	EGAS	15.25	0.078261	0.25	0.0062	0.0721	May-86
60	Jun-86	ENERGAS CO	EGAS	16.25	0.065574	0	0.0070	0.0586	Jun-86
60	Jul-86	ENERGAS CO	EGAS	14.25	-0.12308	0	0.0066	-0.1297	Jul-86
60	Aug-86	ENERGAS CO	EGAS	16	0.140351	0.25	0.0063	0.1341	Aug-86
60	Sep-86	ENERGAS CO	EGAS	15.875	-0.00781	0	0.0065	-0.0143	Sep-86
60	Oct-86	ENERGAS CO	EGAS	16.125	0.015748	0	0.0069	0.0088	Oct-86
60	Nov-86	ENERGAS CO	EGAS	16	0.007752	0.25	0.0059	0.0019	Nov-86
60	Dec-86	ENERGAS CO	EGAS	14.875	-0.07031	0	0.0070	-0.0773	Dec-86
60	Jan-87	ENERGAS CO	EGAS	15.625	0.05042	0	0.0064	0.0440	Jan-87
60	Feb-87	ENERGAS CO	EGAS	14.75	-0.04	0.25	0.0059	-0.0459	Feb-87
60	Mar-87	ENERGAS CO	EGAS	14.125	-0.04237	0	0.0066	-0.0490	Mar-87
60	Apr-87	ENERGAS CO	EGAS	14.75	0.044248	0	0.0065	0.0377	Apr-87
60	May-87	ENERGAS CO	EGAS	13.75	-0.05085	0.25	0.0066	-0.0574	May-87
60	Jun-87	ENERGAS CO	EGAS	14.125	0.027273	0	0.0075	0.0198	Jun-87
60	Jul-87	ENERGAS CO	EGAS	13.375	-0.0531	0	0.0073	-0.0604	Jul-87
60	Aug-87	ENERGAS CO	EGAS	14.25	0.084112	0.25	0.0075	0.0766	Aug-87
60	Sep-87	ENERGAS CO	EGAS	13.875	-0.02632	0	0.0075	-0.0338	Sep-87
60	Oct-87	ENERGAS CO	EGAS	12.5	-0.0991	0	0.0079	-0.1070	Oct-87
60	Nov-87	ENERGAS CO	EGAS	12.75	0.04	0.25	0.0075	0.0325	Nov-87
60	Dec-87	ENERGAS CO	EGAS	12.25	-0.03922	0	0.0078	-0.0470	Dec-87
60	Jan-88	ENERGAS CO	EGAS	13.875	0.132653	0	0.0072	0.1255	Jan-88
60	Feb-88	ENERGAS CO	EGAS	15.375	0.126126	0.25	0.0071	0.1190	Feb-88
60	Mar-88	ENERGAS CO	EGAS	15.625	0.01626	0	0.0072	0.0091	Mar-88
60	Apr-88	ENERGAS CO	EGAS	15.625	0	0	0.0070	-0.0070	Apr-88
60	May-88	ENERGAS CO	EGAS	15	-0.024	0.25	0.0078	-0.0318	May-88
60	Jun-88	ENERGAS CO	EGAS	15.375	0.025	0	0.0076	0.0174	Jun-88
60	Jul-88	ENERGAS CO	EGAS	16.375	0.065041	0	0.0071	0.0579	Jul-88
60	Aug-88	ENERGAS CO	EGAS	15.125	-0.06107	0.25	0.0083	-0.0694	Aug-88
60	Sep-88	ENERGAS CO	EGAS	16.125	0.066116	0	0.0076	0.0585	Sep-88

60	Oct-88	ATMOS ENERGY CORP	ATO	17	0.054264	0	0.0076	0.0467	Oct-88
60	Nov-88	ATMOS ENERGY CORP	ATO	16.25	-0.02765	0.28	0.0070	-0.0346	Nov-88
60	Dec-88	ATMOS ENERGY CORP	ATO	16.25	0	0	0.0075	-0.0075	Dec-88
60	Jan-89	ATMOS ENERGY CORP	ATO	15.375	-0.05385	0	0.0080	-0.0618	Jan-89
60	Feb-89	ATMOS ENERGY CORP	ATO	15.375	0.018211	0.28	0.0069	0.0113	Feb-89
60	Mar-89	ATMOS ENERGY CORP	ATO	15.625	0.01626	0	0.0079	0.0084	Mar-89
60	Apr-89	ATMOS ENERGY CORP	ATO	15.5	-0.008	0	0.0070	-0.0150	Apr-89
60	May-89	ATMOS ENERGY CORP	ATO	15.25	0.001935	0.28	0.0080	-0.0061	May-89
60	Jun-89	ATMOS ENERGY CORP	ATO	15	-0.01639	0	0.0070	-0.0234	Jun-89
60	Jul-89	ATMOS ENERGY CORP	ATO	16	0.066667	0	0.0068	0.0599	Jul-89
60	Aug-89	ATMOS ENERGY CORP	ATO	16.125	0.025313	0.28	0.0066	0.0187	Aug-89
60	Sep-89	ATMOS ENERGY CORP	ATO	16.625	0.031008	0	0.0065	0.0245	Sep-89
60	Oct-89	ATMOS ENERGY CORP	ATO	16.25	-0.02256	0	0.0072	-0.0298	Oct-89
60	Nov-89	ATMOS ENERGY CORP	ATO	16.625	0.040923	0.29	0.0064	0.0345	Nov-89
60	Dec-89	ATMOS ENERGY CORP	ATO	17.875	0.075188	0	0.0064	0.0688	Dec-89
60	Jan-90	ATMOS ENERGY CORP	ATO	17.625	-0.01399	0	0.0073	-0.0213	Jan-90
60	Feb-90	ATMOS ENERGY CORP	ATO	17.5	0.009362	0.29	0.0066	0.0028	Feb-90
60	Mar-90	ATMOS ENERGY CORP	ATO	18	0.028571	0	0.0071	0.0215	Mar-90
60	Apr-90	ATMOS ENERGY CORP	ATO	16.875	-0.0625	0	0.0075	-0.0700	Apr-90
60	May-90	ATMOS ENERGY CORP	ATO	17.125	0.032	0.29	0.0075	0.0245	May-90
60	Jun-90	ATMOS ENERGY CORP	ATO	16.625	-0.0292	0	0.0068	-0.0360	Jun-90
60	Jul-90	ATMOS ENERGY CORP	ATO	17.25	0.037594	0	0.0074	0.0302	Jul-90
60	Aug-90	ATMOS ENERGY CORP	ATO	18	0.06029	0.29	0.0071	0.0532	Aug-90
60	Sep-90	ATMOS ENERGY CORP	ATO	16.875	-0.0625	0	0.0069	-0.0694	Sep-90
60	Oct-90	ATMOS ENERGY CORP	ATO	-16.5	-0.02222	0	0.0081	-0.0303	Oct-90
60	Nov-90	ATMOS ENERGY CORP	ATO	16.75	0.033333	0.3	0.0071	0.0262	Nov-90
60	Dec-90	ATMOS ENERGY CORP	ATO	16.625	-0.00746	0	0.0072	-0.0147	Dec-90
60	Jan-91	ATMOS ENERGY CORP	ATO	15.75	-0.05263	0	0.0071	-0.0597	Jan-91
60	Feb-91	ATMOS ENERGY CORP	ATO	17.25	0.114286	0.3	0.0064	0.1079	Feb-91
60	Mar-91	ATMOS ENERGY CORP	ATO	17	-0.01449	0	0.0064	-0.0209	Mar-91
60	Apr-91	ATMOS ENERGY CORP	ATO	16.625	-0.02206	0	0.0076	-0.0297	Apr-91
60	May-91	ATMOS ENERGY CORP	ATO	17.625	0.078195	0.3	0.0068	0.0714	May-91
60	Jun-91	ATMOS ENERGY CORP	ATO	17.5	-0.00709	0	0.0063	-0.0134	Jun-91
60	Jul-91	ATMOS ENERGY CORP	ATO	18	0.028571	0	0.0076	0.0210	Jul-91
60	Aug-91	ATMOS ENERGY CORP	ATO	19.75	0.113889	0.3	0.0068	0.1071	Aug-91
60	Sep-91	ATMOS ENERGY CORP	ATO	21	0.063291	0	0.0068	0.0565	Sep-91

60	Oct-91	ATMOS ENERGY CORP	ATO	20.125	-0.04167	0	0.0065	-0.0482	Oct-91
60	Nov-91	ATMOS ENERGY CORP	ATO	20.75	0.04646	0.31	0.0060	0.0405	Nov-91
60	Dec-91	ATMOS ENERGY CORP	ATO	23	0.108434	0	0.0068	0.1016	Dec-91
60	Jan-92	ATMOS ENERGY CORP	ATO	20.75	-0.09783	0	0.0061	-0.1039	Jan-92
60	Feb-92	ATMOS ENERGY CORP	ATO	20.375	-0.00313	0.31	0.0059	-0.0090	Feb-92
60	Mar-92	ATMOS ENERGY CORP	ATO	20	-0.01841	0	0.0067	-0.0251	Mar-92
60	Apr-92	ATMOS ENERGY CORP	ATO	19.75	-0.0125	0	0.0065	-0.0190	Apr-92
60	May-92	ATMOS ENERGY CORP	ATO	20	0.028354	0.31	0.0061	0.0223	May-92
60	Jun-92	ATMOS ENERGY CORP	ATO	19.5	-0.025	0	0.0067	-0.0317	Jun-92
60	Jul-92	ATMOS ENERGY CORP	ATO	20.375	0.044872	0	0.0063	0.0386	Jul-92
60	Aug-92	ATMOS ENERGY CORP	ATO	22.75	0.131779	0.31	0.0060	0.1258	Aug-92
60	Sep-92	ATMOS ENERGY CORP	ATO	22.375	-0.01648	0	0.0058	-0.0223	Sep-92
60	Oct-92	ATMOS ENERGY CORP	ATO	22.25	-0.00559	0	0.0057	-0.0113	Oct-92
60	Nov-92	ATMOS ENERGY CORP	ATO	23.25	0.059326	0.32	0.0061	0.0532	Nov-92
60	Dec-92	ATMOS ENERGY CORP	ATO	23.5	0.010753	0	0.0063	0.0045	Dec-92
60	Jan-93	ATMOS ENERGY CORP	ATO	23.375	-0.00532	0	0.0059	-0.0112	Jan-93
60	Feb-93	ATMOS ENERGY CORP	ATO	25.125	0.088556	0.32	0.0055	0.0831	Feb-93
60	Mar-93	ATMOS ENERGY CORP	ATO	24.875	-0.00995	0	0.0063	-0.0163	Mar-93
60	Apr-93	ATMOS ENERGY CORP	ATO	27	0.085427	0	0.0057	0.0797	Apr-93
60	May-93	ATMOS ENERGY CORP	ATO	28	0.048889	0.32	0.0052	0.0437	May-93
60	Jun-93	ATMOS ENERGY CORP	ATO	28.125	0.004464	0	0.0062	-0.0017	Jun-93
60	Jul-93	ATMOS ENERGY CORP	ATO	29.625	0.053333	0	0.0054	0.0479	Jul-93
60	Aug-93	ATMOS ENERGY CORP	ATO	30.375	0.036118	0.32	0.0056	0.0305	Aug-93
60	Sep-93	ATMOS ENERGY CORP	ATO	30.5	0.004115	0	0.0050	-0.0009	Sep-93
60	Oct-93	ATMOS ENERGY CORP	ATO	31.125	0.020492	0	0.0049	0.0156	Oct-93
60	Nov-93	ATMOS ENERGY CORP	ATO	27.375	-0.10988	0.33	0.0053	-0.1152	Nov-93
60	Dec-93	ATMOS ENERGY CORP	ATO	27.625	0.009132	0	0.0055	0.0036	Dec-93
60	Jan-94	ATMOS ENERGY CORP	ATO	29.25	0.058824	0	0.0055	0.0533	Jan-94
60	Feb-94	ATMOS ENERGY CORP	ATO	29.5	0.019829	0.33	0.0049	0.0149	Feb-94
60	Mar-94	ATMOS ENERGY CORP	ATO	26.75	-0.09322	0	0.0058	-0.0990	Mar-94
60	Apr-94	ATMOS ENERGY CORP	ATO	28.75	0.074766	0	0.0057	0.0691	Apr-94
60	May-94	ATMOS ENERGY CORP	ATO	18.5	-0.0233	0.33	0.0063	-0.0296	May-94
60	Jun-94	ATMOS ENERGY CORP	ATO	18.375	-0.00676	0	0.0061	-0.0129	Jun-94
60	Jul-94	ATMOS ENERGY CORP	ATO	17.75	-0.03401	0	0.0060	-0.0400	Jul-94
60	Aug-94	ATMOS ENERGY CORP	ATO	17	-0.02986	0.22	0.0066	-0.0365	Aug-94
60	Sep-94	ATMOS ENERGY CORP	ATO	17.75	0.044118	0	0.0061	0.0380	Sep-94

60	Oct-94	ATMOS ENERGY CORP	ATO	16.375	-0.07747	0	0.0066	-0.0841	Oct-94
60	Nov-94	ATMOS ENERGY CORP	ATO	17.375	0.075115	0.23	0.0064	0.0687	Nov-94
60	Dec-94	ATMOS ENERGY CORP	ATO	17	-0.02158	0	0.0066	-0.0282	Dec-94
60	Jan-95	ATMOS ENERGY CORP	ATO	16.375	-0.03677	0	0.0070	-0.0438	Jan-95
60	Feb-95	ATMOS ENERGY CORP	ATO	18.125	0.120916	0.23	0.0059	0.1150	Feb-95
60	Mar-95	ATMOS ENERGY CORP	ATO	18.5	0.02069	0	0.0064	0.0143	Mar-95
60	Apr-95	ATMOS ENERGY CORP	ATO	18.75	0.013514	0	0.0058	0.0077	Apr-95
60	May-95	ATMOS ENERGY CORP	ATO	19.25	0.038933	0.23	0.0065	0.0324	May-95
60	Jun-95	ATMOS ENERGY CORP	ATO	20.25	0.051948	0	0.0054	0.0465	Jun-95
60	Jul-95	ATMOS ENERGY CORP	ATO	20	-0.01235	0	0.0056	-0.0179	Jul-95
60	Aug-95	ATMOS ENERGY CORP	ATO	19.875	0.00525	0.23	0.0057	-0.0005	Aug-95
60	Sep-95	ATMOS ENERGY CORP	ATO	19.375	-0.02516	0	0.0052	-0.0304	Sep-95
60	Oct-95	ATMOS ENERGY CORP	ATO	18.375	-0.05161	0	0.0057	-0.0573	Oct-95
60	Nov-95	ATMOS ENERGY CORP	ATO	20.875	0.149116	0.24	0.0051	0.1440	Nov-95
60	Dec-95	ATMOS ENERGY CORP	ATO	23	0.101796	0	0.0049	0.0969	Dec-95
60	Jan-96	ATMOS ENERGY CORP	ATO	21.25	-0.07609	0	0.0054	-0.0815	Jan-96
60	Feb-96	ATMOS ENERGY CORP	ATO	22.625	0.076	0.24	0.0048	0.0712	Feb-96
60	Mar-96	ATMOS ENERGY CORP	ATO	23	0.016575	0	0.0052	0.0114	Mar-96
60	Apr-96	ATMOS ENERGY CORP	ATO	24.75	0.076087	0	0.0059	0.0702	Apr-96
60	May-96	ATMOS ENERGY CORP	ATO	24.125	-0.01556	0.24	0.0058	-0.0214	May-96
60	Jun-96	ATMOS ENERGY CORP	ATO	30.625	0.26943	0	0.0054	0.2640	Jun-96
60	Jul-96	ATMOS ENERGY CORP	ATO	21.375	-0.30204	0	0.0062	-0.3082	Jul-96
60	Aug-96	ATMOS ENERGY CORP	ATO	22.875	0.081404	0.24	0.0057	0.0757	Aug-96
60	Sep-96	ATMOS ENERGY CORP	ATO	23.375	0.021858	0	0.0060	0.0159	Sep-96
60	Oct-96	ATMOS ENERGY CORP	ATO	23.75	0.016043	0	0.0058	0.0102	Oct-96
60	Nov-96	ATMOS ENERGY CORP	ATO	24.625	0.047368	0.25	0.0052	0.0422	Nov-96
60	Dec-96	ATMOS ENERGY CORP	ATO	23.875	-0.03046	0	0.0056	-0.0361	Dec-96
60	Jan-97	ATMOS ENERGY CORP	ATO	22.75	-0.04712	0	0.0056	-0.0527	Jan-97
60	Feb-97	ATMOS ENERGY CORP	ATO	24.5	0.087912	0.25	0.0051	0.0828	Feb-97
60	Mar-97	ATMOS ENERGY CORP	ATO	25.375	0.035714	0	0.0059	0.0298	Mar-97
60	Apr-97	ATMOS ENERGY CORP	ATO	22.625	-0.10837	0	0.0059	-0.1143	Apr-97
60	May-97	ATMOS ENERGY CORP	ATO	23.125	0.033149	0.25	0.0058	0.0273	May-97
60	Jun-97	ATMOS ENERGY CORP	ATO	24	0.037838	0	0.0059	0.0319	Jun-97
60	Jul-97	ATMOS ENERGY CORP	ATO	24.0625	0.002604	0	0.0058	-0.0032	Jul-97
60	Aug-97	ATMOS ENERGY CORP	ATO	27.25	0.143065	0.255	0.0049	0.1382	Aug-97
60	Sep-97	ATMOS ENERGY CORP	ATO	24.875	-0.08716	0	0.0058	-0.0930	Sep-97

60	Oct-97	ATMOS ENERGY CORP	ATO	25.25	0.015075	0	0.0054	0.0097	Oct-97
60	Nov-97	ATMOS ENERGY CORP	ATO	26.5625	0.062475	0.265	0.0047	0.0578	Nov-97
60	Dec-97	ATMOS ENERGY CORP	ATO	30.25	0.138824	0	0.0054	0.1334	Dec-97
60	Jan-98	ATMOS ENERGY CORP	ATO	28.5	-0.05785	0	0.0048	-0.0627	Jan-98
60	Feb-98	ATMOS ENERGY CORP	ATO	28.6875	0.015877	0.265	0.0044	0.0115	Feb-98
60	Mar-98	ATMOS ENERGY CORP	ATO	29.625	0.03268	0	0.0052	0.0275	Mar-98
60	Apr-98	ATMOS ENERGY CORP	ATO	29.4375	-0.00633	0	0.0049	-0.0112	Apr-98
60	May-98	ATMOS ENERGY CORP	ATO	30.75	0.053588	0.265	0.0048	0.0488	May-98
60	Jun-98	ATMOS ENERGY CORP	ATO	30.5	-0.00813	0	0.0052	-0.0133	Jun-98
60	Jul-98	ATMOS ENERGY CORP	ATO	29.25	-0.04098	0	0.0049	-0.0459	Jul-98
60	Aug-98	ATMOS ENERGY CORP	ATO	28.375	-0.02086	0.265	0.0048	-0.0257	Aug-98
60	Sep-98	ATMOS ENERGY CORP	ATO	28.5625	0.006608	0	0.0044	0.0022	Sep-98
60	Oct-98	ATMOS ENERGY CORP	ATO	29.6875	0.039387	0	0.0042	0.0352	Oct-98
60	Nov-98	ATMOS ENERGY CORP	ATO	30.625	0.040842	0.275	0.0045	0.0363	Nov-98
60	Dec-98	ATMOS ENERGY CORP	ATO	32.25	0.053061	0	0.0045	0.0486	Dec-98
60	Jan-99	ATMOS ENERGY CORP	ATO	29.8125	-0.07558	0	0.0042	-0.0798	Jan-99
60	Feb-99	ATMOS ENERGY CORP	ATO	24	-0.18574	0.275	0.0040	-0.1897	Feb-99
60	Mar-99	ATMOS ENERGY CORP	ATO	24.0625	0.002604	0	0.0053	-0.0027	Mar-99
60	Apr-99	ATMOS ENERGY CORP	ATO	25.25	0.049351	0	0.0048	0.0446	Apr-99
60	May-99	ATMOS ENERGY CORP	ATO	25.375	0.015842	0.275	0.0045	0.0113	May-99
60	Jun-99	ATMOS ENERGY CORP	ATO	25	-0.01478	0	0.0055	-0.0203	Jun-99
60	Jul-99	ATMOS ENERGY CORP	ATO	25	0	0	0.0051	-0.0051	Jul-99
60	Aug-99	ATMOS ENERGY CORP	ATO	25.0625	0.0135	0.275	0.0054	0.0081	Aug-99
60	Sep-99	ATMOS ENERGY CORP	ATO	24.125	-0.03741	0	0.0052	-0.0426	Sep-99
60	Oct-99	ATMOS ENERGY CORP	ATO	22.6875	-0.05959	0	0.0050	-0.0646	Oct-99
60	Nov-99	ATMOS ENERGY CORP	ATO	22.3125	-0.00397	0.285	0.0056	-0.0096	Nov-99
60	Dec-99	ATMOS ENERGY CORP	ATO	20.4375	-0.08403	0	0.0055	-0.0895	Dec-99
60	Jan-00	ATMOS ENERGY CORP	ATO	17.5	-0.14373	0	0.0057	-0.1494	Jan-00
60	Feb-00	ATMOS ENERGY CORP	ATO	17.125	-0.00514	0.285	0.0051	-0.0102	Feb-00
60	Mar-00	ATMOS ENERGY CORP	ATO	16.375	-0.0438	0	0.0054	-0.0492	Mar-00
60	Apr-00	ATMOS ENERGY CORP	ATO	15.875	-0.03053	0	0.0047	-0.0352	Apr-00
60	May-00	ATMOS ENERGY CORP	ATO	18.3125	0.171496	0.285	0.0056	0.1659	May-00
60	Jun-00	ATMOS ENERGY CORP	ATO	17.5	-0.04437	0	0.0052	-0.0496	Jun-00
60	Jul-00	ATMOS ENERGY CORP	ATO	20.625	0.178571	0	0.0052	0.1734	Jul-00
60	Aug-00	ATMOS ENERGY CORP	ATO	20.75	0.019879	0.285	0.0050	0.0149	Aug-00
60	Sep-00	ATMOS ENERGY CORP	ATO	20.625	-0.00602	0	0.0046	-0.0106	Sep-00

60	Oct-00	ATMOS ENERGY CORP	ATO	23.125	0.121212	0	0.0053	0.1159	Oct-00
60	Nov-00	ATMOS ENERGY CORP	ATO	25.125	0.099027	0.29	0.0048	0.0942	Nov-00
60	Dec-00	ATMOS ENERGY CORP	ATO	24.375	-0.02985	0	0.0045	-0.0344	Dec-00
60	Jan-01	ATMOS ENERGY CORP	ATO	24.47	0.003897	0	0.0049	-0.0010	Jan-01
60	Feb-01	ATMOS ENERGY CORP	ATO	23.3	-0.03596	0.29	0.0042	-0.0402	Feb-01
60	Mar-01	ATMOS ENERGY CORP	ATO	23.8	0.021459	0	0.0045	0.0170	Mar-01
60	Apr-01	ATMOS ENERGY CORP	ATO	22.67	-0.04748	0	0.0047	-0.0522	Apr-01
60	May-01	ATMOS ENERGY CORP	ATO	23.2	0.036171	0.29	0.0050	0.0312	May-01
60	Jun-01	ATMOS ENERGY CORP	ATO	24.46	0.05431	0	0.0047	0.0496	Jun-01
60	Jul-01	ATMOS ENERGY CORP	ATO	20.2	-0.17416	0	0.0052	-0.1794	Jul-01
60	Aug-01	ATMOS ENERGY CORP	ATO	21.6	0.083663	0.29	0.0046	0.0791	Aug-01
60	Sep-01	ATMOS ENERGY CORP	ATO	21.6	0	0	0.0041	-0.0041	Sep-01
60	Oct-01	ATMOS ENERGY CORP	ATO	21.55	-0.00232	0	0.0048	-0.0071	Oct-01
60	Nov-01	ATMOS ENERGY CORP	ATO	19.6	-0.0768	0.295	0.0041	-0.0809	Nov-01
60	Dec-01	ATMOS ENERGY CORP	ATO	21.25	0.084184	0	0.0046	0.0796	Dec-01
60	Jan-02	ATMOS ENERGY CORP	ATO	21.1	-0.00706	0	0.0048	-0.0119	Jan-02
60	Feb-02	ATMOS ENERGY CORP	ATO	22.3	0.070853	0.295	0.0043	0.0666	Feb-02
60	Mar-02	ATMOS ENERGY CORP	ATO	23.6	0.058296	0	0.0043	0.0540	Mar-02
60	Apr-02	ATMOS ENERGY CORP	ATO	23.93	0.013983	0	0.0054	0.0086	Apr-02
60	May-02	ATMOS ENERGY CORP	ATO	23.14	-0.02069	0.295	0.0049	-0.0256	May-02
60	Jun-02	ATMOS ENERGY CORP	ATO	23.44	0.012965	0	0.0044	0.0086	Jun-02
60	Jul-02	ATMOS ENERGY CORP	ATO	21.25	-0.09343	0	0.0051	-0.0985	Jul-02
60	Aug-02	ATMOS ENERGY CORP	ATO	21.44	0.022824	0.295	0.0044	0.0184	Aug-02
60	Sep-02	ATMOS ENERGY CORP	ATO	21.5	0.002798	0	0.0042	-0.0014	Sep-02
60	Oct-02	ATMOS ENERGY CORP	ATO	22	0.023256	0	0.0040	0.0193	Oct-02
60	Nov-02	ATMOS ENERGY CORP	ATO	22.3	0.027273	0.3	0.0040	0.0233	Nov-02
60	Dec-02	ATMOS ENERGY CORP	ATO	23.32	0.04574	0	0.0045	0.0412	Dec-02
60	Jan-03	ATMOS ENERGY CORP	ATO	22.4	-0.03945	0	0.0041	-0.0436	Jan-03
60	Feb-03	ATMOS ENERGY CORP	ATO	21.28	-0.03661	0.3	0.0038	-0.0404	Feb-03
60	Mar-03	ATMOS ENERGY CORP	ATO	21.26	-0.00094	0	0.0040	-0.0049	Mar-03
60	Apr-03	ATMOS ENERGY CORP	ATO	22.78	0.071496	0	0.0040	0.0675	Apr-03
60	May-03	ATMOS ENERGY CORP	ATO	24.75	0.099649	0.3	0.0039	0.0957	May-03
60	Jun-03	ATMOS ENERGY CORP	ATO	24.8	0.00202	0	0.0036	-0.0016	Jun-03
60	Jul-03	ATMOS ENERGY CORP	ATO	24.37	-0.01734	0	0.0038	-0.0211	Jul-03
60	Aug-03	ATMOS ENERGY CORP	ATO	24.35	0.01149	0.3	0.0042	0.0073	Aug-03
60	Sep-03	ATMOS ENERGY CORP	ATO	23.94	-0.01684	0	0.0046	-0.0214	Sep-03

60	Oct-03	ATMOS ENERGY CORP	ATO	24.5	0.023392	0	0.0041	0.0193	Oct-03
60	Nov-03	ATMOS ENERGY CORP	ATO	24.65	0.018571	0.305	0.0039	0.0147	Nov-03
60	Dec-03	ATMOS ENERGY CORP	ATO	24.3	-0.0142	0	0.0047	-0.0189	Dec-03
60	Jan-04	ATMOS ENERGY CORP	ATO	25.6	0.053498	0	0.0042	0.0493	Jan-04
60	Feb-04	ATMOS ENERGY CORP	ATO	26.35	0.041211	0.305	0.0038	0.0374	Feb-04
60	Mar-04	ATMOS ENERGY CORP	ATO	25.57	-0.0296	0	0.0043	-0.0339	Mar-04
60	Apr-04	ATMOS ENERGY CORP	ATO	24.64	-0.03637	0	0.0039	-0.0403	Apr-04
60	May-04	ATMOS ENERGY CORP	ATO	24.79	0.018466	0.305	0.0040	0.0145	May-04
60	Jun-04	ATMOS ENERGY CORP	ATO	25.6	0.032674	0	0.0048	0.0279	Jun-04
60	Jul-04	ATMOS ENERGY CORP	ATO	25.17	-0.0168	0	0.0043	-0.0211	Jul-04
60	Aug-04	ATMOS ENERGY CORP	ATO	25.29	0.016885	0.305	0.0045	0.0124	Aug-04
60	Sep-04	ATMOS ENERGY CORP	ATO	25.19	-0.00395	0	0.0040	-0.0080	Sep-04
60	Oct-04	ATMOS ENERGY CORP	ATO	25.81	0.024613	0	0.0038	0.0208	Oct-04
60	Nov-04	ATMOS ENERGY CORP	ATO	26.99	0.05773	0.31	0.0041	0.0536	Nov-04
60	Dec-04	ATMOS ENERGY CORP	ATO	27.35	0.013338	0	0.0043	0.0090	Dec-04
60	Jan-05	ATMOS ENERGY CORP	ATO	27.7	0.012797	0	0.0041	0.0087	Jan-05
60	Feb-05	ATMOS ENERGY CORP	ATO	27.57	0.006498	0.31	0.0035	0.0030	Feb-05
60	Mar-05	ATMOS ENERGY CORP	ATO	27	-0.02068	0	0.0041	-0.0248	Mar-05
60	Apr-05	ATMOS ENERGY CORP	ATO	26.3	-0.02593	0	0.0039	-0.0298	Apr-05
60	May-05	ATMOS ENERGY CORP	ATO	28.29	0.087453	0.31	0.0040	0.0835	May-05
60	Jun-05	ATMOS ENERGY CORP	ATO	28.8	0.018028	0	0.0036	0.0144	Jun-05
60	Jul-05	ATMOS ENERGY CORP	ATO	29.16	0.0125	0	0.0034	0.0091	Jul-05
60	Aug-05	ATMOS ENERGY CORP	ATO	29.59	0.025377	0.31	0.0040	0.0214	Aug-05
60	Sep-05	ATMOS ENERGY CORP	ATO	28.25	-0.04529	0	0.0035	-0.0488	Sep-05
60	Oct-05	ATMOS ENERGY CORP	ATO	26.3	-0.06903	0	0.0039	-0.0729	Oct-05
60	Nov-05	ATMOS ENERGY CORP	ATO	26.57	0.022243	0.315	0.0039	0.0183	Nov-05
60	Dec-05	ATMOS ENERGY CORP	ATO	26.16	-0.01543	0	0.0039	-0.0193	Dec-05
60	Jan-06	ATMOS ENERGY CORP	ATO	26.28	0.004587	0	0.0040	0.0006	Jan-06
60	Feb-06	ATMOS ENERGY CORP	ATO	26.4	0.016552	0.315	0.0036	0.0130	Feb-06
60	Mar-06	ATMOS ENERGY CORP	ATO	26.33	-0.00265	0	0.0039	-0.0066	Mar-06
60	Apr-06	ATMOS ENERGY CORP	ATO	26.54	0.007976	0	0.0039	0.0041	Apr-06
60	May-06	ATMOS ENERGY CORP	ATO	26.84	0.023173	0.315	0.0048	0.0184	May-06
60	Jun-06	ATMOS ENERGY CORP	ATO	27.91	0.039866	0	0.0044	0.0355	Jun-06
60	Jul-06	ATMOS ENERGY CORP	ATO	28.77	0.030813	0	0.0045	0.0263	Jul-06
60	Aug-06	ATMOS ENERGY CORP	ATO	28.8	0.011992	0.315	0.0043	0.0077	Aug-06
60	Sep-06	ATMOS ENERGY CORP	ATO	28.55	-0.00868	0	0.0039	-0.0126	Sep-06

60	Oct-06	ATMOS ENERGY CORP	ATO	30.73	0.076357	0	0.0042	0.0722	Oct-06
60	Nov-06	ATMOS ENERGY CORP	ATO	32.77	0.076798	0.32	0.0039	0.0729	Nov-06
60	Dec-06	ATMOS ENERGY CORP	ATO	31.91	-0.02624	0	0.0036	-0.0298	Dec-06
60	Jan-07	ATMOS ENERGY CORP	ATO	31.24	-0.021	0	0.0043	-0.0253	Jan-07
60	Feb-07	ATMOS ENERGY CORP	ATO	31.46	0.017286	0.32	0.0038	0.0135	Feb-07
60	Mar-07	ATMOS ENERGY CORP	ATO	31.28	-0.00572	0	0.0039	-0.0096	Mar-07
60	Apr-07	ATMOS ENERGY CORP	ATO	31.72	0.014066	0	0.0042	0.0099	Apr-07
60	May-07	ATMOS ENERGY CORP	ATO	32.39	0.031211	0.32	0.0041	0.0271	May-07
60	Jun-07	ATMOS ENERGY CORP	ATO	30.06	-0.07194	0	0.0040	-0.0759	Jun-07
60	Jul-07	ATMOS ENERGY CORP	ATO	28.07	-0.0662	0	0.0046	-0.0708	Jul-07
60	Aug-07	ATMOS ENERGY CORP	ATO	28.11	0.012825	0.32	0.0042	0.0086	Aug-07
60	Sep-07	ATMOS ENERGY CORP	ATO	28.32	0.007471	0	0.0037	0.0038	Sep-07
60	Oct-07	ATMOS ENERGY CORP	ATO	28.05	-0.00953	0	0.0043	-0.0138	Oct-07
60	Nov-07	ATMOS ENERGY CORP	ATO	26.19	-0.05472	0.325	0.0039	-0.0586	Nov-07
60	Dec-07	ATMOS ENERGY CORP	ATO	28.04	0.070638	0	0.0037	0.0669	Dec-07
60	Jan-08	ATMOS ENERGY CORP	ATO	28.74	0.024964	0	0.0040	0.0210	Jan-08
60	Feb-08	ATMOS ENERGY CORP	ATO	26	-0.08403	0.325	0.0034	-0.0874	Feb-08
60	Mar-08	ATMOS ENERGY CORP	ATO	25.5	-0.01923	0	0.0037	-0.0229	Mar-08
60	Apr-08	ATMOS ENERGY CORP	ATO	27.68	0.08549	0	0.0035	0.0820	Apr-08
60	May-08	ATMOS ENERGY CORP	ATO	27.39	0.001264	0.325	0.0037	-0.0024	May-08
60	Jun-08	ATMOS ENERGY CORP	ATO	27.57	0.006572	0	0.0040	0.0026	Jun-08
60	Jul-08	ATMOS ENERGY CORP	ATO	26.47	-0.0399	0	0.0039	-0.0438	Jul-08
60	Aug-08	ATMOS ENERGY CORP	ATO	27.54	0.052701	0.325	0.0036	0.0491	Aug-08
60	Sep-08	ATMOS ENERGY CORP	ATO	26.62	-0.03341	0	0.0039	-0.0373	Sep-08
60	Oct-08	ATMOS ENERGY CORP	ATO	24.27	-0.08828	0	0.0037	-0.0920	Oct-08
60	Nov-08	ATMOS ENERGY CORP	ATO	24.93	0.040791	0.33	0.0036	0.0372	Nov-08
60	Dec-08	ATMOS ENERGY CORP	ATO	23.7	-0.04934	0	0.0033	-0.0526	Dec-08
60	Jan-09	ATMOS ENERGY CORP	ATO	24.55	0.035865	0	0.0024	0.0335	Jan-09
60	Feb-09	ATMOS ENERGY CORP	ATO	21.83	-0.09735	0.33	0.0030	-0.1004	Feb-09
60	Mar-09	ATMOS ENERGY CORP	ATO	23.12	0.059093	0	0.0035	0.0556	Mar-09
60	Apr-09	ATMOS ENERGY CORP	ATO	24.71	0.068772	0	0.0029	0.0659	Apr-09
60	May-09	ATMOS ENERGY CORP	ATO	24	-0.01538	0.33	0.0033	-0.0187	May-09
60	Jun-09	ATMOS ENERGY CORP	ATO	25.04	0.043333	0	0.0038	0.0395	Jun-09
60	Jul-09	ATMOS ENERGY CORP	ATO	27.16	0.084664	0	0.0036	0.0811	Jul-09
60	Aug-09	ATMOS ENERGY CORP	ATO	27.24	0.015096	0.33	0.0036	0.0115	Aug-09
60	Sep-09	ATMOS ENERGY CORP	ATO	28.18	0.034508	0	0.0034	0.0311	Sep-09

60	Oct-09	ATMOS ENERGY CORP	ATO	27.85	-0.01171	0	0.0033	-0.0150	Oct-09
60	Nov-09	ATMOS ENERGY CORP	ATO	27.39	-0.00449	0.335	0.0035	-0.0080	Nov-09
60	Dec-09	ATMOS ENERGY CORP	ATO	29.4	0.073384	0	0.0034	0.0700	Dec-09
60	Jan-10	ATMOS ENERGY CORP	ATO	27.62	-0.06054	0	0.0036	-0.0641	Jan-10
60	Feb-10	ATMOS ENERGY CORP	ATO	27.46	0.006336	0.335	0.0033	0.0030	Feb-10
60	Mar-10	ATMOS ENERGY CORP	ATO	28.57	0.040422	0	0.0040	0.0364	Mar-10
60	Apr-10	ATMOS ENERGY CORP	ATO	29.58	0.035352	0	0.0038	0.0316	Apr-10
60	May-10	ATMOS ENERGY CORP	ATO	27.12	-0.07184	0.335	0.0034	-0.0752	May-10
60	Jun-10	ATMOS ENERGY CORP	ATO	27.04	-0.00295	0	0.0037	-0.0067	Jun-10
60	Jul-10	ATMOS ENERGY CORP	ATO	29	0.072485	0	0.0031	0.0694	Jul-10
60	Aug-10	ATMOS ENERGY CORP	ATO	28.3	-0.01259	0.335	0.0032	-0.0158	Aug-10
60	Sep-10	ATMOS ENERGY CORP	ATO	29.25	0.033569	0	0.0026	0.0310	Sep-10
60	Oct-10	ATMOS ENERGY CORP	ATO	29.45	0.006838	0	0.0027	0.0041	Oct-10
60	Nov-10	ATMOS ENERGY CORP	ATO	30.07	0.032598	0.34	0.0032	0.0294	Nov-10
60	Dec-10	ATMOS ENERGY CORP	ATO	31.2	0.037579	0	0.0032	0.0344	Dec-10
60	Jan-11	ATMOS ENERGY CORP	ATO	32.6	0.044872	0	0.003567	0.0413	Jan-11
60	Feb-11	ATMOS ENERGY CORP	ATO	33.82	0.047853	0.34	0.003683	0.0442	Feb-11
60	Mar-11	ATMOS ENERGY CORP	ATO	34.1	0.008279	0	0.003558	0.0047	Mar-11
60	Apr-11	ATMOS ENERGY CORP	ATO	34.89	0.023167	0	0.003567	0.0196	Apr-11
60	May-11	ATMOS ENERGY CORP	ATO	33.35	-0.03439	0.34	0.003342	-0.0377	May-11
60	Jun-11	ATMOS ENERGY CORP	ATO	33.25	-0.003	0	0.003258	-0.0063	Jun-11
60	Jul-11	ATMOS ENERGY CORP	ATO	33.43	0.005414	0	0.003292	0.0021	Jul-11
60	Aug-11	ATMOS ENERGY CORP	ATO	33.54	0.013461	0.34	0.003042	0.0104	Aug-11
60	Sep-11	ATMOS ENERGY CORP	ATO	32.45	-0.0325	0	0.002358	-0.0349	Sep-11
60	Oct-11	ATMOS ENERGY CORP	ATO	34.32	0.057627	0	0.002392	0.0552	Oct-11
60	Nov-11	ATMOS ENERGY CORP	ATO	34.21	0.006847	0.345	0.002267	0.0046	Nov-11
60	Dec-11	ATMOS ENERGY CORP	ATO	33.35	-0.02514	0	0.002483	-0.0276	Dec-11
60	Jan-12	ATMOS ENERGY CORP	ATO	32.41	-0.02819	0	0.0021	-0.0303	Jan-12
60	Feb-12	ATMOS ENERGY CORP	ATO	30.73	-0.04119	0.345	0.002	-0.0432	Feb-12
60	Mar-12	ATMOS ENERGY CORP	ATO	31.46	0.023755	0	0.0022	0.0216	Mar-12
60	Apr-12	ATMOS ENERGY CORP	ATO	32.58	0.035601	0	0.0025	0.0331	Apr-12
60	May-12	ATMOS ENERGY CORP	ATO	33.14	0.027778	0.345	0.0023	0.0255	May-12
60	Jun-12	ATMOS ENERGY CORP	ATO	35.07	0.058238	0	0.0018	0.0564	Jun-12
	Jul-12	ATMOS ENERGY CORP	ATO	35.85	0.022241	0	0.002	0.0202	Jul-12
	Aug-12	ATMOS ENERGY CORP	ATO	34.94	-0.01576	0.345	0.0018	-0.0176	Aug-12
	Sep-12	ATMOS ENERGY CORP	ATO	35.79	0.024327	0	0.0017	0.0226	Sep-12

Oct-12	ATMOS ENERGY CORP	ATO	35.97	0.005029	0	0.0021	0.0029	Oct-12
Nov-12	ATMOS ENERGY CORP	ATO	35.01	-0.01696	0.35	0.0019	-0.0189	Nov-12
Dec-12	ATMOS ENERGY CORP	ATO	35.12	0.003142	0	0.0019	0.0012	Dec-12
Jan-13	ATMOS ENERGY CORP	ATO	37.36	0.063781	0	0.0022	0.0616	Jan-13
Feb-13	ATMOS ENERGY CORP	ATO	38.17	0.031049	0.35	0.0022	0.0288	Feb-13
Mar-13	ATMOS ENERGY CORP	ATO	42.69	0.118418	0	0.0021	0.1163	Mar-13
Apr-13	ATMOS ENERGY CORP	ATO	44.37	0.039353	0	0.0026	0.0368	Apr-13
May-13	ATMOS ENERGY CORP	ATO	42.22	-0.04057	0.35	0.0023	-0.0429	May-13
Jun-13	ATMOS ENERGY CORP	ATO	41.06	-0.02748	0	0.0024	-0.0299	Jun-13
Jul-13	ATMOS ENERGY CORP	ATO	44.24	0.077448	0	0.003	0.0744	Jul-13
Aug-13	ATMOS ENERGY CORP	ATO	40.35	-0.08002	0.35	0.0028	-0.0828	Aug-13
Sep-13	ATMOS ENERGY CORP	ATO	42.59	0.055514	0	0.0029	0.0526	Sep-13
Oct-13	ATMOS ENERGY CORP	ATO	44.27	0.039446	0	0.0029	0.0365	Oct-13
Nov-13	ATMOS ENERGY CORP	ATO	44.45	0.012424	0.37	0.0027	0.0097	Nov-13
Dec-13	ATMOS ENERGY CORP	ATO	45.42	0.021822	0	0.0031	0.0187	Dec-13
Jan-14	ATMOS ENERGY CORP	ATO	48.01	0.057023	0	0.0032	0.0538	Jan-14
Feb-14	ATMOS ENERGY CORP	ATO	46.01	-0.03395	0.37	0.0026	-0.0366	Feb-14
Mar-14	ATMOS ENERGY CORP	ATO	47.13	0.024343	0	0.0029	0.0214	Mar-14
Apr-14	ATMOS ENERGY CORP	ATO	51.04	0.082962	0	0.0028	0.0802	Apr-14
May-14	ATMOS ENERGY CORP	ATO	50.1	-0.01117	0.37	0.0028	-0.0140	May-14
Jun-14	ATMOS ENERGY CORP	ATO	53.4	0.065868	0	0.0025	0.0634	Jun-14
Jul-14	ATMOS ENERGY CORP	ATO	48.32	-0.09513	0	0.0027	-0.0978	Jul-14
Aug-14	ATMOS ENERGY CORP	ATO	50.56	0.054015	0.37	0.0026	0.0514	Aug-14
Sep-14	ATMOS ENERGY CORP	ATO	47.7	-0.05657	0	0.0023	-0.0589	Sep-14
Oct-14	ATMOS ENERGY CORP	ATO	53	0.111111	0	0.0025	0.1086	Oct-14
Nov-14	ATMOS ENERGY CORP	ATO	53.7	0.020566	0.39	0.0023	0.0183	Nov-14
Dec-14	ATMOS ENERGY CORP	ATO	55.74	0.037989	0	0.0022	0.0358	Dec-14
Jan-15	ATMOS ENERGY CORP	ATO	56.91	0.02099	0	0.002	0.0190	Jan-15
Feb-15	ATMOS ENERGY CORP	ATO	53.04	-0.06115	0.39	0.0015	-0.0626	Feb-15
Mar-15	ATMOS ENERGY CORP	ATO	55.3	0.042609	0	0.0021	0.0405	Mar-15
Apr-15	ATMOS ENERGY CORP	ATO	54	-0.02351	0	0.0019	-0.0254	Apr-15
May-15	ATMOS ENERGY CORP	ATO	54.02	0.007593	0.39	0.002	0.0056	May-15
Jun-15	ATMOS ENERGY CORP	ATO	51.28	-0.05072	0	0.003492	-0.0542	Jun-15
Jul-15	ATMOS ENERGY CORP	ATO	55.3	0.078393	0	0.003458	0.0749	Jul-15
Aug-15	ATMOS ENERGY CORP	ATO	54.79	-0.00217	0.39	0.003367	-0.0055	Aug-15
Sep-15	ATMOS ENERGY CORP	ATO	58.18	0.061873	0	0.003392	0.058481	Sep-15

Oct-15	ATMOS ENERGY CORP	ATO	63	0.082846	0	0.003292	0.079555	Oct-15
Nov-15	ATMOS ENERGY CORP	ATO	62.31	-0.00429	0.42	0.003383	-0.007669	Nov-15
Dec-15	ATMOS ENERGY CORP	ATO	63.04	0.011716	0	0.003308	0.008407	Dec-15
Jan-16	ATMOS ENERGY CORP	ATO	69.22	0.098033	0	0.003333	0.0947	Jan-16
Feb-16	ATMOS ENERGY CORP	ATO	69.41	0.008812	0.42	0.0033	0.005512	Feb-16
Mar-16	ATMOS ENERGY CORP	ATO	74.26	0.069875	0	0.003183	0.066691	Mar-16
Apr-16	ATMOS ENERGY CORP	ATO	72.55	-0.02303	0	0.003183	-0.026211	Apr-16
May-16	ATMOS ENERGY CORP	ATO	72.9	0.010613	0.42	0.003042	0.007572	May-16
Jun-16	ATMOS ENERGY CORP	ATO	81.32	0.115501	0	0.002917	0.112584	Jun-16
Jul-16	ATMOS ENERGY CORP	ATO	79.79	-0.01881	0	0.002733	-0.021548	Jul-16
Aug-16	ATMOS ENERGY CORP	ATO	73.7	-0.07106	0.42	0.002767	-0.073828	Aug-16
Sep-16	ATMOS ENERGY CORP	ATO	74.47	0.010448	0	0.002842	0.007606	Sep-16
Oct-16	ATMOS ENERGY CORP	ATO	74.39	-0.00107	0	0.002842	-0.003916	Oct-16
Nov-16	ATMOS ENERGY CORP	ATO	71.12	-0.03791	0.45	0.003217	-0.041125	Nov-16
Dec-16	ATMOS ENERGY CORP	ATO	74.15	0.042604	0	0.003383	0.039221	Dec-16
Jan-17	ATMOS ENERGY CORP	ATO	76.18	0.027377	0	0.003267	0.02411	Jan-17
Feb-17	ATMOS ENERGY CORP	ATO	78.29	0.033605	0.45	0.003292	0.030313	Feb-17
Mar-17	ATMOS ENERGY CORP	ATO	78.99	0.008941	0	0.003292	0.005649	Mar-17
Apr-17	ATMOS ENERGY CORP	ATO	81.02	0.025699	0	0.003225	0.022474	Apr-17
May-17	ATMOS ENERGY CORP	ATO	83.31	0.033819	0.45	0.003208	0.03061	May-17
Jun-17	ATMOS ENERGY CORP	ATO	82.95	-0.00432	0	0.003067	-0.007388	Jun-17
Jul-17	ATMOS ENERGY CORP	ATO	86.76	0.045931	0	0.00315	0.042781	Jul-17
Aug-17	ATMOS ENERGY CORP	ATO	88.04	0.01994	0.45	0.003083	0.016857	Aug-17
Sep-17	ATMOS ENERGY CORP	ATO	83.84	-0.04771	0	0.003025	-0.050731	Sep-17
Oct-17	ATMOS ENERGY CORP	ATO	87.24	0.040553	0	0.003	0.037553	Oct-17
Nov-17	ATMOS ENERGY CORP	ATO	92.29	0.063446	0.485	0.003	0.060446	Nov-17
Dec-17	ATMOS ENERGY CORP	ATO	85.89	-0.06935	0	0.002925	-0.072272	Dec-17
Jan-18	ATMOS ENERGY CORP	ATO	82.9	-0.03481	0	0.002925	-0.037737	Jan-18
Feb-18	ATMOS ENERGY CORP	ATO	80.49	-0.02322	0.485	0.002958	-0.026179	Feb-18
Mar-18	ATMOS ENERGY CORP	ATO	84.24	0.04659	0	0.003225	0.043365	Mar-18
Apr-18	ATMOS ENERGY CORP	ATO	86.89	0.031458	0	0.003208	0.028249	Apr-18
May-18	ATMOS ENERGY CORP	ATO	89.21	0.032282	0.485	0.003325	0.028957	May-18
Jun-18	ATMOS ENERGY CORP	ATO	90.14	0.010425	0	0.0033	0.007125	Jun-18
Jul-18	ATMOS ENERGY CORP	ATO	91.87	0.019192	0	0.003225	0.015967	Jul-18
Aug-18	ATMOS ENERGY CORP	ATO	92.23	0.009198	0.485	0.003233	0.005964	Aug-18
Sep-18	ATMOS ENERGY CORP	ATO	93.91	0.018215	0	0.003233	0.014982	Sep-18

Oct-18	ATMOS ENERGY CORP	ATO	93.08	-0.00884	0	0.00345	-0.012288	Oct-18
Nov-18	ATMOS ENERGY CORP	ATO	95.67	0.033466	0.525	0.003517	0.029949	Nov-18
Dec-18	ATMOS ENERGY CORP	ATO	92.72	-0.03084	0	0.00335	-0.034185	Dec-18
Jan-19	ATMOS ENERGY CORP	ATO	97.63	0.052955	0	0.003275	0.04968	Jan-19
Feb-19	ATMOS ENERGY CORP	ATO	98.85	0.017874	0.525	0.003158	0.014715	Feb-19
Mar-19	ATMOS ENERGY CORP	ATO	102.93	0.041275	0	0.003158	0.038116	Mar-19
Apr-19	ATMOS ENERGY CORP	ATO	102.34	-0.00573	0	0.003075	-0.008807	Apr-19
May-19	ATMOS ENERGY CORP	ATO	101.8	-0.00015	0.525	0.003058	-0.003205	May-19
Jun-19	ATMOS ENERGY CORP	ATO	105.56	0.036935	0	0.003058	0.033877	Jun-19
Jul-19	ATMOS ENERGY CORP	ATO	109.04	0.032967	0	0.002742	0.030225	Jul-19
Aug-19	ATMOS ENERGY CORP	ATO	110.23	0.015728	0.525	0.002742	0.012987	Aug-19
Sep-19	ATMOS ENERGY CORP	ATO	113.89	0.033203	0	0.002483	0.03072	Sep-19
Oct-19	ATMOS ENERGY CORP	ATO	112.48	-0.01238	0	0.002525	-0.014905	Oct-19
Nov-19	ATMOS ENERGY CORP	ATO	106.96	-0.04396	0.575	0.002558	-0.046522	Nov-19
Dec-19	ATMOS ENERGY CORP	ATO	111.86	0.045812	0	0.002508	0.043303	Dec-19
Jan-20	ATMOS ENERGY CORP	ATO	117.03	0.046218	0	0.00235	0.043868	Jan-20
Feb-20	ATMOS ENERGY CORP	ATO	103.25	-0.11283	0.575	0.00245	-0.115284	Feb-20
Mar-20	ATMOS ENERGY CORP	ATO	99.23	-0.03893	0	0.002317	-0.041251	Mar-20
Apr-20	ATMOS ENERGY CORP	ATO	101.97	0.027613	0	0.002025	0.025588	Apr-20
May-20	ATMOS ENERGY CORP	ATO	102.78	0.013582	0.575	0.002075	0.011507	May-20
Jun-20	ATMOS ENERGY CORP	ATO	99.58	-0.03113	0	0.002008	-0.033143	Jun-20
Jul-20	ATMOS ENERGY CORP	ATO	105.99	0.06437	0	0.001692	0.062679	Jul-20
Aug-20	ATMOS ENERGY CORP	ATO	99.82	-0.05279	0.575	0.001875	-0.054663	Aug-20
Sep-20	ATMOS ENERGY CORP	ATO	95.59	-0.04238	0	0.001925	-0.044301	Sep-20
Oct-20	ATMOS ENERGY CORP	ATO	91.67	-0.04101	0	0.001958	-0.042967	Oct-20
Nov-20	ATMOS ENERGY CORP	ATO	95.89	0.052853	0.625	0.001917	0.050936	Nov-20
Dec-20	ATMOS ENERGY CORP	ATO	95.43	-0.0048	0	0.001883	-0.00668	Dec-20
Jan-21	ATMOS ENERGY CORP	ATO	89	-0.06738	0	0.002042	-0.069421	Jan-21
Feb-21	ATMOS ENERGY CORP	ATO	84.61	-0.0423	0.625	0.00225	-0.044553	Feb-21
Mar-21	ATMOS ENERGY CORP	ATO	98.85	0.168302	0	0.002533	0.165768	Mar-21

Unique Index Number	Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP	Trading Date
	Jan-26						0.0031		Jan-26
	Feb-26						0.0028		Feb-26
	Mar-26						0.0032		Mar-26
	Apr-26						0.0030		Apr-26
	May-26						0.0028		May-26
	Jun-26						0.0033		Jun-26
	Jul-26						0.0031		Jul-26
	Aug-26						0.0031		Aug-26
	Sep-26						0.0030		Sep-26
	Oct-26						0.0030		Oct-26
	Nov-26						0.0031		Nov-26
	Dec-26						0.0030		Dec-26
	Jan-27						0.0030		Jan-27
	Feb-27						0.0027		Feb-27
	Mar-27						0.0029		Mar-27
	Apr-27						0.0027		Apr-27
	May-27						0.0028		May-27
	Jun-27						0.0027		Jun-27
	Jul-27						0.0027		Jul-27
	Aug-27						0.0029		Aug-27
	Sep-27						0.0027		Sep-27
	Oct-27						0.0028		Oct-27
	Nov-27						0.0027		Nov-27
	Dec-27						0.0027		Dec-27
	Jan-28						0.0027		Jan-28
	Feb-28						0.0025		Feb-28
	Mar-28						0.0027		Mar-28
	Apr-28						0.0026		Apr-28
	May-28						0.0027		May-28
	Jun-28						0.0027		Jun-28
	Jul-28						0.0027		Jul-28
	Aug-28						0.0029		Aug-28
	Sep-28						0.0027		Sep-28
	Oct-28						0.0030		Oct-28
	Nov-28						0.0027		Nov-28
	Dec-28						0.0029		Dec-28
	Jan-29						0.0029		Jan-29
	Feb-29						0.0027		Feb-29
	Mar-29						0.0028		Mar-29
	Apr-29						0.0034		Apr-29
	May-29						0.0030		May-29

Jun-29	0.0029	Jun-29
Jul-29	0.0032	Jul-29
Aug-29	0.0030	Aug-29
Sep-29	0.0032	Sep-29
Oct-29	0.0031	Oct-29
Nov-29	0.0026	Nov-29
Dec-29	0.0031	Dec-29
Jan-30	0.0029	Jan-30
Feb-30	0.0026	Feb-30
Mar-30	0.0029	Mar-30
Apr-30	0.0027	Apr-30
May-30	0.0027	May-30
Jun-30	0.0029	Jun-30
Jul-30	0.0028	Jul-30
Aug-30	0.0026	Aug-30
Sep-30	0.0029	Sep-30
Oct-30	0.0027	Oct-30
Nov-30	0.0026	Nov-30
Dec-30	0.0028	Dec-30
Jan-31	0.0028	Jan-31
Feb-31	0.0026	Feb-31
Mar-31	0.0029	Mar-31
Apr-31	0.0027	Apr-31
May-31	0.0026	May-31
Jun-31	0.0028	Jun-31
Jul-31	0.0027	Jul-31
Aug-31	0.0027	Aug-31
Sep-31	0.0027	Sep-31
Oct-31	0.0029	Oct-31
Nov-31	0.0031	Nov-31
Dec-31	0.0032	Dec-31
Jan-32	0.0032	Jan-32
Feb-32	0.0032	Feb-32
Mar-32	0.0031	Mar-32
Apr-32	0.0030	Apr-32
May-32	0.0028	May-32
Jun-32	0.0028	Jun-32
Jul-32	0.0028	Jul-32
Aug-32	0.0028	Aug-32
Sep-32	0.0026	Sep-32
Oct-32	0.0027	Oct-32
Nov-32	0.0026	Nov-32
Dec-32	0.0027	Dec-32
Jan-33	0.0027	Jan-33

Feb-33	0.0023	Feb-33
Mar-33	0.0027	Mar-33
Apr-33	0.0025	Apr-33
May-33	0.0028	May-33
Jun-33	0.0025	Jun-33
Jul-33	0.0026	Jul-33
Aug-33	0.0026	Aug-33
Sep-33	0.0025	Sep-33
Oct-33	0.0026	Oct-33
Nov-33	0.0025	Nov-33
Dec-33	0.0028	Dec-33
Jan-34	0.0029	Jan-34
Feb-34	0.0024	Feb-34
Mar-34	0.0027	Mar-34
Apr-34	0.0025	Apr-34
May-34	0.0025	May-34
Jun-34	0.0024	Jun-34
Jul-34	0.0024	Jul-34
Aug-34	0.0024	Aug-34
Sep-34	0.0023	Sep-34
Oct-34	0.0027	Oct-34
Nov-34	0.0025	Nov-34
Dec-34	0.0025	Dec-34
Jan-35	0.0025	Jan-35
Feb-35	0.0021	Feb-35
Mar-35	0.0022	Mar-35
Apr-35	0.0023	Apr-35
May-35	0.0023	May-35
Jun-35	0.0022	Jun-35
Jul-35	0.0024	Jul-35
Aug-35	0.0023	Aug-35
Sep-35	0.0023	Sep-35
Oct-35	0.0023	Oct-35
Nov-35	0.0024	Nov-35
Dec-35	0.0024	Dec-35
Jan-36	0.0024	Jan-36
Feb-36	0.0023	Feb-36
Mar-36	0.0024	Mar-36
Apr-36	0.0022	Apr-36
May-36	0.0022	May-36
Jun-36	0.0024	Jun-36
Jul-36	0.0023	Jul-36
Aug-36	0.0023	Aug-36
Sep-36	0.0021	Sep-36

Oct-36	0.0023	Oct-36
Nov-36	0.0022	Nov-36
Dec-36	0.0022	Dec-36
Jan-37	0.0021	Jan-37
Feb-37	0.0020	Feb-37
Mar-37	0.0022	Mar-37
Apr-37	0.0023	Apr-37
May-37	0.0022	May-37
Jun-37	0.0025	Jun-37
Jul-37	0.0024	Jul-37
Aug-37	0.0023	Aug-37
Sep-37	0.0023	Sep-37
Oct-37	0.0023	Oct-37
Nov-37	0.0024	Nov-37
Dec-37	0.0023	Dec-37
Jan-38	0.0023	Jan-38
Feb-38	0.0021	Feb-38
Mar-38	0.0023	Mar-38
Apr-38	0.0022	Apr-38
May-38	0.0022	May-38
Jun-38	0.0021	Jun-38
Jul-38	0.0021	Jul-38
Aug-38	0.0022	Aug-38
Sep-38	0.0021	Sep-38
Oct-38	0.0022	Oct-38
Nov-38	0.0021	Nov-38
Dec-38	0.0022	Dec-38
Jan-39	0.0021	Jan-39
Feb-39	0.0019	Feb-39
Mar-39	0.0021	Mar-39
Apr-39	0.0019	Apr-39
May-39	0.0020	May-39
Jun-39	0.0018	Jun-39
Jul-39	0.0019	Jul-39
Aug-39	0.0018	Aug-39
Sep-39	0.0019	Sep-39
Oct-39	0.0023	Oct-39
Nov-39	0.0020	Nov-39
Dec-39	0.0019	Dec-39
Jan-40	0.0020	Jan-40
Feb-40	0.0018	Feb-40
Mar-40	0.0019	Mar-40
Apr-40	0.0018	Apr-40
May-40	0.0019	May-40

Jun-40	0.0019	Jun-40
Jul-40	0.0020	Jul-40
Aug-40	0.0019	Aug-40
Sep-40	0.0018	Sep-40
Oct-40	0.0018	Oct-40
Nov-40	0.0018	Nov-40
Dec-40	0.0017	Dec-40
Jan-41	0.0016	Jan-41
Feb-41	0.0016	Feb-41
Mar-41	0.0018	Mar-41
Apr-41	0.0017	Apr-41
May-41	0.0017	May-41
Jun-41	0.0016	Jun-41
Jul-41	0.0016	Jul-41
Aug-41	0.0016	Aug-41
Sep-41	0.0016	Sep-41
Oct-41	0.0016	Oct-41
Nov-41	0.0014	Nov-41
Dec-41	0.0016	Dec-41
Jan-42	0.0021	Jan-42
Feb-42	0.0019	Feb-42
Mar-42	0.0021	Mar-42
Apr-42	0.0020	Apr-42
May-42	0.0019	May-42
Jun-42	0.0021	Jun-42
Jul-42	0.0021	Jul-42
Aug-42	0.0021	Aug-42
Sep-42	0.0020	Sep-42
Oct-42	0.0021	Oct-42
Nov-42	0.0020	Nov-42
Dec-42	0.0021	Dec-42
Jan-43	0.0020	Jan-43
Feb-43	0.0019	Feb-43
Mar-43	0.0021	Mar-43
Apr-43	0.0020	Apr-43
May-43	0.0019	May-43
Jun-43	0.0021	Jun-43
Jul-43	0.0021	Jul-43
Aug-43	0.0021	Aug-43
Sep-43	0.0020	Sep-43
Oct-43	0.0020	Oct-43
Nov-43	0.0021	Nov-43
Dec-43	0.0021	Dec-43
Jan-44	0.0021	Jan-44

Feb-44	0.0020	Feb-44
Mar-44	0.0021	Mar-44
Apr-44	0.0020	Apr-44
May-44	0.0022	May-44
Jun-44	0.0020	Jun-44
Jul-44	0.0021	Jul-44
Aug-44	0.0021	Aug-44
Sep-44	0.0020	Sep-44
Oct-44	0.0021	Oct-44
Nov-44	0.0020	Nov-44
Dec-44	0.0020	Dec-44
Jan-45	0.0021	Jan-45
Feb-45	0.0018	Feb-45
Mar-45	0.0020	Mar-45
Apr-45	0.0019	Apr-45
May-45	0.0019	May-45
Jun-45	0.0019	Jun-45
Jul-45	0.0018	Jul-45
Aug-45	0.0019	Aug-45
Sep-45	0.0018	Sep-45
Oct-45	0.0019	Oct-45
Nov-45	0.0018	Nov-45
Dec-45	0.0018	Dec-45
Jan-46	0.0017	Jan-46
Feb-46	0.0015	Feb-46
Mar-46	0.0016	Mar-46
Apr-46	0.0017	Apr-46
May-46	0.0018	May-46
Jun-46	0.0016	Jun-46
Jul-46	0.0019	Jul-46
Aug-46	0.0017	Aug-46
Sep-46	0.0018	Sep-46
Oct-46	0.0019	Oct-46
Nov-46	0.0018	Nov-46
Dec-46	0.0019	Dec-46
Jan-47	0.0018	Jan-47
Feb-47	0.0016	Feb-47
Mar-47	0.0018	Mar-47
Apr-47	0.0017	Apr-47
May-47	0.0017	May-47
Jun-47	0.0019	Jun-47
Jul-47	0.0018	Jul-47
Aug-47	0.0017	Aug-47
Sep-47	0.0018	Sep-47

Oct-47	0.0018	Oct-47
Nov-47	0.0017	Nov-47
Dec-47	0.0021	Dec-47
Jan-48	0.0020	Jan-48
Feb-48	0.0019	Feb-48
Mar-48	0.0022	Mar-48
Apr-48	0.0020	Apr-48
May-48	0.0018	May-48
Jun-48	0.0021	Jun-48
Jul-48	0.0019	Jul-48
Aug-48	0.0021	Aug-48
Sep-48	0.0020	Sep-48
Oct-48	0.0019	Oct-48
Nov-48	0.0021	Nov-48
Dec-48	0.0020	Dec-48
Jan-49	0.0020	Jan-49
Feb-49	0.0018	Feb-49
Mar-49	0.0019	Mar-49
Apr-49	0.0018	Apr-49
May-49	0.0020	May-49
Jun-49	0.0019	Jun-49
Jul-49	0.0017	Jul-49
Aug-49	0.0019	Aug-49
Sep-49	0.0017	Sep-49
Oct-49	0.0018	Oct-49
Nov-49	0.0017	Nov-49
Dec-49	0.0017	Dec-49
Jan-50	0.0018	Jan-50
Feb-50	0.0016	Feb-50
Mar-50	0.0018	Mar-50
Apr-50	0.0016	Apr-50
May-50	0.0019	May-50
Jun-50	0.0017	Jun-50
Jul-50	0.0018	Jul-50
Aug-50	0.0018	Aug-50
Sep-50	0.0017	Sep-50
Oct-50	0.0019	Oct-50
Nov-50	0.0018	Nov-50
Dec-50	0.0018	Dec-50
Jan-51	0.0020	Jan-51
Feb-51	0.0017	Feb-51
Mar-51	0.0019	Mar-51
Apr-51	0.0020	Apr-51
May-51	0.0021	May-51

Jun-51	0.0020	Jun-51
Jul-51	0.0023	Jul-51
Aug-51	0.0021	Aug-51
Sep-51	0.0019	Sep-51
Oct-51	0.0023	Oct-51
Nov-51	0.0021	Nov-51
Dec-51	0.0022	Dec-51
Jan-52	0.0023	Jan-52
Feb-52	0.0021	Feb-52
Mar-52	0.0023	Mar-52
Apr-52	0.0022	Apr-52
May-52	0.0020	May-52
Jun-52	0.0022	Jun-52
Jul-52	0.0022	Jul-52
Aug-52	0.0021	Aug-52
Sep-52	0.0023	Sep-52
Oct-52	0.0023	Oct-52
Nov-52	0.0021	Nov-52
Dec-52	0.0024	Dec-52
Jan-53	0.0023	Jan-53
Feb-53	0.0021	Feb-53
Mar-53	0.0025	Mar-53
Apr-53	0.0024	Apr-53
May-53	0.0024	May-53
Jun-53	0.0027	Jun-53
Jul-53	0.0025	Jul-53
Aug-53	0.0025	Aug-53
Sep-53	0.0025	Sep-53
Oct-53	0.0023	Oct-53
Nov-53	0.0024	Nov-53
Dec-53	0.0024	Dec-53
Jan-54	0.0023	Jan-54
Feb-54	0.0022	Feb-54
Mar-54	0.0025	Mar-54
Apr-54	0.0022	Apr-54
May-54	0.0020	May-54
Jun-54	0.0025	Jun-54
Jul-54	0.0022	Jul-54
Aug-54	0.0023	Aug-54
Sep-54	0.0022	Sep-54
Oct-54	0.0021	Oct-54
Nov-54	0.0023	Nov-54
Dec-54	0.0023	Dec-54
Jan-55	0.0022	Jan-55

Feb-55	0.0022	Feb-55
Mar-55	0.0024	Mar-55
Apr-55	0.0022	Apr-55
May-55	0.0025	May-55
Jun-55	0.0023	Jun-55
Jul-55	0.0023	Jul-55
Aug-55	0.0027	Aug-55
Sep-55	0.0024	Sep-55
Oct-55	0.0025	Oct-55
Nov-55	0.0024	Nov-55
Dec-55	0.0024	Dec-55
Jan-56	0.0025	Jan-56
Feb-56	0.0023	Feb-56
Mar-56	0.0023	Mar-56
Apr-56	0.0026	Apr-56
May-56	0.0026	May-56
Jun-56	0.0023	Jun-56
Jul-56	0.0026	Jul-56
Aug-56	0.0026	Aug-56
Sep-56	0.0025	Sep-56
Oct-56	0.0029	Oct-56
Nov-56	0.0027	Nov-56
Dec-56	0.0028	Dec-56
Jan-57	0.0029	Jan-57
Feb-57	0.0025	Feb-57
Mar-57	0.0026	Mar-57
Apr-57	0.0029	Apr-57
May-57	0.0029	May-57
Jun-57	0.0025	Jun-57
Jul-57	0.0033	Jul-57
Aug-57	0.0030	Aug-57
Sep-57	0.0031	Sep-57
Oct-57	0.0031	Oct-57
Nov-57	0.0029	Nov-57
Dec-57	0.0029	Dec-57
Jan-58	0.0027	Jan-58
Feb-58	0.0025	Feb-58
Mar-58	0.0027	Mar-58
Apr-58	0.0026	Apr-58
May-58	0.0024	May-58
Jun-58	0.0027	Jun-58
Jul-58	0.0027	Jul-58
Aug-58	0.0027	Aug-58
Sep-58	0.0032	Sep-58

Oct-58	0.0032	Oct-58
Nov-58	0.0028	Nov-58
Dec-58	0.0033	Dec-58
Jan-59	0.0031	Jan-59
Feb-59	0.0031	Feb-59
Mar-59	0.0035	Mar-59
Apr-59	0.0033	Apr-59
May-59	0.0033	May-59
Jun-59	0.0036	Jun-59
Jul-59	0.0035	Jul-59
Aug-59	0.0035	Aug-59
Sep-59	0.0034	Sep-59
Oct-59	0.0035	Oct-59
Nov-59	0.0035	Nov-59
Dec-59	0.0036	Dec-59
Jan-60	0.0035	Jan-60
Feb-60	0.0037	Feb-60
Mar-60	0.0036	Mar-60
Apr-60	0.0032	Apr-60
May-60	0.0037	May-60
Jun-60	0.0034	Jun-60
Jul-60	0.0032	Jul-60
Aug-60	0.0034	Aug-60
Sep-60	0.0032	Sep-60
Oct-60	0.0033	Oct-60
Nov-60	0.0032	Nov-60
Dec-60	0.0033	Dec-60
Jan-61	0.0033	Jan-61
Feb-61	0.0030	Feb-61
Mar-61	0.0031	Mar-61
Apr-61	0.0031	Apr-61
May-61	0.0034	May-61
Jun-61	0.0032	Jun-61
Jul-61	0.0033	Jul-61
Aug-61	0.0033	Aug-61
Sep-61	0.0032	Sep-61
Oct-61	0.0034	Oct-61
Nov-61	0.0032	Nov-61
Dec-61	0.0031	Dec-61
Jan-62	0.0037	Jan-62
Feb-62	0.0032	Feb-62
Mar-62	0.0033	Mar-62
Apr-62	0.0033	Apr-62
May-62	0.0032	May-62

Jun-62	0.0030	Jun-62
Jul-62	0.0034	Jul-62
Aug-62	0.0034	Aug-62
Sep-62	0.0030	Sep-62
Oct-62	0.0035	Oct-62
Nov-62	0.0031	Nov-62
Dec-62	0.0032	Dec-62
Jan-63	0.0032	Jan-63
Feb-63	0.0029	Feb-63
Mar-63	0.0031	Mar-63
Apr-63	0.0034	Apr-63
May-63	0.0033	May-63
Jun-63	0.0030	Jun-63
Jul-63	0.0036	Jul-63
Aug-63	0.0033	Aug-63
Sep-63	0.0034	Sep-63
Oct-63	0.0034	Oct-63
Nov-63	0.0032	Nov-63
Dec-63	0.0036	Dec-63
Jan-64	0.0035	Jan-64
Feb-64	0.0032	Feb-64
Mar-64	0.0037	Mar-64
Apr-64	0.0035	Apr-64
May-64	0.0032	May-64
Jun-64	0.0038	Jun-64
Jul-64	0.0035	Jul-64
Aug-64	0.0035	Aug-64
Sep-64	0.0034	Sep-64
Oct-64	0.0034	Oct-64
Nov-64	0.0035	Nov-64
Dec-64	0.0035	Dec-64
Jan-65	0.0033	Jan-65
Feb-65	0.0032	Feb-65
Mar-65	0.0038	Mar-65
Apr-65	0.0033	Apr-65
May-65	0.0033	May-65
Jun-65	0.0038	Jun-65
Jul-65	0.0034	Jul-65
Aug-65	0.0037	Aug-65
Sep-65	0.0035	Sep-65
Oct-65	0.0034	Oct-65
Nov-65	0.0037	Nov-65
Dec-65	0.0037	Dec-65
Jan-66	0.0038	Jan-66

Feb-66	0.0034	Feb-66
Mar-66	0.0040	Mar-66
Apr-66	0.0036	Apr-66
May-66	0.0041	May-66
Jun-66	0.0039	Jun-66
Jul-66	0.0038	Jul-66
Aug-66	0.0043	Aug-66
Sep-66	0.0041	Sep-66
Oct-66	0.0040	Oct-66
Nov-66	0.0038	Nov-66
Dec-66	0.0039	Dec-66
Jan-67	0.0040	Jan-67
Feb-67	0.0034	Feb-67
Mar-67	0.0039	Mar-67
Apr-67	0.0035	Apr-67
May-67	0.0043	May-67
Jun-67	0.0039	Jun-67
Jul-67	0.0043	Jul-67
Aug-67	0.0042	Aug-67
Sep-67	0.0040	Sep-67
Oct-67	0.0045	Oct-67
Nov-67	0.0045	Nov-67
Dec-67	0.0044	Dec-67
Jan-68	0.0050	Jan-68
Feb-68	0.0042	Feb-68
Mar-68	0.0043	Mar-68
Apr-68	0.0049	Apr-68
May-68	0.0046	May-68
Jun-68	0.0042	Jun-68
Jul-68	0.0048	Jul-68
Aug-68	0.0042	Aug-68
Sep-68	0.0044	Sep-68
Oct-68	0.0045	Oct-68
Nov-68	0.0043	Nov-68
Dec-68	0.0049	Dec-68
Jan-69	0.0050	Jan-69
Feb-69	0.0046	Feb-69
Mar-69	0.0047	Mar-69
Apr-69	0.0055	Apr-69
May-69	0.0047	May-69
Jun-69	0.0055	Jun-69
Jul-69	0.0052	Jul-69
Aug-69	0.0048	Aug-69
Sep-69	0.0055	Sep-69

	Oct-69					0.0057			Oct-69
	Nov-69					0.0049			Nov-69
	Dec-69					0.0060			Dec-69
	Jan-70					0.0056			Jan-70
	Feb-70					0.0052			Feb-70
	Mar-70					0.0056			Mar-70
	Apr-70					0.0054			Apr-70
	May-70					0.0055			May-70
	Jun-70					0.0064			Jun-70
	Jul-70					0.0059			Jul-70
	Aug-70					0.0057			Aug-70
	Sep-70					0.0056			Sep-70
	Oct-70					0.0055			Oct-70
	Nov-70					0.0058			Nov-70
	Dec-70					0.0053			Dec-70
	Jan-71					0.0051			Jan-71
	Feb-71					0.0046			Feb-71
	Mar-71					0.0056			Mar-71
	Apr-71					0.0048			Apr-71
	May-71					0.0047			May-71
	Jun-71					0.0056			Jun-71
	Jul-71					0.0052			Jul-71
	Aug-71					0.0055			Aug-71
	Sep-71					0.0049			Sep-71
	Oct-71					0.0047			Oct-71
	Nov-71					0.0051			Nov-71
	Dec-71					0.0050			Dec-71
	Jan-72					0.0050			Jan-72
	Feb-72					0.0047			Feb-72
	Mar-72					0.0049			Mar-72
	Apr-72					0.0048			Apr-72
	May-72					0.0055			May-72
	Jun-72					0.0049			Jun-72
	Jul-72					0.0051			Jul-72
	Aug-72					0.0049			Aug-72
	Sep-72					0.0047			Sep-72
	Oct-72					0.0052			Oct-72
	Nov-72					0.0048			Nov-72
68	Dec-72	NEW JERSEY NATURAL GAS	NJNG	-19.5	-66	0	0.0045		Dec-72
68	Jan-73	NEW JERSEY NATURAL GAS	NJNG	-17.125	-0.1218	0	0.0054	-0.1272	Jan-73
68	Feb-73	NEW JERSEY NATURAL GAS	NJNG	-18.25	0.065693	0	0.0051	0.0606	Feb-73
68	Mar-73	NEW JERSEY NATURAL GAS	NJNG	-17.125	-0.04466	0.31	0.0056	-0.0503	Mar-73
68	Apr-73	NEW JERSEY NATURAL GAS	NJNG	-17	-0.0073	0	0.0057	-0.0130	Apr-73
68	May-73	NEW JERSEY NATURAL GAS	NJNG	-16.25	-0.04412	0	0.0058	-0.0499	May-73

68	Jun-73	NEW JERSEY NATURAL GAS	NJNG	-16.125	0.011385	0.31	0.0055	0.0059	Jun-73
68	Jul-73	NEW JERSEY NATURAL GAS	NJNG	-16.25	0.007752	0	0.0061	0.0017	Jul-73
68	Aug-73	NEW JERSEY NATURAL GAS	NJNG	-16.125	-0.00769	0	0.0062	-0.0139	Aug-73
68	Sep-73	NEW JERSEY NATURAL GAS	NJNG	-16	0.012713	0.33	0.0055	0.0072	Sep-73
68	Oct-73	NEW JERSEY NATURAL GAS	NJNG	-15.375	-0.03906	0	0.0063	-0.0454	Oct-73
68	Nov-73	NEW JERSEY NATURAL GAS	NJNG	-13.938	-0.0935	0	0.0056	-0.0991	Nov-73
68	Dec-73	NEW JERSEY NATURAL GAS	NJNG	-13.875	0.019193	0.33	0.0060	0.0132	Dec-73
68	Jan-74	NEW JERSEY NATURAL GAS	NJNG	-15	0.081081	0	0.0061	0.0750	Jan-74
68	Feb-74	NEW JERSEY NATURAL GAS	NJNG	-15.75	0.05	0	0.0055	0.0445	Feb-74
68	Mar-74	NEW JERSEY NATURAL GAS	NJNG	-14.5	-0.05841	0.33	0.0058	-0.0642	Mar-74
68	Apr-74	NEW JERSEY NATURAL GAS	NJNG	-13.625	-0.06035	0	0.0068	-0.0671	Apr-74
68	May-74	NEW JERSEY NATURAL GAS	NJNG	-12.25	-0.10092	0	0.0068	-0.1077	May-74
68	Jun-74	NEW JERSEY NATURAL GAS	NJNG	-11.375	-0.04449	0.33	0.0061	-0.0506	Jun-74
68	Jul-74	NEW JERSEY NATURAL GAS	NJNG	-10.25	-0.0989	0	0.0072	-0.1061	Jul-74
68	Aug-74	NEW JERSEY NATURAL GAS	NJNG	-10.25	0	0	0.0065	-0.0065	Aug-74
68	Sep-74	NEW JERSEY NATURAL GAS	NJNG	-10.625	0.06878	0.33	0.0071	0.0617	Sep-74
68	Oct-74	NEW JERSEY NATURAL GAS	NJNG	-10.125	-0.04706	0	0.0070	-0.0541	Oct-74
68	Nov-74	NEW JERSEY NATURAL GAS	NJNG	-11.125	0.098765	0	0.0062	0.0926	Nov-74
68	Dec-74	NEW JERSEY NATURAL GAS	NJNG	-9.875	-0.0827	0.33	0.0067	-0.0894	Dec-74
68	Jan-75	NEW JERSEY NATURAL GAS	NJNG	-13.625	0.379747	0	0.0068	0.3729	Jan-75
68	Feb-75	NEW JERSEY NATURAL GAS	NJNG	-12.875	-0.05505	0	0.0060	-0.0610	Feb-75
68	Mar-75	NEW JERSEY NATURAL GAS	NJNG	-11.875	-0.05204	0.33	0.0066	-0.0586	Mar-75
68	Apr-75	NEW JERSEY NATURAL GAS	NJNG	-12.625	0.063158	0	0.0067	0.0565	Apr-75
68	May-75	NEW JERSEY NATURAL GAS	NJNG	-12.375	-0.0198	0	0.0067	-0.0265	May-75
68	Jun-75	NEW JERSEY NATURAL GAS	NJNG	-13.375	0.107475	0.33	0.0070	0.1005	Jun-75
68	Jul-75	NEW JERSEY NATURAL GAS	NJNG	-12.125	-0.09346	0	0.0068	-0.1003	Jul-75
68	Aug-75	NEW JERSEY NATURAL GAS	NJNG	-11.625	-0.04124	0	0.0065	-0.0477	Aug-75
68	Sep-75	NEW JERSEY NATURAL GAS	NJNG	-11.375	0.006882	0.33	0.0073	-0.0004	Sep-75
68	Oct-75	NEW JERSEY NATURAL GAS	NJNG	-10.875	-0.04396	0	0.0072	-0.0512	Oct-75
68	Nov-75	NEW JERSEY NATURAL GAS	NJNG	-12.125	0.114943	0	0.0061	0.1088	Nov-75
68	Dec-75	NEW JERSEY NATURAL GAS	NJNG	-12.625	0.068454	0.33	0.0074	0.0611	Dec-75
68	Jan-76	NEW JERSEY NATURAL GAS	NJNG	-14.375	0.138614	0	0.0065	0.1321	Jan-76
68	Feb-76	NEW JERSEY NATURAL GAS	NJNG	-13.875	-0.03478	0	0.0060	-0.0408	Feb-76
68	Mar-76	NEW JERSEY NATURAL GAS	NJNG	-13.625	0.005766	0.33	0.0071	-0.0013	Mar-76
68	Apr-76	NEW JERSEY NATURAL GAS	NJNG	-14.375	0.055046	0	0.0064	0.0486	Apr-76
68	May-76	NEW JERSEY NATURAL GAS	NJNG	-14.125	-0.01739	0	0.0059	-0.0233	May-76
68	Jun-76	NEW JERSEY NATURAL GAS	NJNG	-13.125	-0.04743	0.33	0.0073	-0.0547	Jun-76
68	Jul-76	NEW JERSEY NATURAL GAS	NJNG	-13.625	0.038095	0	0.0065	0.0316	Jul-76
68	Aug-76	NEW JERSEY NATURAL GAS	NJNG	-14.125	0.036697	0	0.0069	0.0298	Aug-76
68	Sep-76	NEW JERSEY NATURAL GAS	NJNG	-13.625	-0.01204	0.33	0.0064	-0.0184	Sep-76
68	Oct-76	NEW JERSEY NATURAL GAS	NJNG	-13.625	0	0	0.0061	-0.0061	Oct-76
68	Nov-76	NEW JERSEY NATURAL GAS	NJNG	-14.125	0.036697	0	0.0066	0.0301	Nov-76
68	Dec-76	NEW JERSEY NATURAL GAS	NJNG	-15.125	0.094159	0.33	0.0063	0.0879	Dec-76
68	Jan-77	NEW JERSEY NATURAL GAS	NJNG	-15.125	0	0	0.0059	-0.0059	Jan-77

68	Feb-77	NEW JERSEY NATURAL GAS	NJNG	-14.875	-0.01653	0	0.0057	-0.0222	Feb-77
68	Mar-77	NEW JERSEY NATURAL GAS	NJNG	-14.875	0.022185	0.33	0.0065	0.0157	Mar-77
68	Apr-77	NEW JERSEY NATURAL GAS	NJNG	-14.125	-0.05042	0	0.0061	-0.0565	Apr-77
68	May-77	NEW JERSEY NATURAL GAS	NJNG	-13.875	-0.0177	0	0.0067	-0.0244	May-77
68	Jun-77	NEW JERSEY NATURAL GAS	NJNG	-15.375	0.131892	0.33	0.0062	0.1257	Jun-77
68	Jul-77	NEW JERSEY NATURAL GAS	NJNG	-15.5	0.00813	0	0.0059	0.0022	Jul-77
68	Aug-77	NEW JERSEY NATURAL GAS	NJNG	-17	0.096774	0	0.0067	0.0901	Aug-77
68	Sep-77	NEW JERSEY NATURAL GAS	NJNG	-17.25	0.034118	0.33	0.0061	0.0280	Sep-77
68	Oct-77	NEW JERSEY NATURAL GAS	NJNG	-16.375	-0.05073	0	0.0063	-0.0570	Oct-77
68	Nov-77	NEW JERSEY NATURAL GAS	NJNG	-15.75	-0.03817	0	0.0063	-0.0445	Nov-77
68	Dec-77	NEW JERSEY NATURAL GAS	NJNG	-16.125	0.044762	0.33	0.0062	0.0386	Dec-77
68	Jan-78	NEW JERSEY NATURAL GAS	NJNG	-16.875	0.046512	0	0.0069	0.0396	Jan-78
68	Feb-78	NEW JERSEY NATURAL GAS	NJNG	-16	-0.05185	0	0.0060	-0.0579	Feb-78
68	Mar-78	NEW JERSEY NATURAL GAS	NJNG	-15.875	0.012813	0.33	0.0069	0.0059	Mar-78
68	Apr-78	NEW JERSEY NATURAL GAS	NJNG	-16.5	0.03937	0	0.0063	0.0331	Apr-78
68	May-78	NEW JERSEY NATURAL GAS	NJNG	-16.25	-0.01515	0	0.0075	-0.0227	May-78
68	Jun-78	NEW JERSEY NATURAL GAS	NJNG	-15.375	-0.03169	0.36	0.0069	-0.0386	Jun-78
68	Jul-78	NEW JERSEY NATURAL GAS	NJNG	-15.875	0.03252	0	0.0073	0.0252	Jul-78
68	Aug-78	NEW JERSEY NATURAL GAS	NJNG	-16.125	0.015748	0	0.0070	0.0087	Aug-78
68	Sep-78	NEW JERSEY NATURAL GAS	NJNG	-16.75	0.061085	0.36	0.0065	0.0546	Sep-78
68	Oct-78	NEW JERSEY NATURAL GAS	NJNG	-14.25	-0.14925	0	0.0073	-0.1566	Oct-78
68	Nov-78	NEW JERSEY NATURAL GAS	NJNG	-14.75	0.035088	0	0.0071	0.0280	Nov-78
68	Dec-78	NEW JERSEY NATURAL GAS	NJNG	-14.75	0.024407	0.36	0.0068	0.0176	Dec-78
68	Jan-79	NEW JERSEY NATURAL GAS	NJNG	-16.25	0.101695	0	0.0079	0.0938	Jan-79
68	Feb-79	NEW JERSEY NATURAL GAS	NJNG	-16	-0.01539	0	0.0065	-0.0219	Feb-79
68	Mar-79	NEW JERSEY NATURAL GAS	NJNG	-15	-0.04	0.36	0.0074	-0.0474	Mar-79
68	Apr-79	NEW JERSEY NATURAL GAS	NJNG	-14.625	-0.025	0	0.0076	-0.0326	Apr-79
68	May-79	NEW JERSEY NATURAL GAS	NJNG	-14.875	0.017094	0	0.0077	0.0094	May-79
68	Jun-79	NEW JERSEY NATURAL GAS	NJNG	-15.375	0.057815	0.36	0.0071	0.0507	Jun-79
68	Jul-79	NEW JERSEY NATURAL GAS	NJNG	-16.875	0.097561	0	0.0076	0.0900	Jul-79
68	Aug-79	NEW JERSEY NATURAL GAS	NJNG	-17	0.007407	0	0.0073	0.0001	Aug-79
68	Sep-79	NEW JERSEY NATURAL GAS	NJNG	-17.25	0.037059	0.38	0.0068	0.0303	Sep-79
68	Oct-79	NEW JERSEY NATURAL GAS	NJNG	-15	-0.13044	0	0.0082	-0.1386	Oct-79
68	Nov-79	NEW JERSEY NATURAL GAS	NJNG	-15.875	0.058333	0	0.0083	0.0500	Nov-79
68	Dec-79	NEW JERSEY NATURAL GAS	NJNG	-17.125	0.102677	0.38	0.0083	0.0944	Dec-79
68	Jan-80	NEW JERSEY NATURAL GAS	NJNG	-15.625	-0.08759	0	0.0083	-0.0959	Jan-80
68	Feb-80	NEW JERSEY NATURAL GAS	NJNG	-14.75	-0.056	0	0.0084	-0.0644	Feb-80
68	Mar-80	NEW JERSEY NATURAL GAS	NJNG	-13.625	-0.05051	0.38	0.0099	-0.0604	Mar-80
68	Apr-80	NEW JERSEY NATURAL GAS	NJNG	-16.25	0.192661	0	0.0100	0.1827	Apr-80
68	May-80	NEW JERSEY NATURAL GAS	NJNG	-15.875	-0.02308	0	0.0087	-0.0318	May-80
68	Jun-80	NEW JERSEY NATURAL GAS	NJNG	-15.875	0.023937	0.38	0.0086	0.0153	Jun-80
68	Jul-80	NEW JERSEY NATURAL GAS	NJNG	-17.313	0.090551	0	0.0084	0.0822	Jul-80
68	Aug-80	NEW JERSEY NATURAL GAS	NJNG	-17.688	0.021661	0	0.0081	0.0136	Aug-80
68	Sep-80	NEW JERSEY NATURAL GAS	NJNG	-16.438	-0.04806	0.4	0.0097	-0.0578	Sep-80

68	Oct-80	NEW JERSEY NATURAL GAS	NJNG	-15.563	-0.02483	0	0.0097	-0.0345	Oct-80
68	Nov-80	NEW JERSEY NATURAL GAS	NJNG	-15.438	-0.00803	0	0.0091	-0.0171	Nov-80
68	Dec-80	NEW JERSEY NATURAL GAS	NJNG	-16.563	0.098785	0.4	0.0108	0.0880	Dec-80
68	Jan-81	NEW JERSEY NATURAL GAS	NJNG	-16.813	0.015094	0	0.0094	0.0057	Jan-81
68	Feb-81	NEW JERSEY NATURAL GAS	NJNG	-16.875	0.003717	0	0.0088	-0.0051	Feb-81
68	Mar-81	NEW JERSEY NATURAL GAS	NJNG	-17.188	0.042222	0.4	0.0111	0.0311	Mar-81
68	Apr-81	NEW JERSEY NATURAL GAS	NJNG	-15.688	-0.08727	0	0.0101	-0.0974	Apr-81
68	May-81	NEW JERSEY NATURAL GAS	NJNG	-15.125	-0.03586	0	0.0104	-0.0463	May-81
68	Jun-81	NEW JERSEY NATURAL GAS	NJNG	-13.813	-0.06033	0.4	0.0109	-0.0712	Jun-81
68	Jul-81	NEW JERSEY NATURAL GAS	NJNG	-13.75	-0.00453	0	0.0109	-0.0154	Jul-81
68	Aug-81	NEW JERSEY NATURAL GAS	NJNG	-13.563	-0.01364	0	0.0110	-0.0246	Aug-81
68	Sep-81	NEW JERSEY NATURAL GAS	NJNG	-12.375	-0.05659	0.42	0.0114	-0.0680	Sep-81
68	Oct-81	NEW JERSEY NATURAL GAS	NJNG	-12.625	0.020202	0	0.0117	0.0085	Oct-81
68	Nov-81	NEW JERSEY NATURAL GAS	NJNG	-14.188	0.123762	0	0.0113	0.1125	Nov-81
68	Dec-81	NEW JERSEY NATURAL GAS	NJNG	-13.875	0.007577	0.42	0.0100	-0.0024	Dec-81
68	Jan-82	NEW JERSEY RES	NJRE	-14.063	0.013514	0	0.0108	0.0027	Jan-82
68	Feb-82	NEW JERSEY RES	NJRE	-14.188	0.008889	0	0.0103	-0.0014	Feb-82
68	Mar-82	NEW JERSEY RES	NJRE	-13.125	-0.04529	0.42	0.0124	-0.0577	Mar-82
68	Apr-82	NEW JERSEY RES	NJRE	-13.5	0.028571	0	0.0112	0.0174	Apr-82
68	May-82	NEW JERSEY RES	NJRE	-13.5	0	0	0.0101	-0.0101	May-82
68	Jun-82	NEW JERSEY RES	NJRE	-13.875	0.058889	0.42	0.0120	0.0469	Jun-82
68	Jul-82	NEW JERSEY RES	NJR	13.5	-0.02703	0	0.0114	-0.0384	Jul-82
68	Aug-82	NEW JERSEY RES	NJR	15	0.111111	0	0.0112	0.0999	Aug-82
68	Sep-82	NEW JERSEY RES	NJR	14.75	0.012667	0.44	0.0100	0.0027	Sep-82
68	Oct-82	NEW JERSEY RES	NJR	15.75	0.067797	0	0.0091	0.0587	Oct-82
68	Nov-82	NEW JERSEY RES	NJR	16.75	0.063492	0	0.0094	0.0541	Nov-82
68	Dec-82	NEW JERSEY RES	NJR	15.25	-0.06328	0.44	0.0093	-0.0726	Dec-82
68	Jan-83	NEW JERSEY RES	NJR	17.25	0.131148	0	0.0087	0.1224	Jan-83
68	Feb-83	NEW JERSEY RES	NJR	16.375	-0.05073	0	0.0081	-0.0588	Feb-83
68	Mar-83	NEW JERSEY RES	NJR	15.875	-0.00366	0.44	0.0089	-0.0126	Mar-83
68	Apr-83	NEW JERSEY RES	NJR	16.125	0.015748	0	0.0085	0.0072	Apr-83
68	May-83	NEW JERSEY RES	NJR	17	0.054264	0	0.0091	0.0452	May-83
68	Jun-83	NEW JERSEY RES	NJR	15.875	-0.04029	0.44	0.0090	-0.0493	Jun-83
68	Jul-83	NEW JERSEY RES	NJR	16.125	0.015748	0	0.0088	0.0069	Jul-83
68	Aug-83	NEW JERSEY RES	NJR	16.75	0.03876	0	0.0103	0.0285	Aug-83
68	Sep-83	NEW JERSEY RES	NJR	17.75	0.087164	0.46	0.0096	0.0776	Sep-83
68	Oct-83	NEW JERSEY RES	NJR	17.125	-0.03521	0	0.0095	-0.0447	Oct-83
68	Nov-83	NEW JERSEY RES	NJR	27	0.576642	0	0.0094	0.5672	Nov-83
68	Dec-83	NEW JERSEY RES	NJR	24	-0.09407	0.46	0.0094	-0.1035	Dec-83
68	Jan-84	NEW JERSEY RES	NJR	20	-0.16667	0	0.0103	-0.1770	Jan-84
68	Feb-84	NEW JERSEY RES	NJR	22.125	0.10625	0	0.0092	0.0971	Feb-84
68	Mar-84	NEW JERSEY RES	NJR	20.875	-0.03571	0.46	0.0098	-0.0455	Mar-84
68	Apr-84	NEW JERSEY RES	NJR	21.375	0.023952	0	0.0104	0.0136	Apr-84
68	May-84	NEW JERSEY RES	NJR	24.25	0.134503	0	0.0103	0.1242	May-84

68	Jun-84	NEW JERSEY RES	NJR	22.75	-0.04083	0.51	0.0106	-0.0514	Jun-84
68	Jul-84	NEW JERSEY RES	NJR	23.5	0.032967	0	0.0116	0.0214	Jul-84
68	Aug-84	NEW JERSEY RES	NJR	25	0.06383	0	0.0106	0.0532	Aug-84
68	Sep-84	NEW JERSEY RES	NJR	25.75	0.0504	0.51	0.0094	0.0410	Sep-84
68	Oct-84	NEW JERSEY RES	NJR	26.25	0.019417	0	0.0108	0.0086	Oct-84
68	Nov-84	NEW JERSEY RES	NJR	25.875	-0.01429	0	0.0091	-0.0234	Nov-84
68	Dec-84	NEW JERSEY RES	NJR	26	0.024541	0.51	0.0098	0.0147	Dec-84
68	Jan-85	NEW JERSEY RES	NJR	25.25	-0.02885	0	0.0096	-0.0384	Jan-85
68	Feb-85	NEW JERSEY RES	NJR	25.5	0.009901	0	0.0082	0.0017	Feb-85
68	Mar-85	NEW JERSEY RES	NJR	25.875	0.034706	0.51	0.0094	0.0253	Mar-85
68	Apr-85	NEW JERSEY RES	NJR	26.5	0.024155	0	0.0102	0.0140	Apr-85
68	May-85	NEW JERSEY RES	NJR	28.75	0.084906	0	0.0097	0.0752	May-85
68	Jun-85	NEW JERSEY RES	NJR	27.625	-0.02	0.55	0.0080	-0.0280	Jun-85
68	Jul-85	NEW JERSEY RES	NJR	27.25	-0.01358	0	0.0094	-0.0230	Jul-85
68	Aug-85	NEW JERSEY RES	NJR	27.375	0.004587	0	0.0085	-0.0039	Aug-85
68	Sep-85	NEW JERSEY RES	NJR	25.625	-0.04384	0.55	0.0088	-0.0526	Sep-85
68	Oct-85	NEW JERSEY RES	NJR	25.125	-0.01951	0	0.0089	-0.0284	Oct-85
68	Nov-85	NEW JERSEY RES	NJR	25.875	0.029851	0	0.0081	0.0218	Nov-85
68	Dec-85	NEW JERSEY RES	NJR	25.625	0.011594	0.55	0.0086	0.0030	Dec-85
68	Jan-86	NEW JERSEY RES	NJR	26.75	0.043902	0	0.0079	0.0360	Jan-86
68	Feb-86	NEW JERSEY RES	NJR	29.375	0.098131	0	0.0073	0.0908	Feb-86
68	Mar-86	NEW JERSEY RES	NJR	28.75	-0.00255	0.55	0.0071	-0.0097	Mar-86
68	Apr-86	NEW JERSEY RES	NJR	28	-0.02609	0	0.0063	-0.0324	Apr-86
68	May-86	NEW JERSEY RES	NJR	28.875	0.03125	0	0.0062	0.0251	May-86
68	Jun-86	NEW JERSEY RES	NJR	29.875	0.054719	0.58	0.0070	0.0477	Jun-86
68	Jul-86	NEW JERSEY RES	NJR	31.625	0.058577	0	0.0066	0.0520	Jul-86
68	Aug-86	NEW JERSEY RES	NJR	33.5	0.059289	0	0.0063	0.0530	Aug-86
68	Sep-86	NEW JERSEY RES	NJR	29.75	-0.09463	0.58	0.0065	-0.1011	Sep-86
68	Oct-86	NEW JERSEY RES	NJR	29.75	0	0	0.0069	-0.0069	Oct-86
68	Nov-86	NEW JERSEY RES	NJR	30	0.008403	0	0.0059	0.0025	Nov-86
68	Dec-86	NEW JERSEY RES	NJR	29.5	0.002667	0.58	0.0070	-0.0043	Dec-86
68	Jan-87	NEW JERSEY RES	NJR	36	0.220339	0	0.0064	0.2139	Jan-87
68	Feb-87	NEW JERSEY RES	NJR	37.875	0.052083	0	0.0059	0.0462	Feb-87
68	Mar-87	NEW JERSEY RES	NJR	19.125	0.025215	0.58	0.0066	0.0186	Mar-87
68	Apr-87	NEW JERSEY RES	NJR	19.25	0.006536	0	0.0065	0.0000	Apr-87
68	May-87	NEW JERSEY RES	NJR	20.5	0.064935	0	0.0066	0.0583	May-87
68	Jun-87	NEW JERSEY RES	NJR	21	0.039512	0.31	0.0075	0.0320	Jun-87
68	Jul-87	NEW JERSEY RES	NJR	22.625	0.077381	0	0.0073	0.0701	Jul-87
68	Aug-87	NEW JERSEY RES	NJR	22.75	0.005525	0	0.0075	-0.0020	Aug-87
68	Sep-87	NEW JERSEY RES	NJR	21.875	-0.02484	0.31	0.0075	-0.0323	Sep-87
68	Oct-87	NEW JERSEY RES	NJR	18.125	-0.17143	0	0.0079	-0.1793	Oct-87
68	Nov-87	NEW JERSEY RES	NJR	18.375	0.013793	0	0.0075	0.0063	Nov-87
68	Dec-87	NEW JERSEY RES	NJR	16.5	-0.08517	0.31	0.0078	-0.0930	Dec-87
68	Jan-88	NEW JERSEY RES	NJR	17.875	0.083333	0	0.0072	0.0761	Jan-88

68	Feb-88	NEW JERSEY RES	NJR	19.5	0.090909	0	0.0071	0.0838	Feb-88
68	Mar-88	NEW JERSEY RES	NJR	19.5	0.015897	0.31	0.0072	0.0087	Mar-88
68	Apr-88	NEW JERSEY RES	NJR	19.375	-0.00641	0	0.0070	-0.0134	Apr-88
68	May-88	NEW JERSEY RES	NJR	18.75	-0.03226	0	0.0078	-0.0401	May-88
68	Jun-88	NEW JERSEY RES	NJR	18.75	0.0176	0.33	0.0076	0.0100	Jun-88
68	Jul-88	NEW JERSEY RES	NJR	18	-0.04	0	0.0071	-0.0471	Jul-88
68	Aug-88	NEW JERSEY RES	NJR	18	0	0	0.0083	-0.0083	Aug-88
68	Sep-88	NEW JERSEY RES	NJR	19.625	0.108611	0.33	0.0076	0.1010	Sep-88
68	Oct-88	NEW JERSEY RES	NJR	19	-0.03185	0	0.0076	-0.0394	Oct-88
68	Nov-88	NEW JERSEY RES	NJR	19.125	0.006579	0	0.0070	-0.0004	Nov-88
68	Dec-88	NEW JERSEY RES	NJR	17.75	-0.05464	0.33	0.0075	-0.0621	Dec-88
68	Jan-89	NEW JERSEY RES	NJR	18.375	0.035211	0	0.0080	0.0272	Jan-89
68	Feb-89	NEW JERSEY RES	NJR	18.5	0.006803	0	0.0069	-0.0001	Feb-89
68	Mar-89	NEW JERSEY RES	NJR	17.625	-0.02946	0.33	0.0079	-0.0374	Mar-89
68	Apr-89	NEW JERSEY RES	NJR	17.5	-0.00709	0	0.0070	-0.0141	Apr-89
68	May-89	NEW JERSEY RES	NJR	19.625	0.121429	0	0.0080	0.1134	May-89
68	Jun-89	NEW JERSEY RES	NJR	20	0.036943	0.35	0.0070	0.0299	Jun-89
68	Jul-89	NEW JERSEY RES	NJR	20.375	0.01875	0	0.0068	0.0120	Jul-89
68	Aug-89	NEW JERSEY RES	NJR	20	-0.01841	0	0.0066	-0.0250	Aug-89
68	Sep-89	NEW JERSEY RES	NJR	19.5	-0.0075	0.35	0.0065	-0.0140	Sep-89
68	Oct-89	NEW JERSEY RES	NJR	19.625	0.00641	0	0.0072	-0.0008	Oct-89
68	Nov-89	NEW JERSEY RES	NJR	20.875	0.063694	0	0.0064	0.0573	Nov-89
68	Dec-89	NEW JERSEY RES	NJR	21	0.022754	0.35	0.0064	0.0164	Dec-89
68	Jan-90	NEW JERSEY RES	NJR	18.75	-0.10714	0	0.0073	-0.1144	Jan-90
68	Feb-90	NEW JERSEY RES	NJR	19.125	0.02	0	0.0066	0.0134	Feb-90
68	Mar-90	NEW JERSEY RES	NJR	18.5	-0.01438	0.35	0.0071	-0.0215	Mar-90
68	Apr-90	NEW JERSEY RES	NJR	18	-0.02703	0	0.0075	-0.0345	Apr-90
68	May-90	NEW JERSEY RES	NJR	19	0.055556	0	0.0075	0.0481	May-90
68	Jun-90	NEW JERSEY RES	NJR	18.5	-0.00684	0.37	0.0068	-0.0136	Jun-90
68	Jul-90	NEW JERSEY RES	NJR	18	-0.02703	0	0.0074	-0.0344	Jul-90
68	Aug-90	NEW JERSEY RES	NJR	17.125	-0.04861	0	0.0071	-0.0557	Aug-90
68	Sep-90	NEW JERSEY RES	NJR	18	0.072701	0.37	0.0069	0.0658	Sep-90
68	Oct-90	NEW JERSEY RES	NJR	17.75	-0.01389	0	0.0081	-0.0220	Oct-90
68	Nov-90	NEW JERSEY RES	NJR	18.375	0.035211	0	0.0071	0.0281	Nov-90
68	Dec-90	NEW JERSEY RES	NJR	18.375	0.020136	0.37	0.0072	0.0129	Dec-90
68	Jan-91	NEW JERSEY RES	NJR	17.875	-0.02721	0	0.0071	-0.0343	Jan-91
68	Feb-91	NEW JERSEY RES	NJR	18.5	0.034965	0	0.0064	0.0286	Feb-91
68	Mar-91	NEW JERSEY RES	NJR	17.75	-0.02054	0.37	0.0064	-0.0269	Mar-91
68	Apr-91	NEW JERSEY RES	NJR	18.875	0.06338	0	0.0076	0.0558	Apr-91
68	May-91	NEW JERSEY RES	NJR	19.5	0.033113	0	0.0068	0.0263	May-91
68	Jun-91	NEW JERSEY RES	NJR	18.625	-0.02539	0.38	0.0063	-0.0317	Jun-91
68	Jul-91	NEW JERSEY RES	NJR	18.375	-0.01342	0	0.0076	-0.0210	Jul-91
68	Aug-91	NEW JERSEY RES	NJR	18.875	0.027211	0	0.0068	0.0204	Aug-91
68	Sep-91	NEW JERSEY RES	NJR	19.75	0.06649	0.38	0.0068	0.0597	Sep-91

68	Oct-91	NEW JERSEY RES	NJR	19.25	-0.02532	0	0.0065	-0.0318	Oct-91
68	Nov-91	NEW JERSEY RES	NJR	20.375	0.058442	0	0.0060	0.0524	Nov-91
68	Dec-91	NEW JERSEY RES	NJR	20.375	0.01865	0.38	0.0068	0.0119	Dec-91
68	Jan-92	NEW JERSEY RES	NJR	19	-0.06749	0	0.0061	-0.0736	Jan-92
68	Feb-92	NEW JERSEY RES	NJR	18.875	-0.00658	0	0.0059	-0.0125	Feb-92
68	Mar-92	NEW JERSEY RES	NJR	19	0.026755	0.38	0.0067	0.0201	Mar-92
68	Apr-92	NEW JERSEY RES	NJR	19.75	0.039474	0	0.0065	0.0330	Apr-92
68	May-92	NEW JERSEY RES	NJR	20.375	0.031646	0	0.0061	0.0255	May-92
68	Jun-92	NEW JERSEY RES	NJR	20.125	0.00638	0.38	0.0067	-0.0003	Jun-92
68	Jul-92	NEW JERSEY RES	NJR	22.625	0.124224	0	0.0063	0.1179	Jul-92
68	Aug-92	NEW JERSEY RES	NJR	22.75	0.005525	0	0.0060	-0.0005	Aug-92
68	Sep-92	NEW JERSEY RES	NJR	22.375	0.00022	0.38	0.0058	-0.0056	Sep-92
68	Oct-92	NEW JERSEY RES	NJR	23.25	0.039106	0	0.0057	0.0334	Oct-92
68	Nov-92	NEW JERSEY RES	NJR	22.75	-0.02151	0	0.0061	-0.0276	Nov-92
68	Dec-92	NEW JERSEY RES	NJR	24.375	0.088132	0.38	0.0063	0.0818	Dec-92
68	Jan-93	NEW JERSEY RES	NJR	25.25	0.035897	0	0.0059	0.0300	Jan-93
68	Feb-93	NEW JERSEY RES	NJR	26.625	0.054455	0	0.0055	0.0490	Feb-93
68	Mar-93	NEW JERSEY RES	NJR	26.25	0.000188	0.38	0.0063	-0.0061	Mar-93
68	Apr-93	NEW JERSEY RES	NJR	25.875	-0.01429	0	0.0057	-0.0200	Apr-93
68	May-93	NEW JERSEY RES	NJR	25.875	0	0	0.0052	-0.0052	May-93
68	Jun-93	NEW JERSEY RES	NJR	27.75	0.08715	0.38	0.0062	0.0810	Jun-93
68	Jul-93	NEW JERSEY RES	NJR	27.75	0	0	0.0054	-0.0054	Jul-93
68	Aug-93	NEW JERSEY RES	NJR	28.25	0.018018	0	0.0056	0.0124	Aug-93
68	Sep-93	NEW JERSEY RES	NJR	29.125	0.044425	0.38	0.0050	0.0394	Sep-93
68	Oct-93	NEW JERSEY RES	NJR	27.5	-0.05579	0	0.0049	-0.0607	Oct-93
68	Nov-93	NEW JERSEY RES	NJR	25.875	-0.05909	0	0.0053	-0.0644	Nov-93
68	Dec-93	NEW JERSEY RES	NJR	25.875	0.014686	0.38	0.0055	0.0092	Dec-93
68	Jan-94	NEW JERSEY RES	NJR	26.25	0.014493	0	0.0055	0.0090	Jan-94
68	Feb-94	NEW JERSEY RES	NJR	25.75	-0.01905	0	0.0049	-0.0239	Feb-94
68	Mar-94	NEW JERSEY RES	NJR	24.375	-0.03864	0.38	0.0058	-0.0444	Mar-94
68	Apr-94	NEW JERSEY RES	NJR	24.75	0.015385	0	0.0057	0.0097	Apr-94
68	May-94	NEW JERSEY RES	NJR	24	-0.0303	0	0.0063	-0.0366	May-94
68	Jun-94	NEW JERSEY RES	NJR	22	-0.0675	0.38	0.0061	-0.0736	Jun-94
68	Jul-94	NEW JERSEY RES	NJR	22.25	0.011364	0	0.0060	0.0054	Jul-94
68	Aug-94	NEW JERSEY RES	NJR	22.375	0.005618	0	0.0066	-0.0010	Aug-94
68	Sep-94	NEW JERSEY RES	NJR	21.125	-0.03888	0.38	0.0061	-0.0450	Sep-94
68	Oct-94	NEW JERSEY RES	NJR	21.75	0.029586	0	0.0066	0.0230	Oct-94
68	Nov-94	NEW JERSEY RES	NJR	22.875	0.051724	0	0.0064	0.0453	Nov-94
68	Dec-94	NEW JERSEY RES	NJR	22.625	0.005683	0.38	0.0066	-0.0009	Dec-94
68	Jan-95	NEW JERSEY RES	NJR	22.375	-0.01105	0	0.0070	-0.0181	Jan-95
68	Feb-95	NEW JERSEY RES	NJR	23.125	0.03352	0	0.0059	0.0276	Feb-95
68	Mar-95	NEW JERSEY RES	NJR	22.25	-0.02141	0.38	0.0064	-0.0278	Mar-95
68	Apr-95	NEW JERSEY RES	NJR	22.5	0.011236	0	0.0058	0.0054	Apr-95
68	May-95	NEW JERSEY RES	NJR	22.75	0.011111	0	0.0065	0.0046	May-95

68	Jun-95	NEW JERSEY RES	NJR	23.125	0.033187	0.38	0.0054	0.0278	Jun-95
68	Jul-95	NEW JERSEY RES	NJR	23.75	0.027027	0	0.0056	0.0214	Jul-95
68	Aug-95	NEW JERSEY RES	NJR	24	0.010526	0	0.0057	0.0048	Aug-95
68	Sep-95	NEW JERSEY RES	NJR	25.875	0.093958	0.38	0.0052	0.0888	Sep-95
68	Oct-95	NEW JERSEY RES	NJR	25	-0.03382	0	0.0057	-0.0395	Oct-95
68	Nov-95	NEW JERSEY RES	NJR	27.875	0.115	0	0.0051	0.1099	Nov-95
68	Dec-95	NEW JERSEY RES	NJR	30.125	0.09435	0.38	0.0049	0.0895	Dec-95
68	Jan-96	NEW JERSEY RES	NJR	27.375	-0.09129	0	0.0054	-0.0967	Jan-96
68	Feb-96	NEW JERSEY RES	NJR	29.125	0.063927	0	0.0048	0.0591	Feb-96
68	Mar-96	NEW JERSEY RES	NJR	28.875	0.004807	0.39	0.0052	-0.0004	Mar-96
68	Apr-96	NEW JERSEY RES	NJR	28.375	-0.01732	0	0.0059	-0.0232	Apr-96
68	May-96	NEW JERSEY RES	NJR	27.5	-0.03084	0	0.0058	-0.0366	May-96
68	Jun-96	NEW JERSEY RES	NJR	28.75	0.059636	0.39	0.0054	0.0542	Jun-96
68	Jul-96	NEW JERSEY RES	NJR	27.75	-0.03478	0	0.0062	-0.0410	Jul-96
68	Aug-96	NEW JERSEY RES	NJR	28.625	0.031532	0	0.0057	0.0258	Aug-96
68	Sep-96	NEW JERSEY RES	NJR	28	-0.00821	0.39	0.0060	-0.0142	Sep-96
68	Oct-96	NEW JERSEY RES	NJR	27.625	-0.01339	0	0.0058	-0.0192	Oct-96
68	Nov-96	NEW JERSEY RES	NJR	29.625	0.072398	0	0.0052	0.0672	Nov-96
68	Dec-96	NEW JERSEY RES	NJR	29.25	0.000844	0.4	0.0056	-0.0048	Dec-96
68	Jan-97	NEW JERSEY RES	NJR	29.875	0.021368	0	0.0056	0.0158	Jan-97
68	Feb-97	NEW JERSEY RES	NJR	28.75	-0.03766	0	0.0051	-0.0428	Feb-97
68	Mar-97	NEW JERSEY RES	NJR	28.5	0.005217	0.4	0.0059	-0.0007	Mar-97
68	Apr-97	NEW JERSEY RES	NJR	28.875	0.013158	0	0.0059	0.0073	Apr-97
68	May-97	NEW JERSEY RES	NJR	31.125	0.077922	0	0.0058	0.0721	May-97
68	Jun-97	NEW JERSEY RES	NJR	31.375	0.020884	0.4	0.0059	0.0150	Jun-97
68	Jul-97	NEW JERSEY RES	NJR	31.625	0.007968	0	0.0058	0.0022	Jul-97
68	Aug-97	NEW JERSEY RES	NJR	32.0625	0.013834	0	0.0049	0.0089	Aug-97
68	Sep-97	NEW JERSEY RES	NJR	32.375	0.022222	0.4	0.0058	0.0164	Sep-97
68	Oct-97	NEW JERSEY RES	NJR	32.375	0	0	0.0054	-0.0054	Oct-97
68	Nov-97	NEW JERSEY RES	NJR	34.8125	0.07529	0	0.0047	0.0706	Nov-97
68	Dec-97	NEW JERSEY RES	NJR	40.0625	0.162585	0.41	0.0054	0.1572	Dec-97
68	Jan-98	NEW JERSEY RES	NJR	35.5	-0.11389	0	0.0048	-0.1187	Jan-98
68	Feb-98	NEW JERSEY RES	NJR	36.5	0.028169	0	0.0044	0.0238	Feb-98
68	Mar-98	NEW JERSEY RES	NJR	39.1875	0.084863	0.41	0.0052	0.0797	Mar-98
68	Apr-98	NEW JERSEY RES	NJR	37.75	-0.03668	0	0.0049	-0.0416	Apr-98
68	May-98	NEW JERSEY RES	NJR	35.9375	-0.04801	0	0.0048	-0.0528	May-98
68	Jun-98	NEW JERSEY RES	NJR	35.6875	0.004452	0.41	0.0052	-0.0007	Jun-98
68	Jul-98	NEW JERSEY RES	NJR	34.25	-0.04028	0	0.0049	-0.0452	Jul-98
68	Aug-98	NEW JERSEY RES	NJR	33.6875	-0.01642	0	0.0048	-0.0212	Aug-98
68	Sep-98	NEW JERSEY RES	NJR	35.625	0.069685	0.41	0.0044	0.0653	Sep-98
68	Oct-98	NEW JERSEY RES	NJR	38.4375	0.078947	0	0.0042	0.0747	Oct-98
68	Nov-98	NEW JERSEY RES	NJR	38.9375	0.013008	0	0.0045	0.0085	Nov-98
68	Dec-98	NEW JERSEY RES	NJR	39.5	0.025233	0.42	0.0045	0.0207	Dec-98
68	Jan-99	NEW JERSEY RES	NJR	36.375	-0.07911	0	0.0042	-0.0833	Jan-99

68	Feb-99	NEW JERSEY RES	NJR	34.9375	-0.03952	0	0.0040	-0.0435	Feb-99
68	Mar-99	NEW JERSEY RES	NJR	35.5625	0.029911	0.42	0.0053	0.0246	Mar-99
68	Apr-99	NEW JERSEY RES	NJR	36.875	0.036907	0	0.0048	0.0321	Apr-99
68	May-99	NEW JERSEY RES	NJR	37.75	0.023729	0	0.0045	0.0192	May-99
68	Jun-99	NEW JERSEY RES	NJR	37.4375	0.002848	0.42	0.0055	-0.0027	Jun-99
68	Jul-99	NEW JERSEY RES	NJR	39.5625	0.056761	0	0.0051	0.0517	Jul-99
68	Aug-99	NEW JERSEY RES	NJR	38.75	-0.02054	0	0.0054	-0.0259	Aug-99
68	Sep-99	NEW JERSEY RES	NJR	40	0.043097	0.42	0.0052	0.0379	Sep-99
68	Oct-99	NEW JERSEY RES	NJR	40.6875	0.017188	0	0.0050	0.0122	Oct-99
68	Nov-99	NEW JERSEY RES	NJR	40.25	-0.01075	0	0.0056	-0.0164	Nov-99
68	Dec-99	NEW JERSEY RES	NJR	39.0625	-0.01882	0.43	0.0055	-0.0243	Dec-99
68	Jan-00	NEW JERSEY RES	NJR	37.8125	-0.032	0	0.0057	-0.0377	Jan-00
68	Feb-00	NEW JERSEY RES	NJR	37.125	-0.01818	0	0.0051	-0.0233	Feb-00
68	Mar-00	NEW JERSEY RES	NJR	42.75	0.163098	0.43	0.0054	0.1577	Mar-00
68	Apr-00	NEW JERSEY RES	NJR	40.25	-0.05848	0	0.0047	-0.0632	Apr-00
68	May-00	NEW JERSEY RES	NJR	38.75	-0.03727	0	0.0056	-0.0429	May-00
68	Jun-00	NEW JERSEY RES	NJR	38.0625	-0.00665	0.43	0.0052	-0.0118	Jun-00
68	Jul-00	NEW JERSEY RES	NJR	40	0.050903	0	0.0052	0.0457	Jul-00
68	Aug-00	NEW JERSEY RES	NJR	40	0	0	0.0050	-0.0050	Aug-00
68	Sep-00	NEW JERSEY RES	NJR	40.625	0.026375	0.43	0.0046	0.0218	Sep-00
68	Oct-00	NEW JERSEY RES	NJR	39.9375	-0.01692	0	0.0053	-0.0222	Oct-00
68	Nov-00	NEW JERSEY RES	NJR	40.25	0.007825	0	0.0048	0.0030	Nov-00
68	Dec-00	NEW JERSEY RES	NJR	43.25	0.085466	0.44	0.0045	0.0810	Dec-00
68	Jan-01	NEW JERSEY RES	NJR	37.26	-0.1385	0	0.0049	-0.1434	Jan-01
68	Feb-01	NEW JERSEY RES	NJR	38.26	0.026838	0	0.0042	0.0226	Feb-01
68	Mar-01	NEW JERSEY RES	NJR	41.15	0.087036	0.44	0.0045	0.0825	Mar-01
68	Apr-01	NEW JERSEY RES	NJR	43.29	0.052005	0	0.0047	0.0473	Apr-01
68	May-01	NEW JERSEY RES	NJR	44.64	0.031185	0	0.0050	0.0262	May-01
68	Jun-01	NEW JERSEY RES	NJR	45.2	0.022401	0.44	0.0047	0.0177	Jun-01
68	Jul-01	NEW JERSEY RES	NJR	43.45	-0.03872	0	0.0052	-0.0439	Jul-01
68	Aug-01	NEW JERSEY RES	NJR	45	0.035673	0	0.0046	0.0311	Aug-01
68	Sep-01	NEW JERSEY RES	NJR	44.21	-0.00778	0.44	0.0041	-0.0119	Sep-01
68	Oct-01	NEW JERSEY RES	NJR	45	0.017869	0	0.0048	0.0131	Oct-01
68	Nov-01	NEW JERSEY RES	NJR	46.95	0.043333	0	0.0041	0.0392	Nov-01
68	Dec-01	NEW JERSEY RES	NJR	46.8	0.00639	0.45	0.0046	0.0018	Dec-01
68	Jan-02	NEW JERSEY RES	NJR	45.37	-0.03056	0	0.0048	-0.0354	Jan-02
68	Feb-02	NEW JERSEY RES	NJR	45.59	0.004849	0	0.0043	0.0005	Feb-02
68	Mar-02	NEW JERSEY RES	NJR	30.24	0.004826	0.45	0.0043	0.0005	Mar-02
68	Apr-02	NEW JERSEY RES	NJR	32	0.058201	0	0.0054	0.0528	Apr-02
68	May-02	NEW JERSEY RES	NJR	30.5	-0.04688	0	0.0049	-0.0518	May-02
68	Jun-02	NEW JERSEY RES	NJR	29.85	-0.01148	0.3	0.0044	-0.0159	Jun-02
68	Jul-02	NEW JERSEY RES	NJR	30.2	0.011725	0	0.0051	0.0066	Jul-02
68	Aug-02	NEW JERSEY RES	NJR	31.25	0.034768	0	0.0044	0.0304	Aug-02
68	Sep-02	NEW JERSEY RES	NJR	32.9	0.0624	0.3	0.0042	0.0582	Sep-02

68	Oct-02	NEW JERSEY RES	NJR	31.58	-0.04012	0	0.0040	-0.0441	Oct-02
68	Nov-02	NEW JERSEY RES	NJR	31.45	-0.00412	0	0.0040	-0.0081	Nov-02
68	Dec-02	NEW JERSEY RES	NJR	31.59	0.014308	0.31	0.0045	0.0098	Dec-02
68	Jan-03	NEW JERSEY RES	NJR	31.81	0.006964	0	0.0041	0.0029	Jan-03
68	Feb-03	NEW JERSEY RES	NJR	32.07	0.008174	0	0.0038	0.0044	Feb-03
68	Mar-03	NEW JERSEY RES	NJR	32.65	0.027752	0.31	0.0040	0.0238	Mar-03
68	Apr-03	NEW JERSEY RES	NJR	34.25	0.049005	0	0.0040	0.0450	Apr-03
68	May-03	NEW JERSEY RES	NJR	35.37	0.032701	0	0.0039	0.0288	May-03
68	Jun-03	NEW JERSEY RES	NJR	35.5	0.01244	0.31	0.0036	0.0088	Jun-03
68	Jul-03	NEW JERSEY RES	NJR	34.88	-0.01747	0	0.0038	-0.0213	Jul-03
68	Aug-03	NEW JERSEY RES	NJR	36.1	0.034977	0	0.0042	0.0308	Aug-03
68	Sep-03	NEW JERSEY RES	NJR	36.04	0.006925	0.31	0.0046	0.0023	Sep-03
68	Oct-03	NEW JERSEY RES	NJR	37.85	0.050222	0	0.0041	0.0461	Oct-03
68	Nov-03	NEW JERSEY RES	NJR	38.4	0.014531	0	0.0039	0.0106	Nov-03
68	Dec-03	NEW JERSEY RES	NJR	38.51	0.011328	0.325	0.0047	0.0066	Dec-03
68	Jan-04	NEW JERSEY RES	NJR	38.59	0.002077	0	0.0042	-0.0021	Jan-04
68	Feb-04	NEW JERSEY RES	NJR	38.9	0.008033	0	0.0038	0.0042	Feb-04
68	Mar-04	NEW JERSEY RES	NJR	37.8	-0.01992	0.325	0.0043	-0.0242	Mar-04
68	Apr-04	NEW JERSEY RES	NJR	38.11	0.008201	0	0.0039	0.0043	Apr-04
68	May-04	NEW JERSEY RES	NJR	39.27	0.030438	0	0.0040	0.0264	May-04
68	Jun-04	NEW JERSEY RES	NJR	41.58	0.0671	0.325	0.0048	0.0623	Jun-04
68	Jul-04	NEW JERSEY RES	NJR	40.65	-0.02237	0	0.0043	-0.0267	Jul-04
68	Aug-04	NEW JERSEY RES	NJR	40.85	0.00492	0	0.0045	0.0004	Aug-04
68	Sep-04	NEW JERSEY RES	NJR	41.4	0.02142	0.325	0.0040	0.0174	Sep-04
68	Oct-04	NEW JERSEY RES	NJR	41.11	-0.00701	0	0.0038	-0.0108	Oct-04
68	Nov-04	NEW JERSEY RES	NJR	43.5	0.058137	0	0.0041	0.0540	Nov-04
68	Dec-04	NEW JERSEY RES	NJR	43.34	0.004138	0.34	0.0043	-0.0002	Dec-04
68	Jan-05	NEW JERSEY RES	NJR	43.85	0.011767	0	0.0041	0.0077	Jan-05
68	Feb-05	NEW JERSEY RES	NJR	44.4	0.012543	0	0.0035	0.0090	Feb-05
68	Mar-05	NEW JERSEY RES	NJR	43.53	-0.01194	0.34	0.0041	-0.0160	Mar-05
68	Apr-05	NEW JERSEY RES	NJR	43.36	-0.00391	0	0.0039	-0.0078	Apr-05
68	May-05	NEW JERSEY RES	NJR	45.1	0.040129	0	0.0040	0.0361	May-05
68	Jun-05	NEW JERSEY RES	NJR	48.25	0.077384	0.34	0.0036	0.0738	Jun-05
68	Jul-05	NEW JERSEY RES	NJR	47.26	-0.02052	0	0.0034	-0.0239	Jul-05
68	Aug-05	NEW JERSEY RES	NJR	46.98	-0.00593	0	0.0040	-0.0099	Aug-05
68	Sep-05	NEW JERSEY RES	NJR	45.98	-0.01405	0.34	0.0035	-0.0175	Sep-05
68	Oct-05	NEW JERSEY RES	NJR	43.16	-0.06133	0	0.0039	-0.0652	Oct-05
68	Nov-05	NEW JERSEY RES	NJR	42.51	-0.01506	0	0.0039	-0.0190	Nov-05
68	Dec-05	NEW JERSEY RES	NJR	41.89	-0.00612	0.36	0.0039	-0.0100	Dec-05
68	Jan-06	NEW JERSEY RES	NJR	45.45	0.084985	0	0.0040	0.0810	Jan-06
68	Feb-06	NEW JERSEY RES	NJR	45	-0.0099	0	0.0036	-0.0135	Feb-06
68	Mar-06	NEW JERSEY RES	NJR	45.25	0.013556	0.36	0.0039	0.0097	Mar-06
68	Apr-06	NEW JERSEY RES	NJR	44.27	-0.02166	0	0.0039	-0.0256	Apr-06
68	May-06	NEW JERSEY RES	NJR	44.92	0.014683	0	0.0048	0.0099	May-06

68	Jun-06	NEW JERSEY RES	NJR	46.78	0.049421	0.36	0.0044	0.0450	Jun-06
68	Jul-06	NEW JERSEY RES	NJR	49.93	0.067336	0	0.0045	0.0628	Jul-06
68	Aug-06	NEW JERSEY RES	NJR	49.66	-0.00541	0	0.0043	-0.0097	Aug-06
68	Sep-06	NEW JERSEY RES	NJR	49.3	0	0.36	0.0039	-0.0039	Sep-06
68	Oct-06	NEW JERSEY RES	NJR	51.86	0.051927	0	0.0042	0.0477	Oct-06
68	Nov-06	NEW JERSEY RES	NJR	51.75	-0.00212	0	0.0039	-0.0060	Nov-06
68	Dec-06	NEW JERSEY RES	NJR	48.58	-0.05391	0.38	0.0036	-0.0575	Dec-06
68	Jan-07	NEW JERSEY RES	NJR	46.6	-0.04076	0	0.0043	-0.0451	Jan-07
68	Feb-07	NEW JERSEY RES	NJR	49.39	0.059871	0	0.0038	0.0561	Feb-07
68	Mar-07	NEW JERSEY RES	NJR	50.05	0.021057	0.38	0.0039	0.0172	Mar-07
68	Apr-07	NEW JERSEY RES	NJR	53.7	0.072927	0	0.0042	0.0687	Apr-07
68	May-07	NEW JERSEY RES	NJR	54.78	0.020112	0	0.0041	0.0160	May-07
68	Jun-07	NEW JERSEY RES	NJR	51.02	-0.0617	0.38	0.0040	-0.0657	Jun-07
68	Jul-07	NEW JERSEY RES	NJR	47	-0.07879	0	0.0046	-0.0834	Jul-07
68	Aug-07	NEW JERSEY RES	NJR	48.98	0.042128	0	0.0042	0.0379	Aug-07
68	Sep-07	NEW JERSEY RES	NJR	49.59	0.020212	0.38	0.0037	0.0165	Sep-07
68	Oct-07	NEW JERSEY RES	NJR	49.25	-0.00686	0	0.0043	-0.0112	Oct-07
68	Nov-07	NEW JERSEY RES	NJR	50.45	0.024365	0	0.0039	0.0205	Nov-07
68	Dec-07	NEW JERSEY RES	NJR	50.02	-0.0006	0.4	0.0037	-0.0043	Dec-07
68	Jan-08	NEW JERSEY RES	NJR	46.83	-0.06377	0	0.0040	-0.0678	Jan-08
68	Feb-08	NEW JERSEY RES	NJR	46.01	-0.01751	0	0.0034	-0.0209	Feb-08
68	Mar-08	NEW JERSEY RES	NJR	31.05	0.021408	0.42	0.0037	0.0177	Mar-08
68	Apr-08	NEW JERSEY RES	NJR	31.85	0.025765	0	0.0035	0.0223	Apr-08
68	May-08	NEW JERSEY RES	NJR	33.31	0.04584	0	0.0037	0.0421	May-08
68	Jun-08	NEW JERSEY RES	NJR	32.65	-0.01141	0.28	0.0040	-0.0154	Jun-08
68	Jul-08	NEW JERSEY RES	NJR	34.09	0.044104	0	0.0039	0.0402	Jul-08
68	Aug-08	NEW JERSEY RES	NJR	36.18	0.061308	0	0.0036	0.0577	Aug-08
68	Sep-08	NEW JERSEY RES	NJR	35.89	-0.00028	0.28	0.0039	-0.0042	Sep-08
68	Oct-08	NEW JERSEY RES	NJR	37.24	0.037615	0	0.0037	0.0339	Oct-08
68	Nov-08	NEW JERSEY RES	NJR	40.16	0.07841	0	0.0036	0.0748	Nov-08
68	Dec-08	NEW JERSEY RES	NJR	39.35	-0.01245	0.31	0.0033	-0.0158	Dec-08
68	Jan-09	NEW JERSEY RES	NJR	40.09	0.018806	0	0.0024	0.0164	Jan-09
68	Feb-09	NEW JERSEY RES	NJR	35.07	-0.12522	0	0.0030	-0.1282	Feb-09
68	Mar-09	NEW JERSEY RES	NJR	33.98	-0.02224	0.31	0.0035	-0.0257	Mar-09
68	Apr-09	NEW JERSEY RES	NJR	32.92	-0.0312	0	0.0029	-0.0341	Apr-09
68	May-09	NEW JERSEY RES	NJR	33.27	0.010632	0	0.0033	0.0073	May-09
68	Jun-09	NEW JERSEY RES	NJR	37.04	0.122633	0.31	0.0038	0.1188	Jun-09
68	Jul-09	NEW JERSEY RES	NJR	38.6	0.042117	0	0.0036	0.0385	Jul-09
68	Aug-09	NEW JERSEY RES	NJR	36.75	-0.04793	0	0.0036	-0.0515	Aug-09
68	Sep-09	NEW JERSEY RES	NJR	36.31	-0.00354	0.31	0.0034	-0.0069	Sep-09
68	Oct-09	NEW JERSEY RES	NJR	35.2	-0.03057	0	0.0033	-0.0339	Oct-09
68	Nov-09	NEW JERSEY RES	NJR	35.23	0.000852	0	0.0035	-0.0026	Nov-09
68	Dec-09	NEW JERSEY RES	NJR	37.4	0.071246	0.34	0.0034	0.0678	Dec-09
68	Jan-10	NEW JERSEY RES	NJR	36.49	-0.02433	0	0.0036	-0.0279	Jan-10

68	Feb-10	NEW JERSEY RES	NJR	36.42	-0.00192	0	0.0033	-0.0052	Feb-10
68	Mar-10	NEW JERSEY RES	NJR	37.56	0.040637	0.34	0.0040	0.0366	Mar-10
68	Apr-10	NEW JERSEY RES	NJR	37.73	0.004526	0	0.0038	0.0007	Apr-10
68	May-10	NEW JERSEY RES	NJR	35.45	-0.06043	0	0.0034	-0.0638	May-10
68	Jun-10	NEW JERSEY RES	NJR	35.2	0.002539	0.34	0.0037	-0.0012	Jun-10
68	Jul-10	NEW JERSEY RES	NJR	37.33	0.060511	0	0.0031	0.0574	Jul-10
68	Aug-10	NEW JERSEY RES	NJR	37.21	-0.00322	0	0.0032	-0.0064	Aug-10
68	Sep-10	NEW JERSEY RES	NJR	39.22	0.063155	0.34	0.0026	0.0606	Sep-10
68	Oct-10	NEW JERSEY RES	NJR	40.49	0.032381	0	0.0027	0.0297	Oct-10
68	Nov-10	NEW JERSEY RES	NJR	43.11	0.064707	0	0.0032	0.0615	Nov-10
68	Dec-10	NEW JERSEY RES	NJR	43.11	0.008351	0.36	0.0032	0.0052	Dec-10
68	Jan-11	NEW JERSEY RES	NJR	41.96	-0.02668	0	0.003567	-0.0302	Jan-11
68	Feb-11	NEW JERSEY RES	NJR	41.83	-0.0031	0	0.003683	-0.0068	Feb-11
68	Mar-11	NEW JERSEY RES	NJR	42.95	0.035381	0.36	0.003558	0.0318	Mar-11
68	Apr-11	NEW JERSEY RES	NJR	43.78	0.019325	0	0.003567	0.0158	Apr-11
68	May-11	NEW JERSEY RES	NJR	46.08	0.052535	0	0.003342	0.0492	May-11
68	Jun-11	NEW JERSEY RES	NJR	44.61	-0.02409	0.36	0.003258	-0.0273	Jun-11
68	Jul-11	NEW JERSEY RES	NJR	43.61	-0.02242	0	0.003292	-0.0257	Jul-11
68	Aug-11	NEW JERSEY RES	NJR	47.11	0.080257	0	0.003042	0.0772	Aug-11
68	Sep-11	NEW JERSEY RES	NJR	42.57	-0.08873	0.36	0.002358	-0.0911	Sep-11
68	Oct-11	NEW JERSEY RES	NJR	47.02	0.104534	0	0.002392	0.1021	Oct-11
68	Nov-11	NEW JERSEY RES	NJR	47.31	0.006168	0	0.002267	0.0039	Nov-11
68	Dec-11	NEW JERSEY RES	NJR	49.2	0.047981	0.38	0.002483	0.0455	Dec-11
68	Jan-12	NEW JERSEY RES	NJR	47.72	-0.03008	0	0.0021	-0.0322	Jan-12
68	Feb-12	NEW JERSEY RES	NJR	46.69	-0.02158	0	0.002	-0.0236	Feb-12
68	Mar-12	NEW JERSEY RES	NJR	44.57	-0.03727	0.38	0.0022	-0.0395	Mar-12
68	Apr-12	NEW JERSEY RES	NJR	43.24	-0.02984	0	0.0025	-0.0323	Apr-12
68	May-12	NEW JERSEY RES	NJR	41.98	-0.02914	0	0.0023	-0.0314	May-12
68	Jun-12	NEW JERSEY RES	NJR	43.61	0.04788	0.38	0.0018	0.0461	Jun-12
	Jul-12	NEW JERSEY RES	NJR	45.9	0.052511	0	0.002	0.0505	Jul-12
	Aug-12	NEW JERSEY RES	NJR	44.81	-0.02375	0	0.0018	-0.0255	Aug-12
	Sep-12	NEW JERSEY RES	NJR	45.72	0.037715	0.78	0.0017	0.0360	Sep-12
	Oct-12	NEW JERSEY RES	NJR	44.46	-0.02756	0	0.0021	-0.0297	Oct-12
	Nov-12	NEW JERSEY RES	NJR	40.58	-0.08727	0	0.0019	-0.0892	Nov-12
	Dec-12	NEW JERSEY RES	NJR	39.62	-0.0138	0.4	0.0019	-0.0157	Dec-12
	Jan-13	NEW JERSEY RES	NJR	42.06	0.061585	0	0.0022	0.0594	Jan-13
	Feb-13	NEW JERSEY RES	NJR	44.56	0.059439	0	0.0022	0.0572	Feb-13
	Mar-13	NEW JERSEY RES	NJR	44.85	0.015485	0.4	0.0021	0.0134	Mar-13
	Apr-13	NEW JERSEY RES	NJR	47.2	0.052397	0	0.0026	0.0498	Apr-13
	May-13	NEW JERSEY RES	NJR	45.38	-0.03856	0	0.0023	-0.0409	May-13
	Jun-13	NEW JERSEY RES	NJR	41.53	-0.07602	0.4	0.0024	-0.0784	Jun-13
	Jul-13	NEW JERSEY RES	NJR	44.76	0.077775	0	0.003	0.0748	Jul-13
	Aug-13	NEW JERSEY RES	NJR	43.08	-0.03753	0	0.0028	-0.0403	Aug-13
	Sep-13	NEW JERSEY RES	NJR	44.05	0.032266	0.42	0.0029	0.0294	Sep-13

Oct-13 NEW JERSEY RES	NJR	46.03	0.044949	0	0.0029	0.0420	Oct-13
Nov-13 NEW JERSEY RES	NJR	45.69	-0.00739	0	0.0027	-0.0101	Nov-13
Dec-13 NEW JERSEY RES	NJR	46.24	0.02123	0.42	0.0031	0.0181	Dec-13
Jan-14 NEW JERSEY RES	NJR	45.6	-0.01384	0	0.0032	-0.0170	Jan-14
Feb-14 NEW JERSEY RES	NJR	45.01	-0.01294	0	0.0026	-0.0155	Feb-14
Mar-14 NEW JERSEY RES	NJR	49.8	0.115752	0.42	0.0029	0.1129	Mar-14
Apr-14 NEW JERSEY RES	NJR	49.73	-0.00141	0	0.0028	-0.0042	Apr-14
May-14 NEW JERSEY RES	NJR	55.01	0.106173	0	0.0028	0.1034	May-14
Jun-14 NEW JERSEY RES	NJR	57.16	0.046719	0.42	0.0025	0.0442	Jun-14
Jul-14 NEW JERSEY RES	NJR	51.08	-0.10637	0	0.0027	-0.1091	Jul-14
Aug-14 NEW JERSEY RES	NJR	52.23	0.022514	0	0.0026	0.0199	Aug-14
Sep-14 NEW JERSEY RES	NJR	50.51	-0.02432	0.45	0.0023	-0.0266	Sep-14
Oct-14 NEW JERSEY RES	NJR	58.48	0.157791	0	0.0025	0.1553	Oct-14
Nov-14 NEW JERSEY RES	NJR	57.9	-0.00992	0	0.0023	-0.0122	Nov-14
Dec-14 NEW JERSEY RES	NJR	61.2	0.064767	0.45	0.0022	0.0626	Dec-14
Jan-15 NEW JERSEY RES	NJR	63.88	0.043791	0	0.002	0.0418	Jan-15
Feb-15 NEW JERSEY RES	NJR	62.58	-0.02035	0	0.0015	-0.0219	Feb-15
Mar-15 NEW JERSEY RES	NJR	31.06	-0.00016	0.225	0.0021	-0.0023	Mar-15
Apr-15 NEW JERSEY RES	NJR	30.51	-0.01771	0	0.0019	-0.0196	Apr-15
May-15 NEW JERSEY RES	NJR	30.07	-0.01442	0	0.002	-0.0164	May-15
Jun-15 NEW JERSEY RES	NJR	27.55	-0.07632	0.225	0.003492	-0.0798	Jun-15
Jul-15 NEW JERSEY RES	NJR	28.9	0.049002	0	0.003458	0.0455	Jul-15
Aug-15 NEW JERSEY RES	NJR	28.27	-0.0218	0	0.003367	-0.0252	Aug-15
Sep-15 NEW JERSEY RES	NJR	30.03	0.070746	0.24	0.003392	0.067355	Sep-15
Oct-15 NEW JERSEY RES	NJR	31.68	0.054945	0	0.003292	0.051653	Oct-15
Nov-15 NEW JERSEY RES	NJR	30.05	-0.05145	0	0.003383	-0.054835	Nov-15
Dec-15 NEW JERSEY RES	NJR	32.96	0.104825	0.24	0.003308	0.101517	Dec-15
Jan-16 NEW JERSEY RES	NJR	35.22	0.068568	0	0.003333	0.065235	Jan-16
Feb-16 NEW JERSEY RES	NJR	34.62	-0.01704	0	0.0033	-0.020336	Feb-16
Mar-16 NEW JERSEY RES	NJR	36.43	0.059214	0.24	0.003183	0.056031	Mar-16
Apr-16 NEW JERSEY RES	NJR	35.68	-0.02059	0	0.003183	-0.023771	Apr-16
May-16 NEW JERSEY RES	NJR	35.15	-0.01485	0	0.003042	-0.017896	May-16
Jun-16 NEW JERSEY RES	NJR	38.55	0.103556	0.24	0.002917	0.10064	Jun-16
Jul-16 NEW JERSEY RES	NJR	37.24	-0.03398	0	0.002733	-0.036715	Jul-16
Aug-16 NEW JERSEY RES	NJR	33.64	-0.09667	0	0.002767	-0.099437	Aug-16
Sep-16 NEW JERSEY RES	NJR	32.86	-0.01561	0.255	0.002842	-0.018448	Sep-16
Oct-16 NEW JERSEY RES	NJR	33.95	0.033171	0	0.002842	0.030329	Oct-16
Nov-16 NEW JERSEY RES	NJR	34.45	0.014728	0	0.003217	0.011511	Nov-16
Dec-16 NEW JERSEY RES	NJR	35.5	0.037881	0.255	0.003383	0.034498	Dec-16
Jan-17 NEW JERSEY RES	NJR	37.7	0.061972	0	0.003267	0.058705	Jan-17
Feb-17 NEW JERSEY RES	NJR	39.4	0.045093	0	0.003292	0.041801	Feb-17
Mar-17 NEW JERSEY RES	NJR	39.6	0.011548	0.255	0.003292	0.008257	Mar-17
Apr-17 NEW JERSEY RES	NJR	40.35	0.018939	0	0.003225	0.015714	Apr-17
May-17 NEW JERSEY RES	NJR	41.9	0.038414	0	0.003208	0.035206	May-17

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Jun-17 NEW JERSEY RES	NJR	39.7	-0.04642	0.255	0.003067	-0.049487	Jun-17
Jul-17 NEW JERSEY RES	NJR	42.15	0.061713	0	0.00315	0.058563	Jul-17
Aug-17 NEW JERSEY RES	NJR	43.65	0.035587	0	0.003083	0.032504	Aug-17
Sep-17 NEW JERSEY RES	NJR	42.15	-0.02812	0.2725	0.003025	-0.031146	Sep-17
Oct-17 NEW JERSEY RES	NJR	44.45	0.054567	0	0.003	0.051567	Oct-17
Nov-17 NEW JERSEY RES	NJR	44.6	0.003375	0	0.003	0.000375	Nov-17
Dec-17 NEW JERSEY RES	NJR	40.2	-0.09254	0.2725	0.002925	-0.09547	Dec-17
Jan-18 NEW JERSEY RES	NJR	38.8	-0.03483	0	0.002925	-0.037751	Jan-18
Feb-18 NEW JERSEY RES	NJR	38.1	-0.01804	0	0.002958	-0.021	Feb-18
Mar-18 NEW JERSEY RES	NJR	40.1	0.059646	0.2725	0.003225	0.056421	Mar-18
Apr-18 NEW JERSEY RES	NJR	41.35	0.031172	0	0.003208	0.027964	Apr-18
May-18 NEW JERSEY RES	NJR	44.4	0.073761	0	0.003325	0.070436	May-18
Jun-18 NEW JERSEY RES	NJR	44.75	0.01402	0.2725	0.0033	0.01072	Jun-18
Jul-18 NEW JERSEY RES	NJR	46.25	0.03352	0	0.003225	0.030295	Jul-18
Aug-18 NEW JERSEY RES	NJR	45.6	-0.01405	0	0.003233	-0.017287	Aug-18
Sep-18 NEW JERSEY RES	NJR	46.1	0.017379	0.2925	0.003233	0.014146	Sep-18
Oct-18 NEW JERSEY RES	NJR	45.1	-0.02169	0	0.00345	-0.025142	Oct-18
Nov-18 NEW JERSEY RES	NJR	48.53	0.076053	0	0.003517	0.072537	Nov-18
Dec-18 NEW JERSEY RES	NJR	45.67	-0.05291	0.2925	0.00335	-0.056255	Dec-18
Jan-19 NEW JERSEY RES	NJR	48.5	0.061966	0	0.003275	0.058691	Jan-19
Feb-19 NEW JERSEY RES	NJR	48.4	-0.00206	0	0.003158	-0.00522	Feb-19
Mar-19 NEW JERSEY RES	NJR	49.79	0.034762	0.2925	0.003158	0.031604	Mar-19
Apr-19 NEW JERSEY RES	NJR	50.08	0.005824	0	0.003075	0.002749	Apr-19
May-19 NEW JERSEY RES	NJR	47.45	-0.05252	0	0.003058	-0.055574	May-19
Jun-19 NEW JERSEY RES	NJR	49.77	0.055058	0.2925	0.003058	0.052	Jun-19
Jul-19 NEW JERSEY RES	NJR	49.87	0.002009	0	0.002742	-0.000732	Jul-19
Aug-19 NEW JERSEY RES	NJR	45.74	-0.08282	0	0.002742	-0.085557	Aug-19
Sep-19 NEW JERSEY RES	NJR	45.22	-0.00454	0.3125	0.002483	-0.00702	Sep-19
Oct-19 NEW JERSEY RES	NJR	43.6	-0.03582	0	0.002525	-0.03835	Oct-19
Nov-19 NEW JERSEY RES	NJR	42.54	-0.02431	0	0.002558	-0.02687	Nov-19
Dec-19 NEW JERSEY RES	NJR	44.57	0.055066	0.3125	0.002508	0.052557	Dec-19
Jan-20 NEW JERSEY RES	NJR	41.32	-0.07292	0	0.00235	-0.075269	Jan-20
Feb-20 NEW JERSEY RES	NJR	35.31	-0.14545	0	0.00245	-0.1479	Feb-20
Mar-20 NEW JERSEY RES	NJR	33.97	-0.0291	0.3125	0.002317	-0.031416	Mar-20
Apr-20 NEW JERSEY RES	NJR	33.78	-0.00559	0	0.002025	-0.007618	Apr-20
May-20 NEW JERSEY RES	NJR	35.12	0.039668	0	0.002075	0.037593	May-20
Jun-20 NEW JERSEY RES	NJR	32.65	-0.06143	0.3125	0.002008	-0.063441	Jun-20
Jul-20 NEW JERSEY RES	NJR	31.06	-0.0487	0	0.001692	-0.05039	Jul-20
Aug-20 NEW JERSEY RES	NJR	30.14	-0.02962	0	0.001875	-0.031495	Aug-20
Sep-20 NEW JERSEY RES	NJR	27.02	-0.09249	0.3325	0.001925	-0.09441	Sep-20
Oct-20 NEW JERSEY RES	NJR	29.18	0.079941	0	0.001958	0.077982	Oct-20
Nov-20 NEW JERSEY RES	NJR	33.03	0.13194	0	0.001917	0.130023	Nov-20
Dec-20 NEW JERSEY RES	NJR	35.55	0.086361	0.3325	0.001883	0.084478	Dec-20
Jan-21 NEW JERSEY RES	NJR	35.01	-0.01519	0	0.002042	-0.017232	Jan-21

Feb-21 NEW JERSEY RES	NJR	39.29	0.122251	0	0.00225	0.120001	Feb-21
Mar-21 NEW JERSEY RES	NJR	39.87	0.023225	0.3325	0.002533	0.020691	Mar-21

Unique Index Number	Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP	Trading Date
	Jan-26						0.0031		Jan-26
	Feb-26						0.0028		Feb-26
	Mar-26						0.0032		Mar-26
	Apr-26						0.0030		Apr-26
	May-26						0.0028		May-26
	Jun-26						0.0033		Jun-26
	Jul-26						0.0031		Jul-26
	Aug-26						0.0031		Aug-26
	Sep-26						0.0030		Sep-26
	Oct-26						0.0030		Oct-26
	Nov-26						0.0031		Nov-26
	Dec-26						0.0030		Dec-26
	Jan-27						0.0030		Jan-27
	Feb-27						0.0027		Feb-27
	Mar-27						0.0029		Mar-27
	Apr-27						0.0027		Apr-27
	May-27						0.0028		May-27
	Jun-27						0.0027		Jun-27
	Jul-27						0.0027		Jul-27
	Aug-27						0.0029		Aug-27
	Sep-27						0.0027		Sep-27
	Oct-27						0.0028		Oct-27
	Nov-27						0.0027		Nov-27
	Dec-27						0.0027		Dec-27
	Jan-28						0.0027		Jan-28
	Feb-28						0.0025		Feb-28
	Mar-28						0.0027		Mar-28
	Apr-28						0.0026		Apr-28
	May-28						0.0027		May-28
	Jun-28						0.0027		Jun-28
	Jul-28						0.0027		Jul-28
	Aug-28						0.0029		Aug-28
	Sep-28						0.0027		Sep-28

Oct-28	0.0030	Oct-28
Nov-28	0.0027	Nov-28
Dec-28	0.0029	Dec-28
Jan-29	0.0029	Jan-29
Feb-29	0.0027	Feb-29
Mar-29	0.0028	Mar-29
Apr-29	0.0034	Apr-29
May-29	0.0030	May-29
Jun-29	0.0029	Jun-29
Jul-29	0.0032	Jul-29
Aug-29	0.0030	Aug-29
Sep-29	0.0032	Sep-29
Oct-29	0.0031	Oct-29
Nov-29	0.0026	Nov-29
Dec-29	0.0031	Dec-29
Jan-30	0.0029	Jan-30
Feb-30	0.0026	Feb-30
Mar-30	0.0029	Mar-30
Apr-30	0.0027	Apr-30
May-30	0.0027	May-30
Jun-30	0.0029	Jun-30
Jul-30	0.0028	Jul-30
Aug-30	0.0026	Aug-30
Sep-30	0.0029	Sep-30
Oct-30	0.0027	Oct-30
Nov-30	0.0026	Nov-30
Dec-30	0.0028	Dec-30
Jan-31	0.0028	Jan-31
Feb-31	0.0026	Feb-31
Mar-31	0.0029	Mar-31
Apr-31	0.0027	Apr-31
May-31	0.0026	May-31
Jun-31	0.0028	Jun-31
Jul-31	0.0027	Jul-31
Aug-31	0.0027	Aug-31
Sep-31	0.0027	Sep-31

Oct-31	0.0029	Oct-31
Nov-31	0.0031	Nov-31
Dec-31	0.0032	Dec-31
Jan-32	0.0032	Jan-32
Feb-32	0.0032	Feb-32
Mar-32	0.0031	Mar-32
Apr-32	0.0030	Apr-32
May-32	0.0028	May-32
Jun-32	0.0028	Jun-32
Jul-32	0.0028	Jul-32
Aug-32	0.0028	Aug-32
Sep-32	0.0026	Sep-32
Oct-32	0.0027	Oct-32
Nov-32	0.0026	Nov-32
Dec-32	0.0027	Dec-32
Jan-33	0.0027	Jan-33
Feb-33	0.0023	Feb-33
Mar-33	0.0027	Mar-33
Apr-33	0.0025	Apr-33
May-33	0.0028	May-33
Jun-33	0.0025	Jun-33
Jul-33	0.0026	Jul-33
Aug-33	0.0026	Aug-33
Sep-33	0.0025	Sep-33
Oct-33	0.0026	Oct-33
Nov-33	0.0025	Nov-33
Dec-33	0.0028	Dec-33
Jan-34	0.0029	Jan-34
Feb-34	0.0024	Feb-34
Mar-34	0.0027	Mar-34
Apr-34	0.0025	Apr-34
May-34	0.0025	May-34
Jun-34	0.0024	Jun-34
Jul-34	0.0024	Jul-34
Aug-34	0.0024	Aug-34
Sep-34	0.0023	Sep-34

Oct-34	0.0027	Oct-34
Nov-34	0.0025	Nov-34
Dec-34	0.0025	Dec-34
Jan-35	0.0025	Jan-35
Feb-35	0.0021	Feb-35
Mar-35	0.0022	Mar-35
Apr-35	0.0023	Apr-35
May-35	0.0023	May-35
Jun-35	0.0022	Jun-35
Jul-35	0.0024	Jul-35
Aug-35	0.0023	Aug-35
Sep-35	0.0023	Sep-35
Oct-35	0.0023	Oct-35
Nov-35	0.0024	Nov-35
Dec-35	0.0024	Dec-35
Jan-36	0.0024	Jan-36
Feb-36	0.0023	Feb-36
Mar-36	0.0024	Mar-36
Apr-36	0.0022	Apr-36
May-36	0.0022	May-36
Jun-36	0.0024	Jun-36
Jul-36	0.0023	Jul-36
Aug-36	0.0023	Aug-36
Sep-36	0.0021	Sep-36
Oct-36	0.0023	Oct-36
Nov-36	0.0022	Nov-36
Dec-36	0.0022	Dec-36
Jan-37	0.0021	Jan-37
Feb-37	0.0020	Feb-37
Mar-37	0.0022	Mar-37
Apr-37	0.0023	Apr-37
May-37	0.0022	May-37
Jun-37	0.0025	Jun-37
Jul-37	0.0024	Jul-37
Aug-37	0.0023	Aug-37
Sep-37	0.0023	Sep-37

Oct-37	0.0023	Oct-37
Nov-37	0.0024	Nov-37
Dec-37	0.0023	Dec-37
Jan-38	0.0023	Jan-38
Feb-38	0.0021	Feb-38
Mar-38	0.0023	Mar-38
Apr-38	0.0022	Apr-38
May-38	0.0022	May-38
Jun-38	0.0021	Jun-38
Jul-38	0.0021	Jul-38
Aug-38	0.0022	Aug-38
Sep-38	0.0021	Sep-38
Oct-38	0.0022	Oct-38
Nov-38	0.0021	Nov-38
Dec-38	0.0022	Dec-38
Jan-39	0.0021	Jan-39
Feb-39	0.0019	Feb-39
Mar-39	0.0021	Mar-39
Apr-39	0.0019	Apr-39
May-39	0.0020	May-39
Jun-39	0.0018	Jun-39
Jul-39	0.0019	Jul-39
Aug-39	0.0018	Aug-39
Sep-39	0.0019	Sep-39
Oct-39	0.0023	Oct-39
Nov-39	0.0020	Nov-39
Dec-39	0.0019	Dec-39
Jan-40	0.0020	Jan-40
Feb-40	0.0018	Feb-40
Mar-40	0.0019	Mar-40
Apr-40	0.0018	Apr-40
May-40	0.0019	May-40
Jun-40	0.0019	Jun-40
Jul-40	0.0020	Jul-40
Aug-40	0.0019	Aug-40
Sep-40	0.0018	Sep-40

Oct-40	0.0018	Oct-40
Nov-40	0.0018	Nov-40
Dec-40	0.0017	Dec-40
Jan-41	0.0016	Jan-41
Feb-41	0.0016	Feb-41
Mar-41	0.0018	Mar-41
Apr-41	0.0017	Apr-41
May-41	0.0017	May-41
Jun-41	0.0016	Jun-41
Jul-41	0.0016	Jul-41
Aug-41	0.0016	Aug-41
Sep-41	0.0016	Sep-41
Oct-41	0.0016	Oct-41
Nov-41	0.0014	Nov-41
Dec-41	0.0016	Dec-41
Jan-42	0.0021	Jan-42
Feb-42	0.0019	Feb-42
Mar-42	0.0021	Mar-42
Apr-42	0.0020	Apr-42
May-42	0.0019	May-42
Jun-42	0.0021	Jun-42
Jul-42	0.0021	Jul-42
Aug-42	0.0021	Aug-42
Sep-42	0.0020	Sep-42
Oct-42	0.0021	Oct-42
Nov-42	0.0020	Nov-42
Dec-42	0.0021	Dec-42
Jan-43	0.0020	Jan-43
Feb-43	0.0019	Feb-43
Mar-43	0.0021	Mar-43
Apr-43	0.0020	Apr-43
May-43	0.0019	May-43
Jun-43	0.0021	Jun-43
Jul-43	0.0021	Jul-43
Aug-43	0.0021	Aug-43
Sep-43	0.0020	Sep-43

Oct-43	0.0020	Oct-43
Nov-43	0.0021	Nov-43
Dec-43	0.0021	Dec-43
Jan-44	0.0021	Jan-44
Feb-44	0.0020	Feb-44
Mar-44	0.0021	Mar-44
Apr-44	0.0020	Apr-44
May-44	0.0022	May-44
Jun-44	0.0020	Jun-44
Jul-44	0.0021	Jul-44
Aug-44	0.0021	Aug-44
Sep-44	0.0020	Sep-44
Oct-44	0.0021	Oct-44
Nov-44	0.0020	Nov-44
Dec-44	0.0020	Dec-44
Jan-45	0.0021	Jan-45
Feb-45	0.0018	Feb-45
Mar-45	0.0020	Mar-45
Apr-45	0.0019	Apr-45
May-45	0.0019	May-45
Jun-45	0.0019	Jun-45
Jul-45	0.0018	Jul-45
Aug-45	0.0019	Aug-45
Sep-45	0.0018	Sep-45
Oct-45	0.0019	Oct-45
Nov-45	0.0018	Nov-45
Dec-45	0.0018	Dec-45
Jan-46	0.0017	Jan-46
Feb-46	0.0015	Feb-46
Mar-46	0.0016	Mar-46
Apr-46	0.0017	Apr-46
May-46	0.0018	May-46
Jun-46	0.0016	Jun-46
Jul-46	0.0019	Jul-46
Aug-46	0.0017	Aug-46
Sep-46	0.0018	Sep-46

Oct-46	0.0019	Oct-46
Nov-46	0.0018	Nov-46
Dec-46	0.0019	Dec-46
Jan-47	0.0018	Jan-47
Feb-47	0.0016	Feb-47
Mar-47	0.0018	Mar-47
Apr-47	0.0017	Apr-47
May-47	0.0017	May-47
Jun-47	0.0019	Jun-47
Jul-47	0.0018	Jul-47
Aug-47	0.0017	Aug-47
Sep-47	0.0018	Sep-47
Oct-47	0.0018	Oct-47
Nov-47	0.0017	Nov-47
Dec-47	0.0021	Dec-47
Jan-48	0.0020	Jan-48
Feb-48	0.0019	Feb-48
Mar-48	0.0022	Mar-48
Apr-48	0.0020	Apr-48
May-48	0.0018	May-48
Jun-48	0.0021	Jun-48
Jul-48	0.0019	Jul-48
Aug-48	0.0021	Aug-48
Sep-48	0.0020	Sep-48
Oct-48	0.0019	Oct-48
Nov-48	0.0021	Nov-48
Dec-48	0.0020	Dec-48
Jan-49	0.0020	Jan-49
Feb-49	0.0018	Feb-49
Mar-49	0.0019	Mar-49
Apr-49	0.0018	Apr-49
May-49	0.0020	May-49
Jun-49	0.0019	Jun-49
Jul-49	0.0017	Jul-49
Aug-49	0.0019	Aug-49
Sep-49	0.0017	Sep-49

Oct-49	0.0018	Oct-49
Nov-49	0.0017	Nov-49
Dec-49	0.0017	Dec-49
Jan-50	0.0018	Jan-50
Feb-50	0.0016	Feb-50
Mar-50	0.0018	Mar-50
Apr-50	0.0016	Apr-50
May-50	0.0019	May-50
Jun-50	0.0017	Jun-50
Jul-50	0.0018	Jul-50
Aug-50	0.0018	Aug-50
Sep-50	0.0017	Sep-50
Oct-50	0.0019	Oct-50
Nov-50	0.0018	Nov-50
Dec-50	0.0018	Dec-50
Jan-51	0.0020	Jan-51
Feb-51	0.0017	Feb-51
Mar-51	0.0019	Mar-51
Apr-51	0.0020	Apr-51
May-51	0.0021	May-51
Jun-51	0.0020	Jun-51
Jul-51	0.0023	Jul-51
Aug-51	0.0021	Aug-51
Sep-51	0.0019	Sep-51
Oct-51	0.0023	Oct-51
Nov-51	0.0021	Nov-51
Dec-51	0.0022	Dec-51
Jan-52	0.0023	Jan-52
Feb-52	0.0021	Feb-52
Mar-52	0.0023	Mar-52
Apr-52	0.0022	Apr-52
May-52	0.0020	May-52
Jun-52	0.0022	Jun-52
Jul-52	0.0022	Jul-52
Aug-52	0.0021	Aug-52
Sep-52	0.0023	Sep-52

Oct-52	0.0023	Oct-52
Nov-52	0.0021	Nov-52
Dec-52	0.0024	Dec-52
Jan-53	0.0023	Jan-53
Feb-53	0.0021	Feb-53
Mar-53	0.0025	Mar-53
Apr-53	0.0024	Apr-53
May-53	0.0024	May-53
Jun-53	0.0027	Jun-53
Jul-53	0.0025	Jul-53
Aug-53	0.0025	Aug-53
Sep-53	0.0025	Sep-53
Oct-53	0.0023	Oct-53
Nov-53	0.0024	Nov-53
Dec-53	0.0024	Dec-53
Jan-54	0.0023	Jan-54
Feb-54	0.0022	Feb-54
Mar-54	0.0025	Mar-54
Apr-54	0.0022	Apr-54
May-54	0.0020	May-54
Jun-54	0.0025	Jun-54
Jul-54	0.0022	Jul-54
Aug-54	0.0023	Aug-54
Sep-54	0.0022	Sep-54
Oct-54	0.0021	Oct-54
Nov-54	0.0023	Nov-54
Dec-54	0.0023	Dec-54
Jan-55	0.0022	Jan-55
Feb-55	0.0022	Feb-55
Mar-55	0.0024	Mar-55
Apr-55	0.0022	Apr-55
May-55	0.0025	May-55
Jun-55	0.0023	Jun-55
Jul-55	0.0023	Jul-55
Aug-55	0.0027	Aug-55
Sep-55	0.0024	Sep-55

Oct-55	0.0025	Oct-55
Nov-55	0.0024	Nov-55
Dec-55	0.0024	Dec-55
Jan-56	0.0025	Jan-56
Feb-56	0.0023	Feb-56
Mar-56	0.0023	Mar-56
Apr-56	0.0026	Apr-56
May-56	0.0026	May-56
Jun-56	0.0023	Jun-56
Jul-56	0.0026	Jul-56
Aug-56	0.0026	Aug-56
Sep-56	0.0025	Sep-56
Oct-56	0.0029	Oct-56
Nov-56	0.0027	Nov-56
Dec-56	0.0028	Dec-56
Jan-57	0.0029	Jan-57
Feb-57	0.0025	Feb-57
Mar-57	0.0026	Mar-57
Apr-57	0.0029	Apr-57
May-57	0.0029	May-57
Jun-57	0.0025	Jun-57
Jul-57	0.0033	Jul-57
Aug-57	0.0030	Aug-57
Sep-57	0.0031	Sep-57
Oct-57	0.0031	Oct-57
Nov-57	0.0029	Nov-57
Dec-57	0.0029	Dec-57
Jan-58	0.0027	Jan-58
Feb-58	0.0025	Feb-58
Mar-58	0.0027	Mar-58
Apr-58	0.0026	Apr-58
May-58	0.0024	May-58
Jun-58	0.0027	Jun-58
Jul-58	0.0027	Jul-58
Aug-58	0.0027	Aug-58
Sep-58	0.0032	Sep-58

Oct-58	0.0032	Oct-58
Nov-58	0.0028	Nov-58
Dec-58	0.0033	Dec-58
Jan-59	0.0031	Jan-59
Feb-59	0.0031	Feb-59
Mar-59	0.0035	Mar-59
Apr-59	0.0033	Apr-59
May-59	0.0033	May-59
Jun-59	0.0036	Jun-59
Jul-59	0.0035	Jul-59
Aug-59	0.0035	Aug-59
Sep-59	0.0034	Sep-59
Oct-59	0.0035	Oct-59
Nov-59	0.0035	Nov-59
Dec-59	0.0036	Dec-59
Jan-60	0.0035	Jan-60
Feb-60	0.0037	Feb-60
Mar-60	0.0036	Mar-60
Apr-60	0.0032	Apr-60
May-60	0.0037	May-60
Jun-60	0.0034	Jun-60
Jul-60	0.0032	Jul-60
Aug-60	0.0034	Aug-60
Sep-60	0.0032	Sep-60
Oct-60	0.0033	Oct-60
Nov-60	0.0032	Nov-60
Dec-60	0.0033	Dec-60
Jan-61	0.0033	Jan-61
Feb-61	0.0030	Feb-61
Mar-61	0.0031	Mar-61
Apr-61	0.0031	Apr-61
May-61	0.0034	May-61
Jun-61	0.0032	Jun-61
Jul-61	0.0033	Jul-61
Aug-61	0.0033	Aug-61
Sep-61	0.0032	Sep-61

Oct-61	0.0034	Oct-61
Nov-61	0.0032	Nov-61
Dec-61	0.0031	Dec-61
Jan-62	0.0037	Jan-62
Feb-62	0.0032	Feb-62
Mar-62	0.0033	Mar-62
Apr-62	0.0033	Apr-62
May-62	0.0032	May-62
Jun-62	0.0030	Jun-62
Jul-62	0.0034	Jul-62
Aug-62	0.0034	Aug-62
Sep-62	0.0030	Sep-62
Oct-62	0.0035	Oct-62
Nov-62	0.0031	Nov-62
Dec-62	0.0032	Dec-62
Jan-63	0.0032	Jan-63
Feb-63	0.0029	Feb-63
Mar-63	0.0031	Mar-63
Apr-63	0.0034	Apr-63
May-63	0.0033	May-63
Jun-63	0.0030	Jun-63
Jul-63	0.0036	Jul-63
Aug-63	0.0033	Aug-63
Sep-63	0.0034	Sep-63
Oct-63	0.0034	Oct-63
Nov-63	0.0032	Nov-63
Dec-63	0.0036	Dec-63
Jan-64	0.0035	Jan-64
Feb-64	0.0032	Feb-64
Mar-64	0.0037	Mar-64
Apr-64	0.0035	Apr-64
May-64	0.0032	May-64
Jun-64	0.0038	Jun-64
Jul-64	0.0035	Jul-64
Aug-64	0.0035	Aug-64
Sep-64	0.0034	Sep-64

Oct-64	0.0034	Oct-64
Nov-64	0.0035	Nov-64
Dec-64	0.0035	Dec-64
Jan-65	0.0033	Jan-65
Feb-65	0.0032	Feb-65
Mar-65	0.0038	Mar-65
Apr-65	0.0033	Apr-65
May-65	0.0033	May-65
Jun-65	0.0038	Jun-65
Jul-65	0.0034	Jul-65
Aug-65	0.0037	Aug-65
Sep-65	0.0035	Sep-65
Oct-65	0.0034	Oct-65
Nov-65	0.0037	Nov-65
Dec-65	0.0037	Dec-65
Jan-66	0.0038	Jan-66
Feb-66	0.0034	Feb-66
Mar-66	0.0040	Mar-66
Apr-66	0.0036	Apr-66
May-66	0.0041	May-66
Jun-66	0.0039	Jun-66
Jul-66	0.0038	Jul-66
Aug-66	0.0043	Aug-66
Sep-66	0.0041	Sep-66
Oct-66	0.0040	Oct-66
Nov-66	0.0038	Nov-66
Dec-66	0.0039	Dec-66
Jan-67	0.0040	Jan-67
Feb-67	0.0034	Feb-67
Mar-67	0.0039	Mar-67
Apr-67	0.0035	Apr-67
May-67	0.0043	May-67
Jun-67	0.0039	Jun-67
Jul-67	0.0043	Jul-67
Aug-67	0.0042	Aug-67
Sep-67	0.0040	Sep-67

Oct-67	0.0045	Oct-67
Nov-67	0.0045	Nov-67
Dec-67	0.0044	Dec-67
Jan-68	0.0050	Jan-68
Feb-68	0.0042	Feb-68
Mar-68	0.0043	Mar-68
Apr-68	0.0049	Apr-68
May-68	0.0046	May-68
Jun-68	0.0042	Jun-68
Jul-68	0.0048	Jul-68
Aug-68	0.0042	Aug-68
Sep-68	0.0044	Sep-68
Oct-68	0.0045	Oct-68
Nov-68	0.0043	Nov-68
Dec-68	0.0049	Dec-68
Jan-69	0.0050	Jan-69
Feb-69	0.0046	Feb-69
Mar-69	0.0047	Mar-69
Apr-69	0.0055	Apr-69
May-69	0.0047	May-69
Jun-69	0.0055	Jun-69
Jul-69	0.0052	Jul-69
Aug-69	0.0048	Aug-69
Sep-69	0.0055	Sep-69
Oct-69	0.0057	Oct-69
Nov-69	0.0049	Nov-69
Dec-69	0.0060	Dec-69
Jan-70	0.0056	Jan-70
Feb-70	0.0052	Feb-70
Mar-70	0.0056	Mar-70
Apr-70	0.0054	Apr-70
May-70	0.0055	May-70
Jun-70	0.0064	Jun-70
Jul-70	0.0059	Jul-70
Aug-70	0.0057	Aug-70
Sep-70	0.0056	Sep-70

Oct-70						0.0055		Oct-70
Nov-70						0.0058		Nov-70
Dec-70						0.0053		Dec-70
Jan-71						0.0051		Jan-71
Feb-71						0.0046		Feb-71
Mar-71						0.0056		Mar-71
Apr-71						0.0048		Apr-71
May-71						0.0047		May-71
Jun-71						0.0056		Jun-71
Jul-71						0.0052		Jul-71
Aug-71						0.0055		Aug-71
Sep-71						0.0049		Sep-71
Oct-71						0.0047		Oct-71
Nov-71						0.0051		Nov-71
Dec-71						0.0050		Dec-71
Jan-72						0.0050		Jan-72
Feb-72						0.0047		Feb-72
Mar-72						0.0049		Mar-72
Apr-72						0.0048		Apr-72
May-72						0.0055		May-72
Jun-72						0.0049		Jun-72
Jul-72						0.0051		Jul-72
Aug-72						0.0049		Aug-72
Sep-72						0.0047		Sep-72
Oct-72						0.0052		Oct-72
Nov-72						0.0048		Nov-72
70	Dec-72	NORTHWEST NATURAL GAS CO NWNG	-11.25	-66	0	0.0045		Dec-72
70	Jan-73	NORTHWEST NATURAL GAS CO NWNG	-10.375	-0.06311	0.165	0.0054	-0.0685	Jan-73
70	Feb-73	NORTHWEST NATURAL GAS CO NWNG	-10	-0.03615	0	0.0051	-0.0412	Feb-73
70	Mar-73	NORTHWEST NATURAL GAS CO NWNG	-9.875	-0.0125	0	0.0056	-0.0181	Mar-73
70	Apr-73	NORTHWEST NATURAL GAS CO NWNG	-9.75	0.004051	0.165	0.0057	-0.0016	Apr-73
70	May-73	NORTHWEST NATURAL GAS CO NWNG	-9.5	-0.02564	0	0.0058	-0.0314	May-73
70	Jun-73	NORTHWEST NATURAL GAS CO NWNG	-9.875	0.039474	0	0.0055	0.0340	Jun-73
70	Jul-73	NORTHWEST NATURAL GAS CO NWNG	-10	0.031899	0.19	0.0061	0.0258	Jul-73
70	Aug-73	NORTHWEST NATURAL GAS CO NWNG	-9.625	-0.0375	0	0.0062	-0.0437	Aug-73
70	Sep-73	NORTHWEST NATURAL GAS CO NWNG	-9.5	-0.01299	0	0.0055	-0.0185	Sep-73

70	Oct-73	NORTHWEST NATURAL GAS CO NWNG	-9.25	-0.00632	0.19	0.0063	-0.0126	Oct-73
70	Nov-73	NORTHWEST NATURAL GAS CO NWNG	-8.5	-0.08108	0	0.0056	-0.0867	Nov-73
70	Dec-73	NORTHWEST NATURAL GAS CO NWNG	-8.125	-0.04412	0	0.0060	-0.0501	Dec-73
70	Jan-74	NORTHWEST NATURAL GAS CO NWNG	-9.25	0.161846	0.19	0.0061	0.1557	Jan-74
70	Feb-74	NORTHWEST NATURAL GAS CO NWNG	-9.25	0	0	0.0055	-0.0055	Feb-74
70	Mar-74	NORTHWEST NATURAL GAS CO NWNG	-8.75	-0.05405	0	0.0058	-0.0599	Mar-74
70	Apr-74	NORTHWEST NATURAL GAS CO NWNG	-8.125	-0.04971	0.19	0.0068	-0.0565	Apr-74
70	May-74	NORTHWEST NATURAL GAS CO NWNG	-7.75	-0.04615	0	0.0068	-0.0530	May-74
70	Jun-74	NORTHWEST NATURAL GAS CO NWNG	-7.625	-0.01613	0	0.0061	-0.0222	Jun-74
70	Jul-74	NORTHWEST NATURAL GAS CO NWNG	-7.5	0.008525	0.19	0.0072	0.0013	Jul-74
70	Aug-74	NORTHWEST NATURAL GAS CO NWNG	-6.5	-0.13333	0	0.0065	-0.1398	Aug-74
70	Sep-74	NORTHWEST NATURAL GAS CO NWNG	-5.875	-0.09615	0	0.0071	-0.1033	Sep-74
70	Oct-74	NORTHWEST NATURAL GAS CO NWNG	-6.5	0.138723	0.19	0.0070	0.1317	Oct-74
70	Nov-74	NORTHWEST NATURAL GAS CO NWNG	-6.875	0.057692	0	0.0062	0.0515	Nov-74
70	Dec-74	NORTHWEST NATURAL GAS CO NWNG	-6.25	-0.09091	0	0.0067	-0.0976	Dec-74
70	Jan-75	NORTHWEST NATURAL GAS CO NWNG	-7.8125	0.2804	0.19	0.0068	0.2736	Jan-75
70	Feb-75	NORTHWEST NATURAL GAS CO NWNG	-7.8125	0	0	0.0060	-0.0060	Feb-75
70	Mar-75	NORTHWEST NATURAL GAS CO NWNG	-6.9375	-0.112	0	0.0066	-0.1186	Mar-75
70	Apr-75	NORTHWEST NATURAL GAS CO NWNG	-7.1875	0.063423	0.19	0.0067	0.0567	Apr-75
70	May-75	NORTHWEST NATURAL GAS CO NWNG	-6.9375	-0.03478	0	0.0067	-0.0415	May-75
70	Jun-75	NORTHWEST NATURAL GAS CO NWNG	-8.5625	0.234234	0	0.0070	0.2272	Jun-75
70	Jul-75	NORTHWEST NATURAL GAS CO NWNG	-7.4375	-0.1092	0.19	0.0068	-0.1160	Jul-75
70	Aug-75	NORTHWEST NATURAL GAS CO NWNG	-7.5625	0.016807	0	0.0065	0.0103	Aug-75
70	Sep-75	NORTHWEST NATURAL GAS CO NWNG	-7.3125	-0.03306	0	0.0073	-0.0404	Sep-75
70	Oct-75	NORTHWEST NATURAL GAS CO NWNG	-7.9375	0.112821	0.2	0.0072	0.1056	Oct-75
70	Nov-75	NORTHWEST NATURAL GAS CO NWNG	-7.6875	-0.0315	0	0.0061	-0.0376	Nov-75
70	Dec-75	NORTHWEST NATURAL GAS CO NWNG	-7.8125	0.01626	0	0.0074	0.0089	Dec-75
70	Jan-76	NORTHWEST NATURAL GAS CO NWNG	-8.9375	0.1696	0.2	0.0065	0.1631	Jan-76
70	Feb-76	NORTHWEST NATURAL GAS CO NWNG	-8.6875	-0.02797	0	0.0060	-0.0340	Feb-76
70	Mar-76	NORTHWEST NATURAL GAS CO NWNG	-8.5625	-0.01439	0	0.0071	-0.0215	Mar-76
70	Apr-76	NORTHWEST NATURAL GAS CO NWNG	-8.6875	0.037956	0.2	0.0064	0.0316	Apr-76
70	May-76	NORTHWEST NATURAL GAS CO NWNG	-8.3125	-0.04317	0	0.0059	-0.0491	May-76
70	Jun-76	NORTHWEST NATURAL GAS CO NWNG	-8.5625	0.030075	0	0.0073	0.0228	Jun-76
70	Jul-76	NORTHWEST NATURAL GAS CO NWNG	-9.0625	0.081752	0.2	0.0065	0.0753	Jul-76
70	Aug-76	NORTHWEST NATURAL GAS CO NWNG	-9.0625	0	0	0.0069	-0.0069	Aug-76
70	Sep-76	NORTHWEST NATURAL GAS CO NWNG	-9.5625	0.055172	0	0.0064	0.0488	Sep-76

70	Oct-76	NORTHWEST NATURAL GAS CO NWNG	-9.3125	-0.00523	0.2	0.0061	-0.0113	Oct-76
70	Nov-76	NORTHWEST NATURAL GAS CO NWNG	-8.9375	-0.04027	0	0.0066	-0.0469	Nov-76
70	Dec-76	NORTHWEST NATURAL GAS CO NWNG	-10.0625	0.125874	0	0.0063	0.1196	Dec-76
70	Jan-77	NORTHWEST NATURAL GAS CO NWNG	-10.1875	0.032298	0.2	0.0059	0.0264	Jan-77
70	Feb-77	NORTHWEST NATURAL GAS CO NWNG	-9.8125	-0.03681	0	0.0057	-0.0425	Feb-77
70	Mar-77	NORTHWEST NATURAL GAS CO NWNG	-9.5625	-0.02548	0	0.0065	-0.0320	Mar-77
70	Apr-77	NORTHWEST NATURAL GAS CO NWNG	-9.4375	0.007843	0.2	0.0061	0.0017	Apr-77
70	May-77	NORTHWEST NATURAL GAS CO NWNG	-8.9375	-0.05298	0	0.0067	-0.0597	May-77
70	Jun-77	NORTHWEST NATURAL GAS CO NWNG	-10.0625	0.125874	0	0.0062	0.1197	Jun-77
70	Jul-77	NORTHWEST NATURAL GAS CO NWNG	-10.0625	0.019876	0.2	0.0059	0.0140	Jul-77
70	Aug-77	NORTHWEST NATURAL GAS CO NWNG	-9.5625	-0.04969	0	0.0067	-0.0564	Aug-77
70	Sep-77	NORTHWEST NATURAL GAS CO NWNG	-10.1875	0.065359	0	0.0061	0.0593	Sep-77
70	Oct-77	NORTHWEST NATURAL GAS CO NWNG	-10.0625	0.009325	0.22	0.0063	0.0030	Oct-77
70	Nov-77	NORTHWEST NATURAL GAS CO NWNG	-10.5625	0.049689	0	0.0063	0.0434	Nov-77
70	Dec-77	NORTHWEST NATURAL GAS CO NWNG	-10.3125	-0.02367	0	0.0062	-0.0299	Dec-77
70	Jan-78	NORTHWEST NATURAL GAS CO NWNG	-10.5625	0.045576	0.22	0.0069	0.0387	Jan-78
70	Feb-78	NORTHWEST NATURAL GAS CO NWNG	-10.4375	-0.01183	0	0.0060	-0.0178	Feb-78
70	Mar-78	NORTHWEST NATURAL GAS CO NWNG	-10.0625	-0.03593	0	0.0069	-0.0428	Mar-78
70	Apr-78	NORTHWEST NATURAL GAS CO NWNG	-11.0625	0.121242	0.22	0.0063	0.1149	Apr-78
70	May-78	NORTHWEST NATURAL GAS CO NWNG	-10.5625	-0.0452	0	0.0075	-0.0527	May-78
70	Jun-78	NORTHWEST NATURAL GAS CO NWNG	-10.3125	-0.02367	0	0.0069	-0.0306	Jun-78
70	Jul-78	NORTHWEST NATURAL GAS CO NWNG	-10.6875	0.059636	0.24	0.0073	0.0523	Jul-78
70	Aug-78	NORTHWEST NATURAL GAS CO NWNG	-11.0625	0.035088	0	0.0070	0.0281	Aug-78
70	Sep-78	NORTHWEST NATURAL GAS CO NWNG	-10.3125	-0.0678	0	0.0065	-0.0743	Sep-78
70	Oct-78	NORTHWEST NATURAL GAS CO NWNG	-9.9375	-0.01309	0.24	0.0073	-0.0204	Oct-78
70	Nov-78	NORTHWEST NATURAL GAS CO NWNG	-10.5625	0.062893	0	0.0071	0.0558	Nov-78
70	Dec-78	NORTHWEST NATURAL GAS CO NWNG	-10.6875	0.011834	0	0.0068	0.0050	Dec-78
70	Jan-79	NORTHWEST NATURAL GAS CO NWNG	-10.4375	-0.00094	0.24	0.0079	-0.0088	Jan-79
70	Feb-79	NORTHWEST NATURAL GAS CO NWNG	-10.5625	0.011976	0	0.0065	0.0055	Feb-79
70	Mar-79	NORTHWEST NATURAL GAS CO NWNG	-10.8125	0.023669	0	0.0074	0.0163	Mar-79
70	Apr-79	NORTHWEST NATURAL GAS CO NWNG	-11.6875	0.104971	0.26	0.0076	0.0974	Apr-79
70	May-79	NORTHWEST NATURAL GAS CO NWNG	-12.1875	0.042781	0	0.0077	0.0351	May-79
70	Jun-79	NORTHWEST NATURAL GAS CO NWNG	-12.4375	0.020513	0	0.0071	0.0134	Jun-79
70	Jul-79	NORTHWEST NATURAL GAS CO NWNG	-13.8125	0.131457	0.26	0.0076	0.1239	Jul-79
70	Aug-79	NORTHWEST NATURAL GAS CO NWNG	-16.5625	0.199095	0	0.0073	0.1918	Aug-79
70	Sep-79	NORTHWEST NATURAL GAS CO NWNG	-15.4375	-0.06793	0	0.0068	-0.0747	Sep-79

70	Oct-79	NORTHWEST NATURAL GAS CO NWNG	-13.6875	-0.09652	0.26	0.0082	-0.1047	Oct-79
70	Nov-79	NORTHWEST NATURAL GAS CO NWNG	-16.0625	0.173516	0	0.0083	0.1652	Nov-79
70	Dec-79	NORTHWEST NATURAL GAS CO NWNG	-15.9375	-0.00778	0	0.0083	-0.0161	Dec-79
70	Jan-80	NORTHWEST NATURAL GAS CO NWNG	-16.0625	0.024157	0.26	0.0083	0.0159	Jan-80
70	Feb-80	NORTHWEST NATURAL GAS CO NWNG	-16.0625	0	0	0.0084	-0.0084	Feb-80
70	Mar-80	NORTHWEST NATURAL GAS CO NWNG	-12.3125	-0.23346	0	0.0099	-0.2434	Mar-80
70	Apr-80	NORTHWEST NATURAL GAS CO NWNG	-13.6875	0.134416	0.28	0.0100	0.1244	Apr-80
70	May-80	NORTHWEST NATURAL GAS CO NWNG	-13.5625	-0.00913	0	0.0087	-0.0178	May-80
70	Jun-80	NORTHWEST NATURAL GAS CO NWNG	0	0	0	0.0086	-0.0086	Jun-80
70	Jul-80	NORTHWEST NATURAL GAS CO NWNG	-13.9375	0.048295	0.28	0.0084	0.0399	Jul-80
70	Aug-80	NORTHWEST NATURAL GAS CO NWNG	-12.75	-0.0852	0	0.0081	-0.0933	Aug-80
70	Sep-80	NORTHWEST NATURAL GAS CO NWNG	-12.75	0	0	0.0097	-0.0097	Sep-80
70	Oct-80	NORTHWEST NATURAL GAS CO NWNG	-12.1875	-0.02216	0.28	0.0097	-0.0319	Oct-80
70	Nov-80	NORTHWEST NATURAL GAS CO NWNG	-14	0.148718	0	0.0091	0.1396	Nov-80
70	Dec-80	NORTHWEST NATURAL GAS CO NWNG	-12.25	-0.125	0	0.0108	-0.1358	Dec-80
70	Jan-81	NORTHWEST NATURAL GAS CO NWNG	-11.6875	-0.02306	0.28	0.0094	-0.0325	Jan-81
70	Feb-81	NORTHWEST NATURAL GAS CO NWNG	-10.875	-0.06952	0	0.0088	-0.0783	Feb-81
70	Mar-81	NORTHWEST NATURAL GAS CO NWNG	-11.375	0.045977	0	0.0111	0.0349	Mar-81
70	Apr-81	NORTHWEST NATURAL GAS CO NWNG	-10.625	-0.0378	0.32	0.0101	-0.0479	Apr-81
70	May-81	NORTHWEST NATURAL GAS CO NWNG	-11	0.035294	0	0.0104	0.0249	May-81
70	Jun-81	NORTHWEST NATURAL GAS CO NWNG	-11.25	0.022727	0	0.0109	0.0118	Jun-81
70	Jul-81	NORTHWEST NATURAL GAS CO NWNG	-11.5	0.050667	0.32	0.0109	0.0398	Jul-81
70	Aug-81	NORTHWEST NATURAL GAS CO NWNG	-11.3125	-0.0163	0	0.0110	-0.0273	Aug-81
70	Sep-81	NORTHWEST NATURAL GAS CO NWNG	-11.375	0.005525	0	0.0114	-0.0059	Sep-81
70	Oct-81	NORTHWEST NATURAL GAS CO NWNG	-11.25	0.017143	0.32	0.0117	0.0054	Oct-81
70	Nov-81	NORTHWEST NATURAL GAS CO NWNG	-12.25	0.088889	0	0.0113	0.0776	Nov-81
70	Dec-81	NORTHWEST NATURAL GAS CO NWNG	-11.5625	-0.05612	0	0.0100	-0.0661	Dec-81
70	Jan-82	NORTHWEST NATURAL GAS CO NWNG	-11.625	0.033081	0.32	0.0108	0.0223	Jan-82
70	Feb-82	NORTHWEST NATURAL GAS CO NWNG	-11.0625	-0.04839	0	0.0103	-0.0587	Feb-82
70	Mar-82	NORTHWEST NATURAL GAS CO NWNG	-11.4375	0.033898	0	0.0124	0.0215	Mar-82
70	Apr-82	NORTHWEST NATURAL GAS CO NWNG	-11.125	0.000656	0.32	0.0112	-0.0105	Apr-82
70	May-82	NORTHWEST NATURAL GAS CO NWNG	-11.5625	0.039326	0	0.0101	0.0292	May-82
70	Jun-82	NORTHWEST NATURAL GAS CO NWNG	-10.8125	-0.06487	0	0.0120	-0.0769	Jun-82
70	Jul-82	NORTHWEST NATURAL GAS CO NWNG	-10.875	0.035376	0.32	0.0114	0.0240	Jul-82
70	Aug-82	NORTHWEST NATURAL GAS CO NWNG	-11.4375	0.051724	0	0.0112	0.0405	Aug-82
70	Sep-82	NORTHWEST NATURAL GAS CO NWNG	-11.0625	-0.03279	0	0.0100	-0.0428	Sep-82

70	Oct-82	NORTHWEST NATURAL GAS CO NWNG	-11.75	0.091073	0.32	0.0091	0.0820	Oct-82
70	Nov-82	NORTHWEST NATURAL GAS CO NWNG	-11.6875	-0.00532	0	0.0094	-0.0147	Nov-82
70	Dec-82	NORTHWEST NATURAL GAS CO NWNG	-11.5625	-0.0107	0	0.0093	-0.0200	Dec-82
70	Jan-83	NORTHWEST NATURAL GAS CO NWNG	-12.125	0.076324	0.32	0.0087	0.0676	Jan-83
70	Feb-83	NORTHWEST NATURAL GAS CO NWNG	11.375	-0.06186	0	0.0081	-0.0700	Feb-83
70	Mar-83	NORTHWEST NATURAL GAS CO NWNG	12.25	0.076923	0	0.0089	0.0680	Mar-83
70	Apr-83	NORTHWEST NATURAL GAS CO NWNG	12.25	0.026122	0.32	0.0085	0.0176	Apr-83
70	May-83	NORTHWEST NATURAL GAS CO NWNG	13.125	0.071429	0	0.0091	0.0623	May-83
70	Jun-83	NORTHWEST NATURAL GAS CO NWNG	12.875	-0.01905	0	0.0090	-0.0280	Jun-83
70	Jul-83	NORTHWEST NATURAL GAS CO NWNG	12.25	-0.02369	0.32	0.0088	-0.0325	Jul-83
70	Aug-83	NORTHWEST NATURAL GAS CO NWNG	12	-0.02041	0	0.0103	-0.0307	Aug-83
70	Sep-83	NORTHWEST NATURAL GAS CO NWNG	12.625	0.052083	0	0.0096	0.0425	Sep-83
70	Oct-83	NORTHWEST NATURAL GAS CO NWNG	13.25	0.076436	0.34	0.0095	0.0669	Oct-83
70	Nov-83	NORTHWEST NATURAL GAS CO NWNG	13.75	0.037736	0	0.0094	0.0283	Nov-83
70	Dec-83	NORTHWEST NATURAL GAS CO NWNG	13.375	-0.02727	0	0.0094	-0.0367	Dec-83
70	Jan-84	NORTHWEST NATURAL GAS CO NWNG	13.875	0.062804	0.34	0.0103	0.0525	Jan-84
70	Feb-84	NORTHWEST NATURAL GAS CO NWNG	13.125	-0.05405	0	0.0092	-0.0633	Feb-84
70	Mar-84	NORTHWEST NATURAL GAS CO NWNG	13.125	0	0	0.0098	-0.0098	Mar-84
70	Apr-84	NORTHWEST NATURAL GAS CO NWNG	13.625	0.064	0.34	0.0104	0.0536	Apr-84
70	May-84	NORTHWEST NATURAL GAS CO NWNG	13.5	-0.00917	0	0.0103	-0.0195	May-84
70	Jun-84	NORTHWEST NATURAL GAS CO NWNG	13	-0.03704	0	0.0106	-0.0476	Jun-84
70	Jul-84	NORTHWEST NATURAL GAS CO NWNG	13.375	0.055	0.34	0.0116	0.0434	Jul-84
70	Aug-84	NORTHWEST NATURAL GAS CO NWNG	13.75	0.028037	0	0.0106	0.0174	Aug-84
70	Sep-84	NORTHWEST NATURAL GAS CO NWNG	14.5	0.054545	0	0.0094	0.0451	Sep-84
70	Oct-84	NORTHWEST NATURAL GAS CO NWNG	15.375	0.085172	0.36	0.0108	0.0744	Oct-84
70	Nov-84	NORTHWEST NATURAL GAS CO NWNG	15.875	0.03252	0	0.0091	0.0234	Nov-84
70	Dec-84	NORTHWEST NATURAL GAS CO NWNG	16.375	0.031496	0	0.0098	0.0217	Dec-84
70	Jan-85	NORTHWEST NATURAL GAS CO NWNG	17.375	0.083053	0.36	0.0096	0.0735	Jan-85
70	Feb-85	NORTHWEST NATURAL GAS CO NWNG	17.5	0.007194	0	0.0082	-0.0010	Feb-85
70	Mar-85	NORTHWEST NATURAL GAS CO NWNG	18.25	0.042857	0	0.0094	0.0335	Mar-85
70	Apr-85	NORTHWEST NATURAL GAS CO NWNG	18	0.006027	0.36	0.0102	-0.0042	Apr-85
70	May-85	NORTHWEST NATURAL GAS CO NWNG	18.875	0.048611	0	0.0097	0.0389	May-85
70	Jun-85	NORTHWEST NATURAL GAS CO NWNG	19.75	0.046358	0	0.0080	0.0384	Jun-85
70	Jul-85	NORTHWEST NATURAL GAS CO NWNG	17.875	-0.07671	0.36	0.0094	-0.0861	Jul-85
70	Aug-85	NORTHWEST NATURAL GAS CO NWNG	17.875	0	0	0.0085	-0.0085	Aug-85
70	Sep-85	NORTHWEST NATURAL GAS CO NWNG	17.625	-0.01399	0	0.0088	-0.0228	Sep-85

70	Oct-85	NORTHWEST NATURAL GAS CO NWNG	18.125	0.049929	0.38	0.0089	0.0410	Oct-85
70	Nov-85	NORTHWEST NATURAL GAS CO NWNG	19.125	0.055172	0	0.0081	0.0471	Nov-85
70	Dec-85	NORTHWEST NATURAL GAS CO NWNG	18.75	-0.01961	0	0.0086	-0.0282	Dec-85
70	Jan-86	NORTHWEST NATURAL GAS CO NWNG	19.875	0.080267	0.38	0.0079	0.0724	Jan-86
70	Feb-86	NORTHWEST NATURAL GAS CO NWNG	19.75	-0.00629	0	0.0073	-0.0136	Feb-86
70	Mar-86	NORTHWEST NATURAL GAS CO NWNG	22.75	0.151899	0	0.0071	0.1448	Mar-86
70	Apr-86	NORTHWEST NATURAL GAS CO NWNG	20.375	-0.08769	0.38	0.0063	-0.0940	Apr-86
70	May-86	NORTHWEST NATURAL GAS CO NWNG	19.5	-0.04295	0	0.0062	-0.0491	May-86
70	Jun-86	NORTHWEST NATURAL GAS CO NWNG	19.875	0.019231	0	0.0070	0.0122	Jun-86
70	Jul-86	NORTHWEST NATURAL GAS CO NWNG	21	0.075723	0.38	0.0066	0.0691	Jul-86
70	Aug-86	NORTHWEST NATURAL GAS CO NWNG	24.625	0.172619	0	0.0063	0.1663	Aug-86
70	Sep-86	NORTHWEST NATURAL GAS CO NWNG	22	-0.1066	0	0.0065	-0.1131	Sep-86
70	Oct-86	NORTHWEST NATURAL GAS CO NWNG	23.375	0.080227	0.39	0.0069	0.0733	Oct-86
70	Nov-86	NORTHWEST NATURAL GAS CO NWNG	24	0.026738	0	0.0059	0.0208	Nov-86
70	Dec-86	NORTHWEST NATURAL GAS CO NWNG	21.625	-0.09896	0	0.0070	-0.1060	Dec-86
70	Jan-87	NORTHWEST NATURAL GAS CO NWNG	24.375	0.145202	0.39	0.0064	0.1388	Jan-87
70	Feb-87	NORTHWEST NATURAL GAS CO NWNG	23.875	-0.02051	0	0.0059	-0.0264	Feb-87
70	Mar-87	NORTHWEST NATURAL GAS CO NWNG	22.75	-0.04712	0	0.0066	-0.0537	Mar-87
70	Apr-87	NORTHWEST NATURAL GAS CO NWNG	21.5	-0.0378	0.39	0.0065	-0.0443	Apr-87
70	May-87	NORTHWEST NATURAL GAS CO NWNG	21.125	-0.01744	0	0.0066	-0.0240	May-87
70	Jun-87	NORTHWEST NATURAL GAS CO NWNG	22.5	0.065089	0	0.0075	0.0576	Jun-87
70	Jul-87	NORTHWEST NATURAL GAS CO NWNG	22.625	0.022889	0.39	0.0073	0.0156	Jul-87
70	Aug-87	NORTHWEST NATURAL GAS CO NWNG	21.125	-0.0663	0	0.0075	-0.0738	Aug-87
70	Sep-87	NORTHWEST NATURAL GAS CO NWNG	19.875	-0.05917	0	0.0075	-0.0667	Sep-87
70	Oct-87	NORTHWEST NATURAL GAS CO NWNG	18.375	-0.05585	0.39	0.0079	-0.0637	Oct-87
70	Nov-87	NORTHWEST NATURAL GAS CO NWNG	18.25	-0.0068	0	0.0075	-0.0143	Nov-87
70	Dec-87	NORTHWEST NATURAL GAS CO NWNG	19.25	0.054795	0	0.0078	0.0470	Dec-87
70	Jan-88	NORTHWEST NATURAL GAS CO NWNG	19.25	0.02026	0.39	0.0072	0.0131	Jan-88
70	Feb-88	NORTHWEST NATURAL GAS CO NWNG	19.375	0.006494	0	0.0071	-0.0006	Feb-88
70	Mar-88	NORTHWEST NATURAL GAS CO NWNG	20.125	0.03871	0	0.0072	0.0315	Mar-88
70	Apr-88	NORTHWEST NATURAL GAS CO NWNG	19.75	0.000745	0.39	0.0070	-0.0063	Apr-88
70	May-88	NORTHWEST NATURAL GAS CO NWNG	20	0.012658	0	0.0078	0.0049	May-88
70	Jun-88	NORTHWEST NATURAL GAS CO NWNG	21.125	0.05625	0	0.0076	0.0487	Jun-88
70	Jul-88	NORTHWEST NATURAL GAS CO NWNG	20.875	0.006627	0.39	0.0071	-0.0005	Jul-88
70	Aug-88	NORTHWEST NATURAL GAS CO NWNG	20.875	0	0	0.0083	-0.0083	Aug-88
70	Sep-88	NORTHWEST NATURAL GAS CO NWNG	20.75	-0.00599	0	0.0076	-0.0136	Sep-88

70	Oct-88	NORTHWEST NATURAL GAS CO NWNG	20.75	0.019277	0.4	0.0076	0.0117	Oct-88
70	Nov-88	NORTHWEST NATURAL GAS CO NWNG	21.375	0.03012	0	0.0070	0.0231	Nov-88
70	Dec-88	NORTHWEST NATURAL GAS CO NWNG	21.125	-0.0117	0	0.0075	-0.0192	Dec-88
70	Jan-89	NORTHWEST NATURAL GAS CO NWNG	21.25	0.024852	0.4	0.0080	0.0169	Jan-89
70	Feb-89	NORTHWEST NATURAL GAS CO NWNG	19.75	-0.07059	0	0.0069	-0.0775	Feb-89
70	Mar-89	NORTHWEST NATURAL GAS CO NWNG	19.75	0	0	0.0079	-0.0079	Mar-89
70	Apr-89	NORTHWEST NATURAL GAS CO NWNG	21.375	0.102532	0.4	0.0070	0.0955	Apr-89
70	May-89	NORTHWEST NATURAL GAS CO NWNG	24	0.122807	0	0.0080	0.1148	May-89
70	Jun-89	NORTHWEST NATURAL GAS CO NWNG	23.5	-0.02083	0	0.0070	-0.0278	Jun-89
70	Jul-89	NORTHWEST NATURAL GAS CO NWNG	23.25	0.006383	0.4	0.0068	-0.0004	Jul-89
70	Aug-89	NORTHWEST NATURAL GAS CO NWNG	25	0.075269	0	0.0066	0.0687	Aug-89
70	Sep-89	NORTHWEST NATURAL GAS CO NWNG	26.125	0.045	0	0.0065	0.0385	Sep-89
70	Oct-89	NORTHWEST NATURAL GAS CO NWNG	25.375	-0.01301	0.41	0.0072	-0.0202	Oct-89
70	Nov-89	NORTHWEST NATURAL GAS CO NWNG	25.875	0.019704	0	0.0064	0.0133	Nov-89
70	Dec-89	NORTHWEST NATURAL GAS CO NWNG	25	-0.03382	0	0.0064	-0.0402	Dec-89
70	Jan-90	NORTHWEST NATURAL GAS CO NWNG	24.75	0.0064	0.41	0.0073	-0.0009	Jan-90
70	Feb-90	NORTHWEST NATURAL GAS CO NWNG	25.125	0.015152	0	0.0066	0.0086	Feb-90
70	Mar-90	NORTHWEST NATURAL GAS CO NWNG	24.625	-0.0199	0	0.0071	-0.0270	Mar-90
70	Apr-90	NORTHWEST NATURAL GAS CO NWNG	24.25	0.001421	0.41	0.0075	-0.0061	Apr-90
70	May-90	NORTHWEST NATURAL GAS CO NWNG	24.375	0.005155	0	0.0075	-0.0023	May-90
70	Jun-90	NORTHWEST NATURAL GAS CO NWNG	26.5	0.087179	0	0.0068	0.0804	Jun-90
70	Jul-90	NORTHWEST NATURAL GAS CO NWNG	23.875	-0.08359	0.41	0.0074	-0.0910	Jul-90
70	Aug-90	NORTHWEST NATURAL GAS CO NWNG	23.125	-0.03141	0	0.0071	-0.0385	Aug-90
70	Sep-90	NORTHWEST NATURAL GAS CO NWNG	24	0.037838	0	0.0069	0.0309	Sep-90
70	Oct-90	NORTHWEST NATURAL GAS CO NWNG	24.625	0.043542	0.42	0.0081	0.0354	Oct-90
70	Nov-90	NORTHWEST NATURAL GAS CO NWNG	26.25	0.06599	0	0.0071	0.0589	Nov-90
70	Dec-90	NORTHWEST NATURAL GAS CO NWNG	25.75	-0.01905	0	0.0072	-0.0262	Dec-90
70	Jan-91	NORTHWEST NATURAL GAS CO NWNG	25.875	0.021165	0.42	0.0071	0.0141	Jan-91
70	Feb-91	NORTHWEST NATURAL GAS CO NWNG	27	0.043478	0	0.0064	0.0371	Feb-91
70	Mar-91	NORTHWEST NATURAL GAS CO NWNG	27.25	0.009259	0	0.0064	0.0029	Mar-91
70	Apr-91	NORTHWEST NATURAL GAS CO NWNG	28.125	0.047523	0.42	0.0076	0.0399	Apr-91
70	May-91	NORTHWEST NATURAL GAS CO NWNG	28.5	0.013333	0	0.0068	0.0065	May-91
70	Jun-91	NORTHWEST NATURAL GAS CO NWNG	26.25	-0.07895	0	0.0063	-0.0852	Jun-91
70	Jul-91	NORTHWEST NATURAL GAS CO NWNG	28.25	0.09219	0.42	0.0076	0.0846	Jul-91
70	Aug-91	NORTHWEST NATURAL GAS CO NWNG	29	0.026549	0	0.0068	0.0197	Aug-91
70	Sep-91	NORTHWEST NATURAL GAS CO NWNG	29.75	0.025862	0	0.0068	0.0191	Sep-91

70	Oct-91	NORTHWEST NATURAL GAS CO NWNG	32	0.090084	0.43	0.0065	0.0836	Oct-91
70	Nov-91	NORTHWEST NATURAL GAS CO NWNG	30.375	-0.05078	0	0.0060	-0.0568	Nov-91
70	Dec-91	NORTHWEST NATURAL GAS CO NWNG	28.75	-0.0535	0	0.0068	-0.0603	Dec-91
70	Jan-92	NORTHWEST NATURAL GAS CO NWNG	30.5	0.075826	0.43	0.0061	0.0697	Jan-92
70	Feb-92	NORTHWEST NATURAL GAS CO NWNG	30.5	0	0	0.0059	-0.0059	Feb-92
70	Mar-92	NORTHWEST NATURAL GAS CO NWNG	29.5	-0.03279	0	0.0067	-0.0395	Mar-92
70	Apr-92	NORTHWEST NATURAL GAS CO NWNG	27	-0.07017	0.43	0.0065	-0.0767	Apr-92
70	May-92	NORTHWEST NATURAL GAS CO NWNG	29.75	0.101852	0	0.0061	0.0958	May-92
70	Jun-92	NORTHWEST NATURAL GAS CO NWNG	30.25	0.016807	0	0.0067	0.0101	Jun-92
70	Jul-92	NORTHWEST NATURAL GAS CO NWNG	31.25	0.047273	0.43	0.0063	0.0410	Jul-92
70	Aug-92	NORTHWEST NATURAL GAS CO NWNG	31.75	0.016	0	0.0060	0.0100	Aug-92
70	Sep-92	NORTHWEST NATURAL GAS CO NWNG	32.25	0.015748	0	0.0058	0.0099	Sep-92
70	Oct-92	NORTHWEST NATURAL GAS CO NWNG	30	-0.05643	0.43	0.0057	-0.0621	Oct-92
70	Nov-92	NORTHWEST NATURAL GAS CO NWNG	28.75	-0.04167	0	0.0061	-0.0478	Nov-92
70	Dec-92	NORTHWEST NATURAL GAS CO NWNG	28.5	-0.0087	0	0.0063	-0.0150	Dec-92
70	Jan-93	NORTHWEST NATURAL GAS CO NWNG	29.75	0.058947	0.43	0.0059	0.0530	Jan-93
70	Feb-93	NORTHWEST NATURAL GAS CO NWNG	32	0.07563	0	0.0055	0.0701	Feb-93
70	Mar-93	NORTHWEST NATURAL GAS CO NWNG	30.875	-0.03516	0	0.0063	-0.0415	Mar-93
70	Apr-93	NORTHWEST NATURAL GAS CO NWNG	31.375	0.030445	0.44	0.0057	0.0247	Apr-93
70	May-93	NORTHWEST NATURAL GAS CO NWNG	34	0.083665	0	0.0052	0.0785	May-93
70	Jun-93	NORTHWEST NATURAL GAS CO NWNG	34	0	0	0.0062	-0.0062	Jun-93
70	Jul-93	NORTHWEST NATURAL GAS CO NWNG	36.25	0.079118	0.44	0.0054	0.0737	Jul-93
70	Aug-93	NORTHWEST NATURAL GAS CO NWNG	36.25	0	0	0.0056	-0.0056	Aug-93
70	Sep-93	NORTHWEST NATURAL GAS CO NWNG	37.125	0.024138	0	0.0050	0.0191	Sep-93
70	Oct-93	NORTHWEST NATURAL GAS CO NWNG	36.25	-0.01172	0.44	0.0049	-0.0166	Oct-93
70	Nov-93	NORTHWEST NATURAL GAS CO NWNG	35	-0.03448	0	0.0053	-0.0398	Nov-93
70	Dec-93	NORTHWEST NATURAL GAS CO NWNG	34.25	-0.02143	0	0.0055	-0.0269	Dec-93
70	Jan-94	NORTHWEST NATURAL GAS CO NWNG	36	0.063942	0.44	0.0055	0.0584	Jan-94
70	Feb-94	NORTHWEST NATURAL GAS CO NWNG	35.75	-0.00694	0	0.0049	-0.0118	Feb-94
70	Mar-94	NORTHWEST NATURAL GAS CO NWNG	33.75	-0.05594	0	0.0058	-0.0617	Mar-94
70	Apr-94	NORTHWEST NATURAL GAS CO NWNG	33.75	0.013037	0.44	0.0057	0.0073	Apr-94
70	May-94	NORTHWEST NATURAL GAS CO NWNG	31	-0.08148	0	0.0063	-0.0878	May-94
70	Jun-94	NORTHWEST NATURAL GAS CO NWNG	30	-0.03226	0	0.0061	-0.0384	Jun-94
70	Jul-94	NORTHWEST NATURAL GAS CO NWNG	29.75	0.006333	0.44	0.0060	0.0003	Jul-94
70	Aug-94	NORTHWEST NATURAL GAS CO NWNG	30.5	0.02521	0	0.0066	0.0186	Aug-94
70	Sep-94	NORTHWEST NATURAL GAS CO NWNG	32	0.04918	0	0.0061	0.0431	Sep-94

70	Oct-94	NORTHWEST NATURAL GAS CO NWNG	30	-0.04875	0.44	0.0066	-0.0554	Oct-94
70	Nov-94	NORTHWEST NATURAL GAS CO NWNG	28.75	-0.04167	0	0.0064	-0.0481	Nov-94
70	Dec-94	NORTHWEST NATURAL GAS CO NWNG	29.5	0.026087	0	0.0066	0.0195	Dec-94
70	Jan-95	NORTHWEST NATURAL GAS CO NWNG	30.375	0.044576	0.44	0.0070	0.0376	Jan-95
70	Feb-95	NORTHWEST NATURAL GAS CO NWNG	30.25	-0.00412	0	0.0059	-0.0100	Feb-95
70	Mar-95	NORTHWEST NATURAL GAS CO NWNG	31.25	0.033058	0	0.0064	0.0267	Mar-95
70	Apr-95	NORTHWEST NATURAL GAS CO NWNG	30.9375	0.00408	0.44	0.0058	-0.0017	Apr-95
70	May-95	NORTHWEST NATURAL GAS CO NWNG	29.625	-0.04242	0	0.0065	-0.0489	May-95
70	Jun-95	NORTHWEST NATURAL GAS CO NWNG	31.25	0.054852	0	0.0054	0.0495	Jun-95
70	Jul-95	NORTHWEST NATURAL GAS CO NWNG	31.5	0.02208	0.44	0.0056	0.0165	Jul-95
70	Aug-95	NORTHWEST NATURAL GAS CO NWNG	31	-0.01587	0	0.0057	-0.0216	Aug-95
70	Sep-95	NORTHWEST NATURAL GAS CO NWNG	31	0	0	0.0052	-0.0052	Sep-95
70	Oct-95	NORTHWEST NATURAL GAS CO NWNG	32	0.046774	0.45	0.0057	0.0411	Oct-95
70	Nov-95	NORTHWEST NATURAL GAS CO NWNG	33.5	0.046875	0	0.0051	0.0418	Nov-95
70	Dec-95	NORTHWEST NATURAL GAS CO NWNG	33	-0.01493	0	0.0049	-0.0198	Dec-95
70	Jan-96	NORTHWEST NATURAL GAS CO NWNG	33.25	0.021212	0.45	0.0054	0.0158	Jan-96
70	Feb-96	NORTHWEST NATURAL GAS CO NWNG	33	-0.00752	0	0.0048	-0.0123	Feb-96
70	Mar-96	NORTHWEST NATURAL GAS CO NWNG	31.75	-0.03788	0	0.0052	-0.0431	Mar-96
70	Apr-96	NORTHWEST NATURAL GAS CO NWNG	32.5	0.037795	0.45	0.0059	0.0319	Apr-96
70	May-96	NORTHWEST NATURAL GAS CO NWNG	34.25	0.053846	0	0.0058	0.0480	May-96
70	Jun-96	NORTHWEST NATURAL GAS CO NWNG	35	0.021898	0	0.0054	0.0165	Jun-96
70	Jul-96	NORTHWEST NATURAL GAS CO NWNG	34.625	0.002143	0.45	0.0062	-0.0041	Jul-96
70	Aug-96	NORTHWEST NATURAL GAS CO NWNG	35.5	0.025271	0	0.0057	0.0196	Aug-96
70	Sep-96	NORTHWEST NATURAL GAS CO NWNG	23	-0.02817	0	0.0060	-0.0342	Sep-96
70	Oct-96	NORTHWEST NATURAL GAS CO NWNG	25.375	0.116304	0.3	0.0058	0.1105	Oct-96
70	Nov-96	NORTHWEST NATURAL GAS CO NWNG	25	-0.01478	0	0.0052	-0.0200	Nov-96
70	Dec-96	NORTHWEST NATURAL GAS CO NWNG	24	-0.04	0	0.0056	-0.0456	Dec-96
70	Jan-97	NORTHWEST NATURAL GAS CO NWNG	25	0.054167	0.3	0.0056	0.0486	Jan-97
70	Feb-97	NORTHWEST NATURAL GAS CO NWNG	24.25	-0.03	0	0.0051	-0.0351	Feb-97
70	Mar-97	NORTHWEST NATURAL GAS CO NWNG	24.5	0.010309	0	0.0059	0.0044	Mar-97
70	Apr-97	NORTHWEST NATURAL GAS CO NWNG	24.25	0.002041	0.3	0.0059	-0.0039	Apr-97
70	May-97	NORTHWEST NATURAL GAS CO NWNG	24.375	0.005155	0	0.0058	-0.0006	May-97
70	Jun-97	NORTHWEST NATURAL GAS CO NWNG	26.1875	0.074359	0	0.0059	0.0685	Jun-97
70	Jul-97	NORTHWEST NATURAL GAS CO NWNG	26	0.004296	0.3	0.0058	-0.0015	Jul-97
70	Aug-97	NORTHWEST NATURAL GAS CO NWNG	25	-0.03846	0	0.0049	-0.0434	Aug-97
70	Sep-97	NORTHWEST NATURAL GAS CO NWNG	25.75	0.03	0	0.0058	0.0242	Sep-97

70	Oct-97	NORTHWEST NATURAL GAS CO NWNG	24.625	-0.03185	0.305	0.0054	-0.0372	Oct-97
70	Nov-97	NORTHWEST NATURAL GAS CO NWNG	28	0.137056	0	0.0047	0.1324	Nov-97
70	Dec-97	NORTHWEST NATURAL GAS CO NWNG	31	0.107143	0	0.0054	0.1017	Dec-97
70	Jan-98	NORTHWEST NATURAL GAS CO NWNG	26.625	-0.13129	0.305	0.0048	-0.1361	Jan-98
70	Feb-98	NORTHWEST NATURAL GAS CO NWNG	28.1875	0.058685	0	0.0044	0.0543	Feb-98
70	Mar-98	NORTHWEST NATURAL GAS CO NWNG	28.125	-0.00222	0	0.0052	-0.0074	Mar-98
70	Apr-98	NORTHWEST NATURAL GAS CO NWNG	27	-0.02916	0.305	0.0049	-0.0341	Apr-98
70	May-98	NORTHWEST NATURAL GAS CO NWNG	27.5	0.018519	0	0.0048	0.0137	May-98
70	Jun-98	NORTHWEST NATURAL GAS CO NWNG	27.9688	0.017045	0	0.0052	0.0118	Jun-98
70	Jul-98	NORTHWEST NATURAL GAS CO NWNG	26.25	-0.05055	0.305	0.0049	-0.0554	Jul-98
70	Aug-98	NORTHWEST NATURAL GAS CO NWNG	24.375	-0.07143	0	0.0048	-0.0762	Aug-98
70	Sep-98	NORTHWEST NATURAL GAS CO NWNG	27.6563	0.134615	0	0.0044	0.1302	Sep-98
70	Oct-98	NORTHWEST NATURAL GAS CO NWNG	27.875	0.018938	0.305	0.0042	0.0147	Oct-98
70	Nov-98	NORTHWEST NATURAL GAS CO NWNG	28.375	0.017937	0	0.0045	0.0134	Nov-98
70	Dec-98	NORTHWEST NATURAL GAS CO NWNG	25.875	-0.08811	0	0.0045	-0.0926	Dec-98
70	Jan-99	NORTHWEST NATURAL GAS CO NWNG	23.5	-0.08	0.305	0.0042	-0.0842	Jan-99
70	Feb-99	NORTHWEST NATURAL GAS CO NWNG	24.4688	0.041223	0	0.0040	0.0372	Feb-99
70	Mar-99	NORTHWEST NATURAL GAS CO NWNG	21.875	-0.106	0	0.0053	-0.1113	Mar-99
70	Apr-99	NORTHWEST NATURAL GAS CO NWNG	22.5625	0.045371	0.305	0.0048	0.0406	Apr-99
70	May-99	NORTHWEST NATURAL GAS CO NWNG	24	0.063712	0	0.0045	0.0592	May-99
70	Jun-99	NORTHWEST NATURAL GAS CO NWNG	24.125	0.005208	0	0.0055	-0.0003	Jun-99
70	Jul-99	NORTHWEST NATURAL GAS CO NWNG	26.375	0.105907	0.305	0.0051	0.1008	Jul-99
70	Aug-99	NORTHWEST NATURAL GAS CO NWNG	25	-0.05213	0	0.0054	-0.0575	Aug-99
70	Sep-99	NORTHWEST NATURAL GAS CO NWNG	25.8125	0.0325	0	0.0052	0.0273	Sep-99
70	Oct-99	NORTHWEST NATURAL GAS CO NWNG	25.875	0.014237	0.305	0.0050	0.0092	Oct-99
70	Nov-99	NORTHWEST NATURAL GAS CO NWNG	25.125	-0.02879	0.005	0.0056	-0.0344	Nov-99
70	Dec-99	NORTHWEST NATURAL GAS CO NWNG	21.9375	-0.12687	0	0.0055	-0.1324	Dec-99
70	Jan-00	NORTHWEST NATURAL GAS CO NWNG	20.5	-0.0514	0.31	0.0057	-0.0571	Jan-00
70	Feb-00	NORTHWEST NATURAL GAS CO NWNG	19.5	-0.04878	0	0.0051	-0.0539	Feb-00
70	Mar-00	NORTHWEST NATURAL GAS CO NWNG	19.5	0	0	0.0054	-0.0054	Mar-00
70	Apr-00	NORTHWEST NATURAL GAS CO NWNG	22	0.144103	0.31	0.0047	0.1394	Apr-00
70	May-00	NORTHWEST NATURAL GAS CO NWNG	21.75	-0.01136	0	0.0056	-0.0170	May-00
70	Jun-00	NORTHWEST NATURAL GAS CO NWNG	22.375	0.028736	0	0.0052	0.0235	Jun-00
70	Jul-00	NORTHWEST NATURAL GAS CO NWN	23.125	0.047374	0.31	0.0052	0.0422	Jul-00
70	Aug-00	NORTHWEST NATURAL GAS CO NWN	23	-0.00541	0	0.0050	-0.0104	Aug-00
70	Sep-00	NORTHWEST NATURAL GAS CO NWN	22.75	-0.01087	0	0.0046	-0.0155	Sep-00

70	Oct-00	NORTHWEST NATURAL GAS CO NWN	23.4375	0.043846	0.31	0.0053	0.0385	Oct-00
70	Nov-00	NORTHWEST NATURAL GAS CO NWN	24	0.024	0	0.0048	0.0192	Nov-00
70	Dec-00	NORTHWEST NATURAL GAS CO NWN	26.5	0.104167	0	0.0045	0.0997	Dec-00
70	Jan-01	NORTHWEST NATURAL GAS CO NWN	24.01	-0.08226	0.31	0.0049	-0.0872	Jan-01
70	Feb-01	NORTHWEST NATURAL GAS CO NWN	24.45	0.018326	0	0.0042	0.0141	Feb-01
70	Mar-01	NORTHWEST NATURAL GAS CO NWN	24	-0.01841	0	0.0045	-0.0229	Mar-01
70	Apr-01	NORTHWEST NATURAL GAS CO NWN	22.2	-0.06208	0.31	0.0047	-0.0668	Apr-01
70	May-01	NORTHWEST NATURAL GAS CO NWN	23.9	0.076577	0	0.0050	0.0716	May-01
70	Jun-01	NORTHWEST NATURAL GAS CO NWN	24.9	0.041841	0	0.0047	0.0371	Jun-01
70	Jul-01	NORTHWEST NATURAL GAS CO NWN	24.08	-0.02048	0.31	0.0052	-0.0257	Jul-01
70	Aug-01	NORTHWEST NATURAL GAS CO NWN	25	0.038206	0	0.0046	0.0336	Aug-01
70	Sep-01	NORTHWEST NATURAL GAS CO NWN	23.39	-0.0644	0	0.0041	-0.0685	Sep-01
70	Oct-01	NORTHWEST NATURAL GAS CO NWN	23.9	0.035271	0.315	0.0048	0.0305	Oct-01
70	Nov-01	NORTHWEST NATURAL GAS CO NWN	24.45	0.023013	0	0.0041	0.0189	Nov-01
70	Dec-01	NORTHWEST NATURAL GAS CO NWN	25.5	0.042945	0	0.0046	0.0383	Dec-01
70	Jan-02	NORTHWEST NATURAL GAS CO NWN	26.15	0.037843	0.315	0.0048	0.0330	Jan-02
70	Feb-02	NORTHWEST NATURAL GAS CO NWN	26.34	0.007266	0	0.0043	0.0030	Feb-02
70	Mar-02	NORTHWEST NATURAL GAS CO NWN	28.01	0.063402	0	0.0043	0.0591	Mar-02
70	Apr-02	NORTHWEST NATURAL GAS CO NWN	28.4	0.02517	0.315	0.0054	0.0198	Apr-02
70	May-02	NORTHWEST NATURAL GAS CO NWN	29.25	0.02993	0	0.0049	0.0250	May-02
70	Jun-02	NORTHWEST NATURAL GAS CO NWN	28.75	-0.01709	0	0.0044	-0.0215	Jun-02
70	Jul-02	NORTHWEST NATURAL GAS CO NWN	28.1	-0.01165	0.315	0.0051	-0.0168	Jul-02
70	Aug-02	NORTHWEST NATURAL GAS CO NWN	28.05	-0.00178	0	0.0044	-0.0062	Aug-02
70	Sep-02	NORTHWEST NATURAL GAS CO NWN	29.36	0.046702	0	0.0042	0.0425	Sep-02
70	Oct-02	NORTHWEST NATURAL GAS CO NWN	29.98	0.031846	0.315	0.0040	0.0278	Oct-02
70	Nov-02	NORTHWEST NATURAL GAS CO NWN	25.6	-0.1461	0	0.0040	-0.1501	Nov-02
70	Dec-02	NORTHWEST NATURAL GAS CO NWN	27.06	0.057031	0	0.0045	0.0525	Dec-02
70	Jan-03	NORTHWEST NATURAL GAS CO NWN	26.02	-0.02679	0.315	0.0041	-0.0309	Jan-03
70	Feb-03	NORTHWEST NATURAL GAS CO NWN	24.5	-0.05842	0	0.0038	-0.0622	Feb-03
70	Mar-03	NORTHWEST NATURAL GAS CO NWN	25.1	0.02449	0	0.0040	0.0205	Mar-03
70	Apr-03	NORTHWEST NATURAL GAS CO NWN	25.83	0.041633	0.315	0.0040	0.0376	Apr-03
70	May-03	NORTHWEST NATURAL GAS CO NWN	27.85	0.078204	0	0.0039	0.0743	May-03
70	Jun-03	NORTHWEST NATURAL GAS CO NWN	27.25	-0.02154	0	0.0036	-0.0251	Jun-03
70	Jul-03	NORTHWEST NATURAL GAS CO NWN	28.47	0.05633	0.315	0.0038	0.0525	Jul-03
70	Aug-03	NORTHWEST NATURAL GAS CO NWN	28.49	0.000703	0	0.0042	-0.0035	Aug-03
70	Sep-03	NORTHWEST NATURAL GAS CO NWN	29	0.017901	0	0.0046	0.0133	Sep-03

70	Oct-03	NORTHWEST NATURAL GAS CO NWN	29	0.011207	0.325	0.0041	0.0071	Oct-03
70	Nov-03	NORTHWEST NATURAL GAS CO NWN	30.5	0.051724	0	0.0039	0.0478	Nov-03
70	Dec-03	NORTHWEST NATURAL GAS CO NWN	30.75	0.008197	0	0.0047	0.0035	Dec-03
70	Jan-04	NORTHWEST NATURAL GAS CO NWN	30.8	0.012195	0.325	0.0042	0.0080	Jan-04
70	Feb-04	NORTHWEST NATURAL GAS CO NWN	31.97	0.037987	0	0.0038	0.0342	Feb-04
70	Mar-04	NORTHWEST NATURAL GAS CO NWN	31.25	-0.02252	0	0.0043	-0.0268	Mar-04
70	Apr-04	NORTHWEST NATURAL GAS CO NWN	29.4	-0.0488	0.325	0.0039	-0.0527	Apr-04
70	May-04	NORTHWEST NATURAL GAS CO NWN	29.11	-0.00986	0	0.0040	-0.0139	May-04
70	Jun-04	NORTHWEST NATURAL GAS CO NWN	30.5	0.04775	0	0.0048	0.0430	Jun-04
70	Jul-04	NORTHWEST NATURAL GAS CO NWN	29.38	-0.02607	0.325	0.0043	-0.0304	Jul-04
70	Aug-04	NORTHWEST NATURAL GAS CO NWN	30.83	0.049353	0	0.0045	0.0449	Aug-04
70	Sep-04	NORTHWEST NATURAL GAS CO NWN	31.73	0.029192	0	0.0040	0.0252	Sep-04
70	Oct-04	NORTHWEST NATURAL GAS CO NWN	31.7	0.009297	0.325	0.0038	0.0055	Oct-04
70	Nov-04	NORTHWEST NATURAL GAS CO NWN	33.86	0.068139	0	0.0041	0.0640	Nov-04
70	Dec-04	NORTHWEST NATURAL GAS CO NWN	33.74	-0.00354	0	0.0043	-0.0078	Dec-04
70	Jan-05	NORTHWEST NATURAL GAS CO NWN	33.95	0.015857	0.325	0.0041	0.0118	Jan-05
70	Feb-05	NORTHWEST NATURAL GAS CO NWN	36.43	0.073049	0	0.0035	0.0695	Feb-05
70	Mar-05	NORTHWEST NATURAL GAS CO NWN	36.17	-0.00714	0	0.0041	-0.0112	Mar-05
70	Apr-05	NORTHWEST NATURAL GAS CO NWN	35.5	-0.00954	0.325	0.0039	-0.0134	Apr-05
70	May-05	NORTHWEST NATURAL GAS CO NWN	36.2	0.019718	0	0.0040	0.0157	May-05
70	Jun-05	NORTHWEST NATURAL GAS CO NWN	38.24	0.056354	0	0.0036	0.0528	Jun-05
70	Jul-05	NORTHWEST NATURAL GAS CO NWN	38.59	0.017652	0.325	0.0034	0.0143	Jul-05
70	Aug-05	NORTHWEST NATURAL GAS CO NWN	36.78	-0.0469	0	0.0040	-0.0509	Aug-05
70	Sep-05	NORTHWEST NATURAL GAS CO NWN	37.22	0.011963	0	0.0035	0.0085	Sep-05
70	Oct-05	NORTHWEST NATURAL GAS CO NWN	34.6	-0.06112	0.345	0.0039	-0.0650	Oct-05
70	Nov-05	NORTHWEST NATURAL GAS CO NWN	34.36	-0.00694	0	0.0039	-0.0108	Nov-05
70	Dec-05	NORTHWEST NATURAL GAS CO NWN	34.18	-0.00524	0	0.0039	-0.0091	Dec-05
70	Jan-06	NORTHWEST NATURAL GAS CO NWN	35.59	0.051346	0.345	0.0040	0.0473	Jan-06
70	Feb-06	NORTHWEST NATURAL GAS CO NWN	34.24	-0.03793	0	0.0036	-0.0415	Feb-06
70	Mar-06	NORTHWEST NATURAL GAS CO NWN	35.49	0.036507	0	0.0039	0.0326	Mar-06
70	Apr-06	NORTHWEST NATURAL GAS CO NWN	34.54	-0.01705	0.345	0.0039	-0.0209	Apr-06
70	May-06	NORTHWEST NATURAL GAS CO NWN	34.88	0.009844	0	0.0048	0.0050	May-06
70	Jun-06	NORTHWEST NATURAL GAS CO NWN	37.03	0.06164	0	0.0044	0.0572	Jun-06
70	Jul-06	NORTHWEST NATURAL GAS CO NWN	37.97	0.034702	0.345	0.0045	0.0302	Jul-06
70	Aug-06	NORTHWEST NATURAL GAS CO NWN	38.25	0.007374	0	0.0043	0.0031	Aug-06
70	Sep-06	NORTHWEST NATURAL GAS CO NWN	39.28	0.026928	0	0.0039	0.0230	Sep-06

70	Oct-06	NORTHWEST NATURAL GAS CO NWN	41.37	0.062245	0.355	0.0042	0.0580	Oct-06
70	Nov-06	NORTHWEST NATURAL GAS CO NWN	41.24	-0.00314	0	0.0039	-0.0070	Nov-06
70	Dec-06	NORTHWEST NATURAL GAS CO NWN	42.44	0.029098	0	0.0036	0.0255	Dec-06
70	Jan-07	NORTHWEST NATURAL GAS CO NWN	40.69	-0.03287	0.355	0.0043	-0.0372	Jan-07
70	Feb-07	NORTHWEST NATURAL GAS CO NWN	44.27	0.087982	0	0.0038	0.0842	Feb-07
70	Mar-07	NORTHWEST NATURAL GAS CO NWN	45.67	0.031624	0	0.0039	0.0277	Mar-07
70	Apr-07	NORTHWEST NATURAL GAS CO NWN	50.81	0.12032	0.355	0.0042	0.1161	Apr-07
70	May-07	NORTHWEST NATURAL GAS CO NWN	49.83	-0.01929	0	0.0041	-0.0234	May-07
70	Jun-07	NORTHWEST NATURAL GAS CO NWN	46.19	-0.07305	0	0.0040	-0.0770	Jun-07
70	Jul-07	NORTHWEST NATURAL GAS CO NWN	41.67	-0.09017	0.355	0.0046	-0.0948	Jul-07
70	Aug-07	NORTHWEST NATURAL GAS CO NWN	46.46	0.114951	0	0.0042	0.1108	Aug-07
70	Sep-07	NORTHWEST NATURAL GAS CO NWN	45.7	-0.01636	0	0.0037	-0.0201	Sep-07
70	Oct-07	NORTHWEST NATURAL GAS CO NWN	48.17	0.062254	0.375	0.0043	0.0580	Oct-07
70	Nov-07	NORTHWEST NATURAL GAS CO NWN	47.97	-0.00415	0	0.0039	-0.0081	Nov-07
70	Dec-07	NORTHWEST NATURAL GAS CO NWN	48.66	0.014384	0	0.0037	0.0107	Dec-07
70	Jan-08	NORTHWEST NATURAL GAS CO NWN	47.34	-0.01942	0.375	0.0040	-0.0234	Jan-08
70	Feb-08	NORTHWEST NATURAL GAS CO NWN	42.04	-0.11196	0	0.0034	-0.1154	Feb-08
70	Mar-08	NORTHWEST NATURAL GAS CO NWN	43.44	0.033302	0	0.0037	0.0296	Mar-08
70	Apr-08	NORTHWEST NATURAL GAS CO NWN	44.87	0.041552	0.375	0.0035	0.0381	Apr-08
70	May-08	NORTHWEST NATURAL GAS CO NWN	45.59	0.016046	0	0.0037	0.0123	May-08
70	Jun-08	NORTHWEST NATURAL GAS CO NWN	46.26	0.014696	0	0.0040	0.0107	Jun-08
70	Jul-08	NORTHWEST NATURAL GAS CO NWN	45.25	-0.01373	0.375	0.0039	-0.0176	Jul-08
70	Aug-08	NORTHWEST NATURAL GAS CO NWN	48.73	0.076906	0	0.0036	0.0733	Aug-08
70	Sep-08	NORTHWEST NATURAL GAS CO NWN	52	0.067104	0	0.0039	0.0632	Sep-08
70	Oct-08	NORTHWEST NATURAL GAS CO NWN	50.88	-0.01394	0.395	0.0037	-0.0176	Oct-08
70	Nov-08	NORTHWEST NATURAL GAS CO NWN	49.95	-0.01828	0	0.0036	-0.0219	Nov-08
70	Dec-08	NORTHWEST NATURAL GAS CO NWN	44.23	-0.11452	0	0.0033	-0.1178	Dec-08
70	Jan-09	NORTHWEST NATURAL GAS CO NWN	42.94	-0.02024	0.395	0.0024	-0.0226	Jan-09
70	Feb-09	NORTHWEST NATURAL GAS CO NWN	40.95	-0.04634	0	0.0030	-0.0493	Feb-09
70	Mar-09	NORTHWEST NATURAL GAS CO NWN	43.42	0.060317	0	0.0035	0.0568	Mar-09
70	Apr-09	NORTHWEST NATURAL GAS CO NWN	40.9	-0.04894	0.395	0.0029	-0.0518	Apr-09
70	May-09	NORTHWEST NATURAL GAS CO NWN	42.44	0.037653	0	0.0033	0.0344	May-09
70	Jun-09	NORTHWEST NATURAL GAS CO NWN	44.32	0.044298	0	0.0038	0.0405	Jun-09
70	Jul-09	NORTHWEST NATURAL GAS CO NWN	44.64	0.016133	0.395	0.0036	0.0125	Jul-09
70	Aug-09	NORTHWEST NATURAL GAS CO NWN	42.1	-0.0569	0	0.0036	-0.0605	Aug-09
70	Sep-09	NORTHWEST NATURAL GAS CO NWN	41.66	-0.01045	0	0.0034	-0.0139	Sep-09

70	Oct-09	NORTHWEST NATURAL GAS CO NWN	41.81	0.013562	0.415	0.0033	0.0103	Oct-09
70	Nov-09	NORTHWEST NATURAL GAS CO NWN	42.88	0.025592	0	0.0035	0.0221	Nov-09
70	Dec-09	NORTHWEST NATURAL GAS CO NWN	45.04	0.050373	0	0.0034	0.0470	Dec-09
70	Jan-10	NORTHWEST NATURAL GAS CO NWN	43.37	-0.02786	0.415	0.0036	-0.0315	Jan-10
70	Feb-10	NORTHWEST NATURAL GAS CO NWN	43.99	0.014296	0	0.0033	0.0110	Feb-10
70	Mar-10	NORTHWEST NATURAL GAS CO NWN	46.6	0.059332	0	0.0040	0.0553	Mar-10
70	Apr-10	NORTHWEST NATURAL GAS CO NWN	47.39	0.025858	0.415	0.0038	0.0221	Apr-10
70	May-10	NORTHWEST NATURAL GAS CO NWN	43.97	-0.07217	0	0.0034	-0.0756	May-10
70	Jun-10	NORTHWEST NATURAL GAS CO NWN	43.57	-0.0091	0	0.0037	-0.0128	Jun-10
70	Jul-10	NORTHWEST NATURAL GAS CO NWN	47.41	0.097659	0.415	0.0031	0.0946	Jul-10
70	Aug-10	NORTHWEST NATURAL GAS CO NWN	45.44	-0.04155	0	0.0032	-0.0448	Aug-10
70	Sep-10	NORTHWEST NATURAL GAS CO NWN	47.45	0.044234	0	0.0026	0.0416	Sep-10
70	Oct-10	NORTHWEST NATURAL GAS CO NWN	49.29	0.047945	0.435	0.0027	0.0452	Oct-10
70	Nov-10	NORTHWEST NATURAL GAS CO NWN	48.82	-0.00954	0	0.0032	-0.0127	Nov-10
70	Dec-10	NORTHWEST NATURAL GAS CO NWN	46.47	-0.04814	0	0.0032	-0.0513	Dec-10
70	Jan-11	NORTHWEST NATURAL GAS CO NWN	44.56	-0.03174	0.435	0.003567	-0.0353	Jan-11
70	Feb-11	NORTHWEST NATURAL GAS CO NWN	47	0.054758	0	0.003683	0.0511	Feb-11
70	Mar-11	NORTHWEST NATURAL GAS CO NWN	46.13	-0.01851	0	0.003558	-0.0221	Mar-11
70	Apr-11	NORTHWEST NATURAL GAS CO NWN	46.24	0.011814	0.435	0.003567	0.0082	Apr-11
70	May-11	NORTHWEST NATURAL GAS CO NWN	45.17	-0.02314	0	0.003342	-0.0265	May-11
70	Jun-11	NORTHWEST NATURAL GAS CO NWN	45.13	-0.00089	0	0.003258	-0.0041	Jun-11
70	Jul-11	NORTHWEST NATURAL GAS CO NWN	44.61	-0.00188	0.435	0.003292	-0.0052	Jul-11
70	Aug-11	NORTHWEST NATURAL GAS CO NWN	45.22	0.013674	0	0.003042	0.0106	Aug-11
70	Sep-11	NORTHWEST NATURAL GAS CO NWN	44.1	-0.02477	0	0.002358	-0.0271	Sep-11
70	Oct-11	NORTHWEST NATURAL GAS CO NWN	46.72	0.069501	0.445	0.002392	0.0671	Oct-11
70	Nov-11	NORTHWEST NATURAL GAS CO NWN	47.06	0.007277	0	0.002267	0.0050	Nov-11
70	Dec-11	NORTHWEST NATURAL GAS CO NWN	47.93	0.018487	0	0.002483	0.0160	Dec-11
70	Jan-12	NORTHWEST NATURAL GAS CO NWN	47.55	0.001356	0.445	0.0021	-0.0007	Jan-12
70	Feb-12	NORTHWEST NATURAL GAS CO NWN	45.77	-0.03743	0	0.002	-0.0394	Feb-12
70	Mar-12	NORTHWEST NATURAL GAS CO NWN	45.4	-0.00808	0	0.0022	-0.0103	Mar-12
70	Apr-12	NORTHWEST NATURAL GAS CO NWN	45.7	0.01641	0.445	0.0025	0.0139	Apr-12
70	May-12	NORTHWEST NATURAL GAS CO NWN	46.35	0.014223	0	0.0023	0.0119	May-12
70	Jun-12	NORTHWEST NATURAL GAS CO NWN	47.6	0.026969	0	0.0018	0.0252	Jun-12
	Jul-12	NORTHWEST NATURAL GAS CO NWN	48.69	0.032248	0.445	0.002	0.0302	Jul-12
	Aug-12	NORTHWEST NATURAL GAS CO NWN	49.17	0.009858	0	0.0018	0.0081	Aug-12
	Sep-12	NORTHWEST NATURAL GAS CO NWN	49.24	0.001424	0	0.0017	-0.0003	Sep-12

Oct-12	NORTHWEST NATURAL GAS CO NWN	46.53	-0.0458	0.455	0.0021	-0.0479	Oct-12
Nov-12	NORTHWEST NATURAL GAS CO NWN	43.86	-0.05738	0	0.0019	-0.0593	Nov-12
Dec-12	NORTHWEST NATURAL GAS CO NWN	44.2	0.007752	0	0.0019	0.0059	Dec-12
Jan-13	NORTHWEST NATURAL GAS CO NWN	45.42	0.037896	0.455	0.0022	0.0357	Jan-13
Feb-13	NORTHWEST NATURAL GAS CO NWN	45.55	0.002862	0	0.0022	0.0007	Feb-13
Mar-13	NORTHWEST NATURAL GAS CO NWN	43.82	-0.03798	0	0.0021	-0.0401	Mar-13
Apr-13	NORTHWEST NATURAL GAS CO NWN	44.47	0.025217	0.455	0.0026	0.0226	Apr-13
May-13	NORTHWEST NATURAL GAS CO NWN	42.73	-0.03913	0	0.0023	-0.0414	May-13
Jun-13	NORTHWEST NATURAL GAS CO NWN	42.68	-0.00117	0	0.0024	-0.0036	Jun-13
Jul-13	NORTHWEST NATURAL GAS CO NWN	43.94	0.040183	0.455	0.003	0.0372	Jul-13
Aug-13	NORTHWEST NATURAL GAS CO NWN	41.04	-0.066	0	0.0028	-0.0688	Aug-13
Sep-13	NORTHWEST NATURAL GAS CO NWN	41.98	0.022904	0	0.0029	0.0200	Sep-13
Oct-13	NORTHWEST NATURAL GAS CO NWN	43.43	0.045498	0.46	0.0029	0.0426	Oct-13
Nov-13	NORTHWEST NATURAL GAS CO NWN	42.53	-0.02072	0	0.0027	-0.0234	Nov-13
Dec-13	NORTHWEST NATURAL GAS CO NWN	42.82	0.006819	0	0.0031	0.0037	Dec-13
Jan-14	NORTHWEST NATURAL GAS CO NWN	41.56	-0.01868	0.46	0.0032	-0.0219	Jan-14
Feb-14	NORTHWEST NATURAL GAS CO NWN	42.87	0.031521	0	0.0026	0.0289	Feb-14
Mar-14	NORTHWEST NATURAL GAS CO NWN	44.01	0.026592	0	0.0029	0.0237	Mar-14
Apr-14	NORTHWEST NATURAL GAS CO NWN	44.27	0.01636	0.46	0.0028	0.0136	Apr-14
May-14	NORTHWEST NATURAL GAS CO NWN	45.27	0.022589	0	0.0028	0.0198	May-14
Jun-14	NORTHWEST NATURAL GAS CO NWN	47.15	0.041529	0	0.0025	0.0390	Jun-14
Jul-14	NORTHWEST NATURAL GAS CO NWN	43.22	-0.07359	0.46	0.0027	-0.0763	Jul-14
Aug-14	NORTHWEST NATURAL GAS CO NWN	45.46	0.051828	0	0.0026	0.0492	Aug-14
Sep-14	NORTHWEST NATURAL GAS CO NWN	42.25	-0.07061	0	0.0023	-0.0729	Sep-14
Oct-14	NORTHWEST NATURAL GAS CO NWN	46.93	0.121775	0.465	0.0025	0.1193	Oct-14
Nov-14	NORTHWEST NATURAL GAS CO NWN	46.51	-0.00895	0	0.0023	-0.0112	Nov-14
Dec-14	NORTHWEST NATURAL GAS CO NWN	49.9	0.072888	0	0.0022	0.0707	Dec-14
Jan-15	NORTHWEST NATURAL GAS CO NWN	49.91	0.009519	0.465	0.002	0.0075	Jan-15
Feb-15	NORTHWEST NATURAL GAS CO NWN	47.25	-0.0533	0	0.0015	-0.0548	Feb-15
Mar-15	NORTHWEST NATURAL GAS CO NWN	47.95	0.014815	0	0.0021	0.0127	Mar-15
Apr-15	NORTHWEST NATURAL GAS CO NWN	46.7	-0.01637	0.465	0.0019	-0.0183	Apr-15
May-15	NORTHWEST NATURAL GAS CO NWN	44.7	-0.04283	0	0.002	-0.0448	May-15
Jun-15	NORTHWEST NATURAL GAS CO NWN	42.18	-0.05638	0	0.003492	-0.0599	Jun-15
Jul-15	NORTHWEST NATURAL GAS CO NWN	43.29	0.03734	0.465	0.003458	0.0339	Jul-15
Aug-15	NORTHWEST NATURAL GAS CO NWN	43.98	0.015939	0	0.003367	0.0126	Aug-15
Sep-15	NORTHWEST NATURAL GAS CO NWN	45.84	0.042292	0	0.003392	0.0389	Sep-15

Oct-15	NORTHWEST NATURAL GAS CO NWN	47.77	0.052301	0.4675	0.003292	0.04901	Oct-15
Nov-15	NORTHWEST NATURAL GAS CO NWN	48.8	0.021562	0	0.003383	0.018178	Nov-15
Dec-15	NORTHWEST NATURAL GAS CO NWN	50.61	0.03709	0	0.003308	0.033782	Dec-15
Jan-16	NORTHWEST NATURAL GAS CO NWN	51.95	0.035714	0.4675	0.003333	0.032381	Jan-16
Feb-16	NORTHWEST NATURAL GAS CO NWN	49.89	-0.03965	0	0.0033	-0.042954	Feb-16
Mar-16	NORTHWEST NATURAL GAS CO NWN	53.85	0.079375	0	0.003183	0.076191	Mar-16
Apr-16	NORTHWEST NATURAL GAS CO NWN	51.54	-0.03422	0.4675	0.003183	-0.037399	Apr-16
May-16	NORTHWEST NATURAL GAS CO NWN	54.9	0.065192	0	0.003042	0.06215	May-16
Jun-16	NORTHWEST NATURAL GAS CO NWN	64.82	0.180692	0	0.002917	0.177776	Jun-16
Jul-16	NORTHWEST NATURAL GAS CO NWN	64.94	0.009064	0.4675	0.002733	0.00633	Jul-16
Aug-16	NORTHWEST NATURAL GAS CO NWN	59.73	-0.08023	0	0.002767	-0.082995	Aug-16
Sep-16	NORTHWEST NATURAL GAS CO NWN	60.11	0.006362	0	0.002842	0.00352	Sep-16
Oct-16	NORTHWEST NATURAL GAS CO NWN	58.8	-0.01397	0.47	0.002842	-0.016816	Oct-16
Nov-16	NORTHWEST NATURAL GAS CO NWN	57.3	-0.02551	0	0.003217	-0.028727	Nov-16
Dec-16	NORTHWEST NATURAL GAS CO NWN	59.8	0.04363	0	0.003383	0.040247	Dec-16
Jan-17	NORTHWEST NATURAL GAS CO NWN	58.9	-0.00719	0.47	0.003267	-0.010457	Jan-17
Feb-17	NORTHWEST NATURAL GAS CO NWN	60.1	0.020374	0	0.003292	0.017082	Feb-17
Mar-17	NORTHWEST NATURAL GAS CO NWN	59.1	-0.01664	0	0.003292	-0.019931	Mar-17
Apr-17	NORTHWEST NATURAL GAS CO NWN	59.6	0.016413	0.47	0.003225	0.013188	Apr-17
May-17	NORTHWEST NATURAL GAS CO NWN	61.25	0.027685	0	0.003208	0.024476	May-17
Jun-17	NORTHWEST NATURAL GAS CO NWN	59.85	-0.02286	0	0.003067	-0.025924	Jun-17
Jul-17	NORTHWEST NATURAL GAS CO NWN	63.1	0.062155	0.47	0.00315	0.059005	Jul-17
Aug-17	NORTHWEST NATURAL GAS CO NWN	66.3	0.050713	0	0.003083	0.04763	Aug-17
Sep-17	NORTHWEST NATURAL GAS CO NWN	64.4	-0.02866	0	0.003025	-0.031683	Sep-17
Oct-17	NORTHWEST NATURAL GAS CO NWN	66.35	0.037616	0.4725	0.003	0.034616	Oct-17
Nov-17	NORTHWEST NATURAL GAS CO NWN	69.15	0.0422	0	0.003	0.0392	Nov-17
Dec-17	NORTHWEST NATURAL GAS CO NWN	59.65	-0.13738	0	0.002925	-0.140308	Dec-17
Jan-18	NORTHWEST NATURAL GAS CO NWN	57.35	-0.03064	0.4725	0.002925	-0.033562	Jan-18
Feb-18	NORTHWEST NATURAL GAS CO NWN	52.15	-0.09067	0	0.002958	-0.09363	Feb-18
Mar-18	NORTHWEST NATURAL GAS CO NWN	57.65	0.105465	0	0.003225	0.10224	Mar-18
Apr-18	NORTHWEST NATURAL GAS CO NWN	61.3	0.071509	0.4725	0.003208	0.068301	Apr-18
May-18	NORTHWEST NATURAL GAS CO NWN	59.8	-0.02447	0	0.003325	-0.027795	May-18
Jun-18	NORTHWEST NATURAL GAS CO NWN	63.8	0.06689	0	0.0033	0.06359	Jun-18
Jul-18	NORTHWEST NATURAL GAS CO NWN	65.15	0.028566	0.4725	0.003225	0.025341	Jul-18
Aug-18	NORTHWEST NATURAL GAS CO NWN	64.9	-0.00384	0	0.003233	-0.007071	Aug-18
Sep-18	NORTHWEST NATURAL GAS CO NWN	66.9	0.030817	0	0.003233	0.027583	Sep-18

Oct-18	NORTHWEST NATURAL GAS CO NWN	64.79	-0.02444	0.475	0.00345	-0.027889	Oct-18
Nov-18	NORTHWEST NATURAL GAS CO NWN	66.33	0.023769	0	0.003517	0.020252	Nov-18
Dec-18	NORTHWEST NATURAL GAS CO NWN	60.46	-0.0885	0	0.00335	-0.091847	Dec-18
Jan-19	NORTHWEST NATURAL GAS CO NWN	62.6	0.043252	0.475	0.003275	0.039977	Jan-19
Feb-19	NORTHWEST NATURAL GAS CO NWN	64.22	0.025879	0	0.003158	0.02272	Feb-19
Mar-19	NORTHWEST NATURAL GAS CO NWN	65.63	0.021956	0	0.003158	0.018797	Mar-19
Apr-19	NORTHWEST NATURAL GAS CO NWN	66.89	0.026436	0.475	0.003075	0.023361	Apr-19
May-19	NORTHWEST NATURAL GAS CO NWN	68.82	0.028853	0	0.003058	0.025795	May-19
Jun-19	NORTHWEST NATURAL GAS CO NWN	69.5	0.009881	0	0.003058	0.006823	Jun-19
Jul-19	NORTHWEST NATURAL GAS CO NWN	71.42	0.03446	0.475	0.002742	0.031719	Jul-19
Aug-19	NORTHWEST NATURAL GAS CO NWN	71.36	-0.00084	0	0.002742	-0.003582	Aug-19
Sep-19	NORTHWEST NATURAL GAS CO NWN	71.34	-0.00028	0	0.002483	-0.002764	Sep-19
Oct-19	NORTHWEST NATURAL GAS CO NWN	69.36	-0.02106	0.4775	0.002525	-0.023586	Oct-19
Nov-19	NORTHWEST NATURAL GAS CO NWN	68.77	-0.00851	0	0.002558	-0.011065	Nov-19
Dec-19	NORTHWEST NATURAL GAS CO NWN	73.73	0.072124	0	0.002508	0.069616	Dec-19
Jan-20	NORTHWEST NATURAL GAS CO NWN	73.38	0.001729	0.4775	0.00235	-0.000621	Jan-20
Feb-20	NORTHWEST NATURAL GAS CO NWN	65.77	-0.10371	0	0.00245	-0.106157	Feb-20
Mar-20	NORTHWEST NATURAL GAS CO NWN	61.75	-0.06112	0	0.002317	-0.063439	Mar-20
Apr-20	NORTHWEST NATURAL GAS CO NWN	65.1	0.061984	0.4775	0.002025	0.059959	Apr-20
May-20	NORTHWEST NATURAL GAS CO NWN	64.11	-0.01521	0	0.002075	-0.017282	May-20
Jun-20	NORTHWEST NATURAL GAS CO NWN	55.79	-0.12978	0	0.002008	-0.131785	Jun-20
Jul-20	NORTHWEST NATURAL GAS CO NWN	53.49	-0.03267	0.4775	0.001692	-0.034359	Jul-20
Aug-20	NORTHWEST NATURAL GAS CO NWN	51.11	-0.04449	0	0.001875	-0.046369	Aug-20
Sep-20	NORTHWEST NATURAL GAS CO NWN	45.39	-0.11192	0	0.001925	-0.11384	Sep-20
Oct-20	NORTHWEST NATURAL GAS CO NWN	44.44	-0.01035	0.48	0.001958	-0.012313	Oct-20
Nov-20	NORTHWEST NATURAL GAS CO NWN	47.92	0.078308	0	0.001917	0.076391	Nov-20
Dec-20	NORTHWEST NATURAL GAS CO NWN	45.99	-0.04028	0	0.001883	-0.042159	Dec-20
Jan-21	NORTHWEST NATURAL GAS CO NWN	46.71	0.026093	0.48	0.002042	0.024051	Jan-21
Feb-21	NORTHWEST NATURAL GAS CO NWN	47.99	0.027403	0	0.00225	0.025153	Feb-21
Mar-21	NORTHWEST NATURAL GAS CO NWN	53.95	0.124193	0	0.002533	0.121659	Mar-21

Unique Index Number	Trading Date	Company Name	Ticker	Closing Price	Total Return	Dividend Amount	IbbotRf	RP	Trading Date
	Jan-26						0.0031		Jan-26
	Feb-26						0.0028		Feb-26
	Mar-26						0.0032		Mar-26
	Apr-26						0.0030		Apr-26
	May-26						0.0028		May-26
	Jun-26						0.0033		Jun-26
	Jul-26						0.0031		Jul-26
	Aug-26						0.0031		Aug-26
	Sep-26						0.0030		Sep-26
	Oct-26						0.0030		Oct-26
	Nov-26						0.0031		Nov-26
	Dec-26						0.0030		Dec-26
	Jan-27						0.0030		Jan-27
	Feb-27						0.0027		Feb-27
	Mar-27						0.0029		Mar-27
	Apr-27						0.0027		Apr-27
	May-27						0.0028		May-27
	Jun-27						0.0027		Jun-27
	Jul-27						0.0027		Jul-27
	Aug-27						0.0029		Aug-27
	Sep-27						0.0027		Sep-27
	Oct-27						0.0028		Oct-27
	Nov-27						0.0027		Nov-27
	Dec-27						0.0027		Dec-27
	Jan-28						0.0027		Jan-28
	Feb-28						0.0025		Feb-28
	Mar-28						0.0027		Mar-28
	Apr-28						0.0026		Apr-28
	May-28						0.0027		May-28
	Jun-28						0.0027		Jun-28
	Jul-28						0.0027		Jul-28
	Aug-28						0.0029		Aug-28
	Sep-28						0.0027		Sep-28

Oct-28	0.0030	Oct-28
Nov-28	0.0027	Nov-28
Dec-28	0.0029	Dec-28
Jan-29	0.0029	Jan-29
Feb-29	0.0027	Feb-29
Mar-29	0.0028	Mar-29
Apr-29	0.0034	Apr-29
May-29	0.0030	May-29
Jun-29	0.0029	Jun-29
Jul-29	0.0032	Jul-29
Aug-29	0.0030	Aug-29
Sep-29	0.0032	Sep-29
Oct-29	0.0031	Oct-29
Nov-29	0.0026	Nov-29
Dec-29	0.0031	Dec-29
Jan-30	0.0029	Jan-30
Feb-30	0.0026	Feb-30
Mar-30	0.0029	Mar-30
Apr-30	0.0027	Apr-30
May-30	0.0027	May-30
Jun-30	0.0029	Jun-30
Jul-30	0.0028	Jul-30
Aug-30	0.0026	Aug-30
Sep-30	0.0029	Sep-30
Oct-30	0.0027	Oct-30
Nov-30	0.0026	Nov-30
Dec-30	0.0028	Dec-30
Jan-31	0.0028	Jan-31
Feb-31	0.0026	Feb-31
Mar-31	0.0029	Mar-31
Apr-31	0.0027	Apr-31
May-31	0.0026	May-31
Jun-31	0.0028	Jun-31
Jul-31	0.0027	Jul-31
Aug-31	0.0027	Aug-31
Sep-31	0.0027	Sep-31

Oct-31	0.0029	Oct-31
Nov-31	0.0031	Nov-31
Dec-31	0.0032	Dec-31
Jan-32	0.0032	Jan-32
Feb-32	0.0032	Feb-32
Mar-32	0.0031	Mar-32
Apr-32	0.0030	Apr-32
May-32	0.0028	May-32
Jun-32	0.0028	Jun-32
Jul-32	0.0028	Jul-32
Aug-32	0.0028	Aug-32
Sep-32	0.0026	Sep-32
Oct-32	0.0027	Oct-32
Nov-32	0.0026	Nov-32
Dec-32	0.0027	Dec-32
Jan-33	0.0027	Jan-33
Feb-33	0.0023	Feb-33
Mar-33	0.0027	Mar-33
Apr-33	0.0025	Apr-33
May-33	0.0028	May-33
Jun-33	0.0025	Jun-33
Jul-33	0.0026	Jul-33
Aug-33	0.0026	Aug-33
Sep-33	0.0025	Sep-33
Oct-33	0.0026	Oct-33
Nov-33	0.0025	Nov-33
Dec-33	0.0028	Dec-33
Jan-34	0.0029	Jan-34
Feb-34	0.0024	Feb-34
Mar-34	0.0027	Mar-34
Apr-34	0.0025	Apr-34
May-34	0.0025	May-34
Jun-34	0.0024	Jun-34
Jul-34	0.0024	Jul-34
Aug-34	0.0024	Aug-34
Sep-34	0.0023	Sep-34

Oct-34	0.0027	Oct-34
Nov-34	0.0025	Nov-34
Dec-34	0.0025	Dec-34
Jan-35	0.0025	Jan-35
Feb-35	0.0021	Feb-35
Mar-35	0.0022	Mar-35
Apr-35	0.0023	Apr-35
May-35	0.0023	May-35
Jun-35	0.0022	Jun-35
Jul-35	0.0024	Jul-35
Aug-35	0.0023	Aug-35
Sep-35	0.0023	Sep-35
Oct-35	0.0023	Oct-35
Nov-35	0.0024	Nov-35
Dec-35	0.0024	Dec-35
Jan-36	0.0024	Jan-36
Feb-36	0.0023	Feb-36
Mar-36	0.0024	Mar-36
Apr-36	0.0022	Apr-36
May-36	0.0022	May-36
Jun-36	0.0024	Jun-36
Jul-36	0.0023	Jul-36
Aug-36	0.0023	Aug-36
Sep-36	0.0021	Sep-36
Oct-36	0.0023	Oct-36
Nov-36	0.0022	Nov-36
Dec-36	0.0022	Dec-36
Jan-37	0.0021	Jan-37
Feb-37	0.0020	Feb-37
Mar-37	0.0022	Mar-37
Apr-37	0.0023	Apr-37
May-37	0.0022	May-37
Jun-37	0.0025	Jun-37
Jul-37	0.0024	Jul-37
Aug-37	0.0023	Aug-37
Sep-37	0.0023	Sep-37

Oct-37	0.0023	Oct-37
Nov-37	0.0024	Nov-37
Dec-37	0.0023	Dec-37
Jan-38	0.0023	Jan-38
Feb-38	0.0021	Feb-38
Mar-38	0.0023	Mar-38
Apr-38	0.0022	Apr-38
May-38	0.0022	May-38
Jun-38	0.0021	Jun-38
Jul-38	0.0021	Jul-38
Aug-38	0.0022	Aug-38
Sep-38	0.0021	Sep-38
Oct-38	0.0022	Oct-38
Nov-38	0.0021	Nov-38
Dec-38	0.0022	Dec-38
Jan-39	0.0021	Jan-39
Feb-39	0.0019	Feb-39
Mar-39	0.0021	Mar-39
Apr-39	0.0019	Apr-39
May-39	0.0020	May-39
Jun-39	0.0018	Jun-39
Jul-39	0.0019	Jul-39
Aug-39	0.0018	Aug-39
Sep-39	0.0019	Sep-39
Oct-39	0.0023	Oct-39
Nov-39	0.0020	Nov-39
Dec-39	0.0019	Dec-39
Jan-40	0.0020	Jan-40
Feb-40	0.0018	Feb-40
Mar-40	0.0019	Mar-40
Apr-40	0.0018	Apr-40
May-40	0.0019	May-40
Jun-40	0.0019	Jun-40
Jul-40	0.0020	Jul-40
Aug-40	0.0019	Aug-40
Sep-40	0.0018	Sep-40

Oct-40	0.0018	Oct-40
Nov-40	0.0018	Nov-40
Dec-40	0.0017	Dec-40
Jan-41	0.0016	Jan-41
Feb-41	0.0016	Feb-41
Mar-41	0.0018	Mar-41
Apr-41	0.0017	Apr-41
May-41	0.0017	May-41
Jun-41	0.0016	Jun-41
Jul-41	0.0016	Jul-41
Aug-41	0.0016	Aug-41
Sep-41	0.0016	Sep-41
Oct-41	0.0016	Oct-41
Nov-41	0.0014	Nov-41
Dec-41	0.0016	Dec-41
Jan-42	0.0021	Jan-42
Feb-42	0.0019	Feb-42
Mar-42	0.0021	Mar-42
Apr-42	0.0020	Apr-42
May-42	0.0019	May-42
Jun-42	0.0021	Jun-42
Jul-42	0.0021	Jul-42
Aug-42	0.0021	Aug-42
Sep-42	0.0020	Sep-42
Oct-42	0.0021	Oct-42
Nov-42	0.0020	Nov-42
Dec-42	0.0021	Dec-42
Jan-43	0.0020	Jan-43
Feb-43	0.0019	Feb-43
Mar-43	0.0021	Mar-43
Apr-43	0.0020	Apr-43
May-43	0.0019	May-43
Jun-43	0.0021	Jun-43
Jul-43	0.0021	Jul-43
Aug-43	0.0021	Aug-43
Sep-43	0.0020	Sep-43

Oct-43	0.0020	Oct-43
Nov-43	0.0021	Nov-43
Dec-43	0.0021	Dec-43
Jan-44	0.0021	Jan-44
Feb-44	0.0020	Feb-44
Mar-44	0.0021	Mar-44
Apr-44	0.0020	Apr-44
May-44	0.0022	May-44
Jun-44	0.0020	Jun-44
Jul-44	0.0021	Jul-44
Aug-44	0.0021	Aug-44
Sep-44	0.0020	Sep-44
Oct-44	0.0021	Oct-44
Nov-44	0.0020	Nov-44
Dec-44	0.0020	Dec-44
Jan-45	0.0021	Jan-45
Feb-45	0.0018	Feb-45
Mar-45	0.0020	Mar-45
Apr-45	0.0019	Apr-45
May-45	0.0019	May-45
Jun-45	0.0019	Jun-45
Jul-45	0.0018	Jul-45
Aug-45	0.0019	Aug-45
Sep-45	0.0018	Sep-45
Oct-45	0.0019	Oct-45
Nov-45	0.0018	Nov-45
Dec-45	0.0018	Dec-45
Jan-46	0.0017	Jan-46
Feb-46	0.0015	Feb-46
Mar-46	0.0016	Mar-46
Apr-46	0.0017	Apr-46
May-46	0.0018	May-46
Jun-46	0.0016	Jun-46
Jul-46	0.0019	Jul-46
Aug-46	0.0017	Aug-46
Sep-46	0.0018	Sep-46

Oct-46	0.0019	Oct-46
Nov-46	0.0018	Nov-46
Dec-46	0.0019	Dec-46
Jan-47	0.0018	Jan-47
Feb-47	0.0016	Feb-47
Mar-47	0.0018	Mar-47
Apr-47	0.0017	Apr-47
May-47	0.0017	May-47
Jun-47	0.0019	Jun-47
Jul-47	0.0018	Jul-47
Aug-47	0.0017	Aug-47
Sep-47	0.0018	Sep-47
Oct-47	0.0018	Oct-47
Nov-47	0.0017	Nov-47
Dec-47	0.0021	Dec-47
Jan-48	0.0020	Jan-48
Feb-48	0.0019	Feb-48
Mar-48	0.0022	Mar-48
Apr-48	0.0020	Apr-48
May-48	0.0018	May-48
Jun-48	0.0021	Jun-48
Jul-48	0.0019	Jul-48
Aug-48	0.0021	Aug-48
Sep-48	0.0020	Sep-48
Oct-48	0.0019	Oct-48
Nov-48	0.0021	Nov-48
Dec-48	0.0020	Dec-48
Jan-49	0.0020	Jan-49
Feb-49	0.0018	Feb-49
Mar-49	0.0019	Mar-49
Apr-49	0.0018	Apr-49
May-49	0.0020	May-49
Jun-49	0.0019	Jun-49
Jul-49	0.0017	Jul-49
Aug-49	0.0019	Aug-49
Sep-49	0.0017	Sep-49

Oct-49	0.0018	Oct-49
Nov-49	0.0017	Nov-49
Dec-49	0.0017	Dec-49
Jan-50	0.0018	Jan-50
Feb-50	0.0016	Feb-50
Mar-50	0.0018	Mar-50
Apr-50	0.0016	Apr-50
May-50	0.0019	May-50
Jun-50	0.0017	Jun-50
Jul-50	0.0018	Jul-50
Aug-50	0.0018	Aug-50
Sep-50	0.0017	Sep-50
Oct-50	0.0019	Oct-50
Nov-50	0.0018	Nov-50
Dec-50	0.0018	Dec-50
Jan-51	0.0020	Jan-51
Feb-51	0.0017	Feb-51
Mar-51	0.0019	Mar-51
Apr-51	0.0020	Apr-51
May-51	0.0021	May-51
Jun-51	0.0020	Jun-51
Jul-51	0.0023	Jul-51
Aug-51	0.0021	Aug-51
Sep-51	0.0019	Sep-51
Oct-51	0.0023	Oct-51
Nov-51	0.0021	Nov-51
Dec-51	0.0022	Dec-51
Jan-52	0.0023	Jan-52
Feb-52	0.0021	Feb-52
Mar-52	0.0023	Mar-52
Apr-52	0.0022	Apr-52
May-52	0.0020	May-52
Jun-52	0.0022	Jun-52
Jul-52	0.0022	Jul-52
Aug-52	0.0021	Aug-52
Sep-52	0.0023	Sep-52

Oct-52	0.0023	Oct-52
Nov-52	0.0021	Nov-52
Dec-52	0.0024	Dec-52
Jan-53	0.0023	Jan-53
Feb-53	0.0021	Feb-53
Mar-53	0.0025	Mar-53
Apr-53	0.0024	Apr-53
May-53	0.0024	May-53
Jun-53	0.0027	Jun-53
Jul-53	0.0025	Jul-53
Aug-53	0.0025	Aug-53
Sep-53	0.0025	Sep-53
Oct-53	0.0023	Oct-53
Nov-53	0.0024	Nov-53
Dec-53	0.0024	Dec-53
Jan-54	0.0023	Jan-54
Feb-54	0.0022	Feb-54
Mar-54	0.0025	Mar-54
Apr-54	0.0022	Apr-54
May-54	0.0020	May-54
Jun-54	0.0025	Jun-54
Jul-54	0.0022	Jul-54
Aug-54	0.0023	Aug-54
Sep-54	0.0022	Sep-54
Oct-54	0.0021	Oct-54
Nov-54	0.0023	Nov-54
Dec-54	0.0023	Dec-54
Jan-55	0.0022	Jan-55
Feb-55	0.0022	Feb-55
Mar-55	0.0024	Mar-55
Apr-55	0.0022	Apr-55
May-55	0.0025	May-55
Jun-55	0.0023	Jun-55
Jul-55	0.0023	Jul-55
Aug-55	0.0027	Aug-55
Sep-55	0.0024	Sep-55

Oct-55	0.0025	Oct-55
Nov-55	0.0024	Nov-55
Dec-55	0.0024	Dec-55
Jan-56	0.0025	Jan-56
Feb-56	0.0023	Feb-56
Mar-56	0.0023	Mar-56
Apr-56	0.0026	Apr-56
May-56	0.0026	May-56
Jun-56	0.0023	Jun-56
Jul-56	0.0026	Jul-56
Aug-56	0.0026	Aug-56
Sep-56	0.0025	Sep-56
Oct-56	0.0029	Oct-56
Nov-56	0.0027	Nov-56
Dec-56	0.0028	Dec-56
Jan-57	0.0029	Jan-57
Feb-57	0.0025	Feb-57
Mar-57	0.0026	Mar-57
Apr-57	0.0029	Apr-57
May-57	0.0029	May-57
Jun-57	0.0025	Jun-57
Jul-57	0.0033	Jul-57
Aug-57	0.0030	Aug-57
Sep-57	0.0031	Sep-57
Oct-57	0.0031	Oct-57
Nov-57	0.0029	Nov-57
Dec-57	0.0029	Dec-57
Jan-58	0.0027	Jan-58
Feb-58	0.0025	Feb-58
Mar-58	0.0027	Mar-58
Apr-58	0.0026	Apr-58
May-58	0.0024	May-58
Jun-58	0.0027	Jun-58
Jul-58	0.0027	Jul-58
Aug-58	0.0027	Aug-58
Sep-58	0.0032	Sep-58

Oct-58	0.0032	Oct-58
Nov-58	0.0028	Nov-58
Dec-58	0.0033	Dec-58
Jan-59	0.0031	Jan-59
Feb-59	0.0031	Feb-59
Mar-59	0.0035	Mar-59
Apr-59	0.0033	Apr-59
May-59	0.0033	May-59
Jun-59	0.0036	Jun-59
Jul-59	0.0035	Jul-59
Aug-59	0.0035	Aug-59
Sep-59	0.0034	Sep-59
Oct-59	0.0035	Oct-59
Nov-59	0.0035	Nov-59
Dec-59	0.0036	Dec-59
Jan-60	0.0035	Jan-60
Feb-60	0.0037	Feb-60
Mar-60	0.0036	Mar-60
Apr-60	0.0032	Apr-60
May-60	0.0037	May-60
Jun-60	0.0034	Jun-60
Jul-60	0.0032	Jul-60
Aug-60	0.0034	Aug-60
Sep-60	0.0032	Sep-60
Oct-60	0.0033	Oct-60
Nov-60	0.0032	Nov-60
Dec-60	0.0033	Dec-60
Jan-61	0.0033	Jan-61
Feb-61	0.0030	Feb-61
Mar-61	0.0031	Mar-61
Apr-61	0.0031	Apr-61
May-61	0.0034	May-61
Jun-61	0.0032	Jun-61
Jul-61	0.0033	Jul-61
Aug-61	0.0033	Aug-61
Sep-61	0.0032	Sep-61

Oct-61	0.0034	Oct-61
Nov-61	0.0032	Nov-61
Dec-61	0.0031	Dec-61
Jan-62	0.0037	Jan-62
Feb-62	0.0032	Feb-62
Mar-62	0.0033	Mar-62
Apr-62	0.0033	Apr-62
May-62	0.0032	May-62
Jun-62	0.0030	Jun-62
Jul-62	0.0034	Jul-62
Aug-62	0.0034	Aug-62
Sep-62	0.0030	Sep-62
Oct-62	0.0035	Oct-62
Nov-62	0.0031	Nov-62
Dec-62	0.0032	Dec-62
Jan-63	0.0032	Jan-63
Feb-63	0.0029	Feb-63
Mar-63	0.0031	Mar-63
Apr-63	0.0034	Apr-63
May-63	0.0033	May-63
Jun-63	0.0030	Jun-63
Jul-63	0.0036	Jul-63
Aug-63	0.0033	Aug-63
Sep-63	0.0034	Sep-63
Oct-63	0.0034	Oct-63
Nov-63	0.0032	Nov-63
Dec-63	0.0036	Dec-63
Jan-64	0.0035	Jan-64
Feb-64	0.0032	Feb-64
Mar-64	0.0037	Mar-64
Apr-64	0.0035	Apr-64
May-64	0.0032	May-64
Jun-64	0.0038	Jun-64
Jul-64	0.0035	Jul-64
Aug-64	0.0035	Aug-64
Sep-64	0.0034	Sep-64

Oct-64	0.0034	Oct-64
Nov-64	0.0035	Nov-64
Dec-64	0.0035	Dec-64
Jan-65	0.0033	Jan-65
Feb-65	0.0032	Feb-65
Mar-65	0.0038	Mar-65
Apr-65	0.0033	Apr-65
May-65	0.0033	May-65
Jun-65	0.0038	Jun-65
Jul-65	0.0034	Jul-65
Aug-65	0.0037	Aug-65
Sep-65	0.0035	Sep-65
Oct-65	0.0034	Oct-65
Nov-65	0.0037	Nov-65
Dec-65	0.0037	Dec-65
Jan-66	0.0038	Jan-66
Feb-66	0.0034	Feb-66
Mar-66	0.0040	Mar-66
Apr-66	0.0036	Apr-66
May-66	0.0041	May-66
Jun-66	0.0039	Jun-66
Jul-66	0.0038	Jul-66
Aug-66	0.0043	Aug-66
Sep-66	0.0041	Sep-66
Oct-66	0.0040	Oct-66
Nov-66	0.0038	Nov-66
Dec-66	0.0039	Dec-66
Jan-67	0.0040	Jan-67
Feb-67	0.0034	Feb-67
Mar-67	0.0039	Mar-67
Apr-67	0.0035	Apr-67
May-67	0.0043	May-67
Jun-67	0.0039	Jun-67
Jul-67	0.0043	Jul-67
Aug-67	0.0042	Aug-67
Sep-67	0.0040	Sep-67

Oct-67	0.0045	Oct-67
Nov-67	0.0045	Nov-67
Dec-67	0.0044	Dec-67
Jan-68	0.0050	Jan-68
Feb-68	0.0042	Feb-68
Mar-68	0.0043	Mar-68
Apr-68	0.0049	Apr-68
May-68	0.0046	May-68
Jun-68	0.0042	Jun-68
Jul-68	0.0048	Jul-68
Aug-68	0.0042	Aug-68
Sep-68	0.0044	Sep-68
Oct-68	0.0045	Oct-68
Nov-68	0.0043	Nov-68
Dec-68	0.0049	Dec-68
Jan-69	0.0050	Jan-69
Feb-69	0.0046	Feb-69
Mar-69	0.0047	Mar-69
Apr-69	0.0055	Apr-69
May-69	0.0047	May-69
Jun-69	0.0055	Jun-69
Jul-69	0.0052	Jul-69
Aug-69	0.0048	Aug-69
Sep-69	0.0055	Sep-69
Oct-69	0.0057	Oct-69
Nov-69	0.0049	Nov-69
Dec-69	0.0060	Dec-69
Jan-70	0.0056	Jan-70
Feb-70	0.0052	Feb-70
Mar-70	0.0056	Mar-70
Apr-70	0.0054	Apr-70
May-70	0.0055	May-70
Jun-70	0.0064	Jun-70
Jul-70	0.0059	Jul-70
Aug-70	0.0057	Aug-70
Sep-70	0.0056	Sep-70

	Oct-70	0.0055	Oct-70
	Nov-70	0.0058	Nov-70
	Dec-70	0.0053	Dec-70
	Jan-71	0.0051	Jan-71
	Feb-71	0.0046	Feb-71
	Mar-71	0.0056	Mar-71
	Apr-71	0.0048	Apr-71
	May-71	0.0047	May-71
	Jun-71	0.0056	Jun-71
	Jul-71	0.0052	Jul-71
	Aug-71	0.0055	Aug-71
	Sep-71	0.0049	Sep-71
	Oct-71	0.0047	Oct-71
	Nov-71	0.0051	Nov-71
	Dec-71	0.0050	Dec-71
	Jan-72	0.0050	Jan-72
	Feb-72	0.0047	Feb-72
	Mar-72	0.0049	Mar-72
	Apr-72	0.0048	Apr-72
	May-72	0.0055	May-72
	Jun-72	0.0049	Jun-72
	Jul-72	0.0051	Jul-72
	Aug-72	0.0049	Aug-72
	Sep-72	0.0047	Sep-72
	Oct-72	0.0052	Oct-72
	Nov-72	0.0048	Nov-72
70	Dec-72	0.0045	Dec-72
70	Jan-73	0.0054	Jan-73
70	Feb-73	0.0051	Feb-73
70	Mar-73	0.0056	Mar-73
70	Apr-73	0.0057	Apr-73
70	May-73	0.0058	May-73
70	Jun-73	0.0055	Jun-73
70	Jul-73	0.0061	Jul-73
70	Aug-73	0.0062	Aug-73
70	Sep-73	0.0055	Sep-73

70	Oct-73	0.0063	Oct-73
70	Nov-73	0.0056	Nov-73
70	Dec-73	0.0060	Dec-73
70	Jan-74	0.0061	Jan-74
70	Feb-74	0.0055	Feb-74
70	Mar-74	0.0058	Mar-74
70	Apr-74	0.0068	Apr-74
70	May-74	0.0068	May-74
70	Jun-74	0.0061	Jun-74
70	Jul-74	0.0072	Jul-74
70	Aug-74	0.0065	Aug-74
70	Sep-74	0.0071	Sep-74
70	Oct-74	0.0070	Oct-74
70	Nov-74	0.0062	Nov-74
70	Dec-74	0.0067	Dec-74
70	Jan-75	0.0068	Jan-75
70	Feb-75	0.0060	Feb-75
70	Mar-75	0.0066	Mar-75
70	Apr-75	0.0067	Apr-75
70	May-75	0.0067	May-75
70	Jun-75	0.0070	Jun-75
70	Jul-75	0.0068	Jul-75
70	Aug-75	0.0065	Aug-75
70	Sep-75	0.0073	Sep-75
70	Oct-75	0.0072	Oct-75
70	Nov-75	0.0061	Nov-75
70	Dec-75	0.0074	Dec-75
70	Jan-76	0.0065	Jan-76
70	Feb-76	0.0060	Feb-76
70	Mar-76	0.0071	Mar-76
70	Apr-76	0.0064	Apr-76
70	May-76	0.0059	May-76
70	Jun-76	0.0073	Jun-76
70	Jul-76	0.0065	Jul-76
70	Aug-76	0.0069	Aug-76
70	Sep-76	0.0064	Sep-76

70	Oct-76	0.0061	Oct-76
70	Nov-76	0.0066	Nov-76
70	Dec-76	0.0063	Dec-76
70	Jan-77	0.0059	Jan-77
70	Feb-77	0.0057	Feb-77
70	Mar-77	0.0065	Mar-77
70	Apr-77	0.0061	Apr-77
70	May-77	0.0067	May-77
70	Jun-77	0.0062	Jun-77
70	Jul-77	0.0059	Jul-77
70	Aug-77	0.0067	Aug-77
70	Sep-77	0.0061	Sep-77
70	Oct-77	0.0063	Oct-77
70	Nov-77	0.0063	Nov-77
70	Dec-77	0.0062	Dec-77
70	Jan-78	0.0069	Jan-78
70	Feb-78	0.0060	Feb-78
70	Mar-78	0.0069	Mar-78
70	Apr-78	0.0063	Apr-78
70	May-78	0.0075	May-78
70	Jun-78	0.0069	Jun-78
70	Jul-78	0.0073	Jul-78
70	Aug-78	0.0070	Aug-78
70	Sep-78	0.0065	Sep-78
70	Oct-78	0.0073	Oct-78
70	Nov-78	0.0071	Nov-78
70	Dec-78	0.0068	Dec-78
70	Jan-79	0.0079	Jan-79
70	Feb-79	0.0065	Feb-79
70	Mar-79	0.0074	Mar-79
70	Apr-79	0.0076	Apr-79
70	May-79	0.0077	May-79
70	Jun-79	0.0071	Jun-79
70	Jul-79	0.0076	Jul-79
70	Aug-79	0.0073	Aug-79
70	Sep-79	0.0068	Sep-79

70	Oct-79	0.0082	Oct-79
70	Nov-79	0.0083	Nov-79
70	Dec-79	0.0083	Dec-79
70	Jan-80	0.0083	Jan-80
70	Feb-80	0.0084	Feb-80
70	Mar-80	0.0099	Mar-80
70	Apr-80	0.0100	Apr-80
70	May-80	0.0087	May-80
70	Jun-80	0.0086	Jun-80
70	Jul-80	0.0084	Jul-80
70	Aug-80	0.0081	Aug-80
70	Sep-80	0.0097	Sep-80
70	Oct-80	0.0097	Oct-80
70	Nov-80	0.0091	Nov-80
70	Dec-80	0.0108	Dec-80
70	Jan-81	0.0094	Jan-81
70	Feb-81	0.0088	Feb-81
70	Mar-81	0.0111	Mar-81
70	Apr-81	0.0101	Apr-81
70	May-81	0.0104	May-81
70	Jun-81	0.0109	Jun-81
70	Jul-81	0.0109	Jul-81
70	Aug-81	0.0110	Aug-81
70	Sep-81	0.0114	Sep-81
70	Oct-81	0.0117	Oct-81
70	Nov-81	0.0113	Nov-81
70	Dec-81	0.0100	Dec-81
70	Jan-82	0.0108	Jan-82
70	Feb-82	0.0103	Feb-82
70	Mar-82	0.0124	Mar-82
70	Apr-82	0.0112	Apr-82
70	May-82	0.0101	May-82
70	Jun-82	0.0120	Jun-82
70	Jul-82	0.0114	Jul-82
70	Aug-82	0.0112	Aug-82
70	Sep-82	0.0100	Sep-82

70	Oct-82	0.0091	Oct-82
70	Nov-82	0.0094	Nov-82
70	Dec-82	0.0093	Dec-82
70	Jan-83	0.0087	Jan-83
70	Feb-83	0.0081	Feb-83
70	Mar-83	0.0089	Mar-83
70	Apr-83	0.0085	Apr-83
70	May-83	0.0091	May-83
70	Jun-83	0.0090	Jun-83
70	Jul-83	0.0088	Jul-83
70	Aug-83	0.0103	Aug-83
70	Sep-83	0.0096	Sep-83
70	Oct-83	0.0095	Oct-83
70	Nov-83	0.0094	Nov-83
70	Dec-83	0.0094	Dec-83
70	Jan-84	0.0103	Jan-84
70	Feb-84	0.0092	Feb-84
70	Mar-84	0.0098	Mar-84
70	Apr-84	0.0104	Apr-84
70	May-84	0.0103	May-84
70	Jun-84	0.0106	Jun-84
70	Jul-84	0.0116	Jul-84
70	Aug-84	0.0106	Aug-84
70	Sep-84	0.0094	Sep-84
70	Oct-84	0.0108	Oct-84
70	Nov-84	0.0091	Nov-84
70	Dec-84	0.0098	Dec-84
70	Jan-85	0.0096	Jan-85
70	Feb-85	0.0082	Feb-85
70	Mar-85	0.0094	Mar-85
70	Apr-85	0.0102	Apr-85
70	May-85	0.0097	May-85
70	Jun-85	0.0080	Jun-85
70	Jul-85	0.0094	Jul-85
70	Aug-85	0.0085	Aug-85
70	Sep-85	0.0088	Sep-85