Business Sector Market Assessment and Baseline Study: Industrial: Appendices Vol. 2

Final Report

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Table of Contents

Table of Contents

Table of Contents

List of Exhibits:

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Appendix A: General

A.1. Premise Weighted Results

Table A-1
Building Type by Geo-Target (Premise)

Building Type	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Multiple building complex	**All Industrial**	**24**	**36%**	**14%**	**57%**
	Geo	5	79%	54%	105%
	Non-Geo	19	25%	4%	47%
Single stand-alone building	**All Industrial**	**24**	**64%**	**43%**	**86%**
	Geo	5	21%	-5%	46%
	Non-Geo	19	75%	53%	96%

Table A-2
Systems Upgraded in Past 5 Years by Geo-Target (Premise)

System Type	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Heating and ventilation	**All Industrial**	**23**	**15%**	**-3%**	**33%**
	Geo	5	0%	0%	0%
	Non-Geo	18	19%	-3%	41%
AC	**All Industrial**	**23**	**1%**	**-1%**	**3%**
	Geo	5	0%	0%	0%
	Non-Geo	18	2%	-1%	4%
Lighting	**All Industrial**	**23**	**30%**	**12%**	**49%**
	Geo	5	21%	-5%	46%
	Non-Geo	18	33%	10%	55%
Refrigeration	**All Industrial**	**23**	**15%**	**-3%**	**33%**
	Geo	5	0%	0%	0%
	Non-Geo	18	19%	-3%	41%
None of the above	**All Industrial**	**23**	**38%**	**16%**	**59%**
	Geo	5	79%	54%	105%
	Non-Geo	18	28%	6%	50%

Table A-3
Square Footage of Conditioned Floor Space by Geo-Target (Premise)

Square Footage	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
2,000 and Under	**All Industrial**	**38**	**2%**	**-1%**	**4%**
	Geo	13	0%	0%	0%
	Non-Geo	25	2%	-1%	5%
2,001-5,000	**All Industrial**	**38**	**19%**	**-1%**	**38%**
	Geo	13	0%	0%	0%
	Non-Geo	25	24%	0%	49%
5,001-10,000	**All Industrial**	**38**	**5%**	**1%**	**9%**
	Geo	13	0%	0%	0%
	Non-Geo	25	6%	1%	12%
10,001-20,000	**All Industrial**	**38**	**60%**	**39%**	**80%**
	Geo	13	75%	50%	101%
	Non-Geo	25	55%	30%	80%
20,001-50,000	**All Industrial**	**38**	**6%**	**2%**	**10%**
	Geo	13	14%	-3%	30%
	Non-Geo	25	3%	0%	7%
Over 50,000	**All Industrial**	**38**	**9%**	**4%**	**15%**
	Geo	13	11%	-2%	24%
	Non-Geo	25	9%	3%	15%

Table A-4
Average Floorspace by Geo-Target (Premise)

Area	Average FloorSpace	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
All Industrial	**23,760**	**38**	**16,669**	**30,186,526**
Geo	24,591	13	14,397	4,808,517
Non-Geo	23,509	25	14,595	20,855,807

Table A-5
Ownership Status by Geo-Target (Premise)

Ownership Status	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Own and occupy the entire facility	**All Industrial**	**44**	**55%**	**34%**	**76%**
	Geo	14	25%	-1%	50%
	Non-Geo	30	62%	38%	85%
Own the entire facility and occupy a part of it	**All Industrial**	**44**	**13%**	**-2%**	**29%**
	Geo	14	68%	37%	99%
	Non-Geo	30	0%	0%	0%
Lease the entire facility from another organization	**All Industrial**	**44**	**17%**	**0%**	**33%**
	Geo	14	19%	-1%	39%
	Non-Geo	30	7%	-4%	17%
Lease a portion of the facility from another organization	**All Industrial**	**44**	**14%**	**-2%**	**31%**
	Geo	14	18%	-3%	38%
	Non-Geo	30	17%	0%	33%
Other ownership arrangement	**All Industrial**	**44**	**1%**	**0%**	**3%**
	Geo	14	2%	-1%	4%
	Non-Geo	30	1%	0%	2%

Table A-6
Secondary Economic Use by Geo-Target (Premise)

Secondary Economic Use?	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
No	**All Industrial**	**29**	**82%**	**65%**	**100%**
	Geo	7	99%	97%	101%
	Non-Geo	22	78%	57%	99%
Yes	**All Industrial**	**29**	**18%**	**0%**	**35%**
	Geo	7	0%	0%	0%
	Non-Geo	22	22%	1%	43%

Table A-7
Year Built by Geo-Target (Premise)

Year Built	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Unknown	**All Industrial**	**44**	**31%**	**10%**	**51%**
	Geo	14	1%	0%	3%
	Non-Geo	30	38%	14%	62%
Before 1900	**All Industrial**	**44**	**2%**	**0%**	**4%**
	Geo	14	0%	0%	0%
	Non-Geo	30	2%	0%	5%
1900-1959	**All Industrial**	**44**	**3%**	**0%**	**5%**
	Geo	14	0%	0%	0%
	Non-Geo	30	3%	0%	6%
1960-1969	**All Industrial**	**44**	**2%**	**0%**	**4%**
	Geo	14	2%	0%	4%
	Non-Geo	30	2%	-1%	4%
1970-1979	**All Industrial**	**44**	**19%**	**3%**	**34%**
	Geo	14	76%	51%	100%
	Non-Geo	30	5%	1%	9%
1980-1989	**All Industrial**	**44**	**7%**	**3%**	**12%**
	Geo	14	14%	-3%	30%
	Non-Geo	30	6%	1%	10%
1990-2000	**All Industrial**	**44**	**36%**	**15%**	**56%**
	Geo	14	7%	-3%	18%
	Non-Geo	30	43%	19%	66%
After 2000	**All Industrial**	**44**	**2%**	**0%**	**4%**
	Geo	14	0%	0%	0%
	Non-Geo	30	2%	0%	5%

Appendix B: Indoor Lighting

B.1. Types of Indoor Lighting

B.1.1. Facility kWh Weighted Results

Table B-1
Types of Indoor Lighting (Facility kWh)

Light Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Incandescent	**All Industrial**	**10%**	**43**	**4%**	**15%**
	Geo	9%	13	0%	19%
	Non-Geo	10%	30	3%	17%
CFL	**All Industrial**	**10%**	**43**	**4%**	**16%**
	Geo	17%	13	-3%	36%
	Non-Geo	8%	30	3%	13%
HID	**All Industrial**	**25%**	**43**	**18%**	**33%**
	Geo	21%	13	7%	36%
	Non-Geo	27%	30	19%	35%
T5	**All Industrial**	**7%**	**43**	**3%**	**12%**
	Geo	7%	13	0%	14%
	Non-Geo	8%	30	3%	13%
Standard T8	**All Industrial**	**41%**	**43**	**28%**	**53%**
	Geo	43%	13	26%	60%
	Non-Geo	40%	30	25%	55%
High Performance T8	**All Industrial**	**6%**	**43**	**2%**	**10%**
	Geo	11%	13	1%	21%
	Non-Geo	4%	30	0%	8%
T12	**All Industrial**	**36%**	**43**	**27%**	**46%**
	Geo	41%	13	23%	59%
	Non-Geo	35%	30	23%	46%
Quartz	**All Industrial**	**2%**	**43**	**0%**	**4%**
	Geo	7%	13	-2%	15%
	Non-Geo	1%	30	0%	1%
Other Fluorescent	**All Industrial**	**5%**	**43**	**2%**	**8%**
	Geo	9%	13	2%	16%
	Non-Geo	4%	30	0%	8%
Unknown Fluorescent Tube	**All Industrial**	**3%**	**43**	**1%**	**6%**
	Geo	8%	13	-1%	18%
	Non-Geo	2%	30	0%	3%
Other	**All Industrial**	**7%**	**43**	**3%**	**11%**
	Geo	9%	13	2%	17%
	Non-Geo	7%	30	2%	11%
Unknown T8	**All Industrial**	**15%**	**43**	**8%**	**23%**
	Geo	19%	13	0%	39%
	Non-Geo	14%	30	6%	23%

B.1.2. Premise Weighted Results

Table B-2
Types of Indoor Lighting (Premise)

Light Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Incandescent	**All Industrial**	**15%**	**43**	**0%**	**31%**
	Geo	69%	13	39%	100%
	Non-Geo	3%	30	0%	5%
CFL	**All Industrial**	**18%**	**43**	**1%**	**35%**
	Geo	1%	13	0%	2%
	Non-Geo	22%	30	2%	42%
HID	**All Industrial**	**39%**	**43**	**19%**	**60%**
	Geo	3%	13	0%	5%
	Non-Geo	48%	30	24%	71%
T5	**All Industrial**	**20%**	**43**	**3%**	**37%**
	Geo	7%	13	-3%	18%
	Non-Geo	23%	30	3%	43%
Standard T8	**All Industrial**	**64%**	**43**	**43%**	**84%**
	Geo	97%	13	93%	100%
	Non-Geo	56%	30	32%	79%
High Performance T8	**All Industrial**	**3%**	**43**	**0%**	**6%**
	Geo	7%	13	-3%	18%
	Non-Geo	2%	30	0%	5%
T12	**All Industrial**	**57%**	**43**	**36%**	**77%**
	Geo	16%	13	-2%	35%
	Non-Geo	66%	30	46%	87%
Quartz	**All Industrial**	**4%**	**43**	**1%**	**7%**
	Geo	7%	13	-4%	17%
	Non-Geo	3%	30	0%	6%
Other Fluorescent	**All Industrial**	**18%**	**43**	**1%**	**35%**
	Geo	13%	13	-3%	29%
	Non-Geo	19%	30	-1%	39%
Unknown Fluorescent Tube	**All Industrial**	**16%**	**43**	**0%**	**32%**
	Geo	69%	13	38%	99%
	Non-Geo	4%	30	0%	7%
Other	**All Industrial**	**9%**	**43**	**4%**	**14%**
	Geo	20%	13	-2%	42%
	Non-Geo	6%	30	2%	11%
Unknown T8	**All Industrial**	**17%**	**43**	**0%**	**34%**
	Geo	2%	13	0%	4%
	Non-Geo	20%	30	0%	40%

B.2. Lighting Densities

Table B-3
Default Values Used For Missing Data

HID

	Magnetic	Electronic
Lamp Quantity per ballast	1	1
MH or HPS <=100W	90	NA
250W MH HID	295	270
320W MH HID	365	345
350W MH HID	400	375
400W MH HID	458	430
250W HPS HID	295	NA
310W HPS HID	365	NA
400W HPS HID	465	NA

Source: Efficiency Vermont Technical Reference User Manual No. 2008-53
Source: Advance Atlas 2008-2009, based on 277V systems

CFL

	Magnetic				Magnetic Energy Saving				Electronic			
Lamp Quantity per ballast	1	2	3	4	1	2	3	4	1	2	3	4
CFL <20W	15	35	NA	NA	NA	NA	NA	NA	14	27	NA	NA
CFL >=20W	29	50	NA	NA	NA	NA	NA	NA	27	51	NA	NA
Dimming CFL <20W	20	NA	NA	NA	NA	NA	NA	NA	18	33	86	112
Dimming CFL >=20W	25	NA	NA	NA	NA	NA	NA	NA	31	58	NA	NA

Source: Efficiency Vermont Technical Reference User Manual No. 2008-53
Source: Advance Atlas 2008-2009, based on 277V systems
Source: Advance Atlas 2008-2009, based on 277V systems (assumed 13W lamps for <20W and 26W lamps for >=20W)

Fluorescent

	Magnetic				Magnetic Energy Saving				Electronic			
Lamp Quantity per ballast	1	2	3	4	1	2	3	4	1	2	3	4
T5	NA	NA	NA	NA	NA	NA	NA	NA	32	64	96	128
T5HO	NA	NA	NA	NA	NA	NA	NA	NA	62	117	179	234
T8	41	76	NA	NA	NA	NA	NA	NA	29	55	86	112
HPT8	NA	NA	NA	NA	NA	NA	NA	NA	28	59	87	108
T10	53	88	NA	NA	NA	NA	NA	NA	35	71	112	NA
T12	50	86	NA	172	43	72	103	144	35	71	107	NA

Source: Efficiency Vermont Technical Reference User Manual No. 2008-53
Source: Advance Atlas 2008-2009, based on 277V systems
Average wattage based on CEE Approved ballasts

Operating Hours

Building Type	Annual Hours
Office	3435
Restaurant	4156
Retail	3068
Grocery/Supermarket	4612
Warehouse	2388
Elem/Sec School	2080
College	5010
Health	3392
Hospital	4532
Hotel/Motel	2697
Manufacturing	3500
Other/misc.	2278

Source: Efficiency Vermont Technical

Table B-4
Overall Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.76**	**43**	**0.64**	**0.88**
	Geo	0.84	13	0.77	0.91
	Non-Geo	0.74	30	0.59	0.89
Total Lighting kWh per Premise	**All Industrial**	**64,554,620**	**43**	**47,223,374**	**81,885,865**
	Geo	90,725,980	13	58,706,022	122,745,938
	Non-Geo	58,360,278	30	39,374,258	77,346,299
Watts per Fixture	**All Industrial**	**122.14**	**35**	**99.30**	**144.97**
	Geo	96.02	11	73.39	118.65
	Non-Geo	137.67	24	110.46	164.88

Table B-5
Incan Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.25**	**1**	**0.25**	**0.25**
	Geo	0.25	1	0.25	0.25
	Non-Geo	.	0	.	.
Total Lighting kWh per Premise	**All Industrial**	**858,000**	**1**	**858,000**	**858,000**
	Geo	858,000	1	858,000	858,000
	Non-Geo	.	0	.	.
Watts per Fixture	**All Industrial**	**75.00**	**1**	**75.00**	**75.00**
	Geo	75.00	1	75.00	75.00
	Non-Geo	.	0	.	.

Table B-6
CFL Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.09**	**2**	**0.04**	**0.13**
	Geo	.	0	.	.
	Non-Geo	0.09	2	0.04	0.13
Total Lighting kWh per Premise	**All Industrial**	**629,461**	**2**	**546,984**	**711,938**
	Geo	.	0	.	.
	Non-Geo	629,461	2	546,984	711,938
Watts per Fixture	**All Industrial**	**24.56**	**2**	**24.33**	**24.79**
	Geo	.	0	.	.
	Non-Geo	24.56	2	24.33	24.79

Table B-7
HID Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.45**	**9**	**0.36**	**0.53**
	Geo	0.47	3	0.28	0.66
	Non-Geo	0.44	6	0.34	0.53
Total Lighting kWh per Premise	**All Industrial**	**19,175,707**	**9**	**10,193,383**	**28,158,032**
	Geo	310,130,010	3	215,842,321	404,417,700
	Non-Geo	13,792,166	6	9,942,063	17,642,269
Watts per Fixture	**All Industrial**	**368.39**	**9**	**324.30**	**412.47**
	Geo	446.30	3	426.91	465.70
	Non-Geo	339.75	6	293.88	385.62

Table B-8
T5 Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.27**	**6**	**0.11**	**0.43**
	Geo	0.40	1	0.40	0.40
	Non-Geo	0.26	5	0.09	0.43
Total Lighting kWh per Premise	**All Industrial**	**25,592,535**	**6**	**4,393,016**	**46,792,054**
	Geo	54,247,864	1	54,247,864	54,247,864
	Non-Geo	23,641,105	5	2,617,724	44,664,486
Watts per Fixture	**All Industrial**	**241.03**	**6**	**172.26**	**309.80**
	Geo	252.72	1	252.72	252.72
	Non-Geo	239.93	5	164.75	315.10

Table B-9
Std T8 Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.56**	**24**	**0.43**	**0.70**
	Geo	0.62	8	0.47	0.78
	Non-Geo	0.51	16	0.32	0.71
Total Lighting kWh per Premise	**All Industrial**	**25,531,545**	**24**	**15,927,882**	**35,135,208**
	Geo	45,646,049	8	35,183,094	56,109,004
	Non-Geo	17,040,804	16	8,654,187	25,427,421
Watts per Fixture	**All Industrial**	**70.47**	**24**	**64.41**	**76.54**
	Geo	77.72	8	65.63	89.81
	Non-Geo	64.05	16	58.49	69.62

Table B-10
HP T8 Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.49**	**4**	**0.21**	**0.78**
	Geo	0.24	2	0.16	0.31
	Non-Geo	0.88	2	0.83	0.93
Total Lighting kWh per Premise	**All Industrial**	**73,979,140**	**4**	**(994,671)**	**148,952,950**
	Geo	39,227,183	2	12,177,578	66,276,788
	Non-Geo	101,699,032	2	(33,680,194)	237,078,259
Watts per Fixture	**All Industrial**	**112.06**	**4**	**94.63**	**129.49**
	Geo	109.28	2	98.23	120.33
	Non-Geo	113.21	2	89.54	136.88

Table B-11
Unk T8 Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.52**	**2**	**0.36**	**0.67**
	Geo	0.28	1	0.28	0.28
	Non-Geo	0.65	1	0.65	0.65
Total Lighting kWh per Premise	**All Industrial**	**73,447,545**	**2**	**47,946,630**	**98,948,460**
	Geo	232,895,520	1	232,895,520	232,895,520
	Non-Geo	58,464,806	1	58,464,806	58,464,806
Watts per Fixture	**All Industrial**	**131.90**	**2**	**130.59**	**133.20**
	Geo	135.72	1	135.72	135.72
	Non-Geo	131.04	1	131.04	131.04

Table B-12
T12 Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.30**	**17**	**0.16**	**0.44**
	Geo	0.24	5	0.18	0.29
	Non-Geo	0.31	12	0.14	0.48
Total Lighting kWh per Premise	**All Industrial**	**13,515,073**	**17**	**4,259,067**	**22,771,078**
	Geo	33,003,691	5	30,367,636	35,639,747
	Non-Geo	12,425,074	12	3,083,987	21,766,162
Watts per Fixture	**All Industrial**	**118.12**	**17**	**83.52**	**152.72**
	Geo	103.85	5	86.24	121.46
	Non-Geo	120.66	12	79.84	161.48

Table B-13
Unk FL Tube Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**2.13**	**2**	**2.05**	**2.20**
	Geo	2.17	1	2.17	2.17
	Non-Geo	1.72	1	1.72	1.72
Total Lighting kWh per Premise	**All Industrial**	**14,260,947**	**2**	**13,191,492**	**15,330,402**
	Geo	14,892,134	1	14,892,134	14,892,134
	Non-Geo	7,879,872	1	7,879,872	7,879,872
Watts per Fixture	**All Industrial**	**89.38**	**2**	**87.63**	**91.12**
	Geo	90.40	1	90.40	90.40
	Non-Geo	78.72	1	78.72	78.72

Table B-14
Other Fluor Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.91**	**4**	**(0.04)**	**1.86**
	Geo	0.06	2	0.04	0.09
	Non-Geo	1.28	2	(0.02)	2.59
Total Lighting kWh per Premise	**All Industrial**	**20,654,595**	**3**	**16,154,247**	**25,154,943**
	Geo	1,537,536	1	1,537,536	1,537,536
	Non-Geo	22,211,673	2	19,248,435	25,174,912
Watts per Fixture	**All Industrial**	**636.81**	**4**	**217.35**	**1,056.27**
	Geo	52.95	2	49.84	56.05
	Non-Geo	842.27	2	428.12	1,256.41

Table B-15
Other Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.00**	**5**	**0.00**	**0.00**
	Geo	0.00	3	0.00	0.01
	Non-Geo	0.00	2	0.00	0.00
Total Lighting kWh per Premise	**All Industrial**	**485,602**	**5**	**337,173**	**634,031**
	Geo	472,105	3	343,234	600,977
	Non-Geo	499,320	2	230,193	768,447
Watts per Fixture	**All Industrial**	**5.70**	**5**	**5.30**	**6.09**
	Geo	6.00	3	6.00	6.00
	Non-Geo	5.43	2	4.67	6.19

Table B-16
Quartz Light Density

Statistic	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Lighting Power Density (W/sqft)	**All Industrial**	**0.48**	**2**	**0.28**	**0.68**
	Geo	.	0	.	.
	Non-Geo	0.48	2	0.28	0.68
Total Lighting kWh per Premise	**All Industrial**	**2,548,975**	**2**	**235,849**	**4,862,101**
	Geo	.	0	.	.
	Non-Geo	2,548,975	2	235,849	4,862,101
Watts per Fixture	**All Industrial**	**95.37**	**2**	**88.35**	**102.39**
	Geo	.	0	.	.
	Non-Geo	95.37	2	88.35	102.39

B.3. Usage

B.3.1. Facility kWh Weighted Results

Table B-17
Overall Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**96%**	**35**	**94%**	**98%**
	Geo	97%	11	94%	99%
	Non-Geo	96%	24	93%	99%
Task	**All Industrial**	**1%**	**35**	**0%**	**1%**
	Geo	1%	11	0%	2%
	Non-Geo	0%	24	0%	1%
Exit	**All Industrial**	**1%**	**35**	**0%**	**1%**
	Geo	1%	11	0%	2%
	Non-Geo	0%	24	0%	1%
Display	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
Other	**All Industrial**	**0%**	**35**	**0%**	**1%**
	Geo	0%	11	0%	0%
	Non-Geo	1%	24	0%	1%
Unknown	**All Industrial**	**2%**	**35**	**0%**	**4%**
	Geo	1%	11	-1%	3%
	Non-Geo	3%	24	0%	6%

Table B-18
HID Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**95%**	**13**	**90%**	**100%**
	Geo	100%	3	100%	100%
	Non-Geo	91%	10	84%	99%
Task	**All Industrial**	**0%**	**13**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	10	0%	0%
Exit	**All Industrial**	**0%**	**13**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	10	0%	0%
Display	**All Industrial**	**0%**	**13**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	10	0%	0%
Other	**All Industrial**	**3%**	**13**	**-1%**	**6%**
	Geo	0%	3	0%	0%
	Non-Geo	4%	10	-2%	11%
Unknown	**All Industrial**	**2%**	**13**	**-1%**	**6%**
	Geo	0%	3	0%	0%
	Non-Geo	4%	10	-1%	9%

Table B-19
T5 Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**100%**	**6**	**100%**	**100%**
	Geo	100%	1	100%	100%
	Non-Geo	100%	5	100%	100%
Task	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Exit	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Display	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Other	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Unknown	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%

Table B-20
Standard T8 Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**96%**	**25**	**92%**	**100%**
	Geo	99%	8	98%	100%
	Non-Geo	94%	17	87%	101%
Task	**All Industrial**	**1%**	**25**	**0%**	**1%**
	Geo	1%	8	0%	2%
	Non-Geo	1%	17	0%	1%
Exit	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%
Display	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%
Other	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%
Unknown	**All Industrial**	**3%**	**25**	**-1%**	**8%**
	Geo	0%	8	0%	0%
	Non-Geo	5%	17	-2%	12%

Table B-21
High Performance T8 Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**100%**	**4**	**100%**	**100%**
	Geo	100%	2	100%	100%
	Non-Geo	100%	2	100%	100%
Task	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Exit	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Display	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Unknown	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

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Table B-22
Unknown T8 Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**88%**	**3**	**70%**	**105%**
	Geo	80%	2	51%	110%
	Non-Geo	100%	1	100%	100%
Task	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Exit	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Display	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Other	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Unknown	**All Industrial**	**12%**	**3**	**-5%**	**30%**
	Geo	20%	2	-10%	49%
	Non-Geo	0%	1	0%	0%

Table B-23
T12 Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**98%**	**18**	**97%**	**100%**
	Geo	98%	5	96%	100%
	Non-Geo	98%	13	96%	101%
Task	**All Industrial**	**1%**	**18**	**0%**	**1%**
	Geo	2%	5	0%	4%
	Non-Geo	0%	13	0%	0%
Exit	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	0%
	Non-Geo	0%	13	0%	0%
Display	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	0%
	Non-Geo	0%	13	0%	0%
Other	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	0%
	Non-Geo	0%	13	0%	0%
Unknown	**All Industrial**	**1%**	**18**	**0%**	**3%**
	Geo	0%	5	0%	0%
	Non-Geo	2%	13	-1%	4%

Table B-24
Unknown Fluorescent Tube Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**100%**	**4**	**100%**	**100%**
	Geo	100%	1	100%	100%
	Non-Geo	100%	3	100%	100%
Task	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Exit	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Display	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Unknown	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%

Table B-25
Other Fluorescent Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**80%**	**4**	**55%**	**104%**
	Geo	100%	2	100%	100%
	Non-Geo	55%	2	9%	101%
Task	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Exit	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Display	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**20%**	**4**	**-4%**	**45%**
	Geo	0%	2	0%	0%
	Non-Geo	45%	2	-1%	91%
Unknown	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

Table B-26
Other Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**79%**	**7**	**54%**	**103%**
	Geo	0%	4	0%	0%
	Non-Geo	91%	3	76%	105%
Task	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	3	0%	0%
Exit	**All Industrial**	**21%**	**7**	**-3%**	**46%**
	Geo	100%	4	100%	100%
	Non-Geo	9%	3	-5%	24%
Display	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	3	0%	0%
Other	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	3	0%	0%
Unknown	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	3	0%	0%

Table B-27
Quartz Light Usage (Facility kWh)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**78%**	**3**	**50%**	**107%**
	Geo	100%	1	100%	100%
	Non-Geo	0%	2	0%	0%
Task	**All Industrial**	**22%**	**3**	**-7%**	**50%**
	Geo	0%	1	0%	0%
	Non-Geo	100%	2	100%	100%
Exit	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Display	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Unknown	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%

B.3.2. Premise Weighted Results

Table B-28
Overall Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**97%**	**35**	**95%**	**98%**
	Geo	99%	11	97%	100%
	Non-Geo	96%	24	94%	98%
Task	**All Industrial**	**1%**	**35**	**0%**	**1%**
	Geo	0%	11	0%	0%
	Non-Geo	1%	24	0%	2%
Exit	**All Industrial**	**1%**	**35**	**0%**	**1%**
	Geo	1%	11	0%	2%
	Non-Geo	0%	24	0%	1%
Display	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
Other	**All Industrial**	**1%**	**35**	**0%**	**2%**
	Geo	0%	11	0%	0%
	Non-Geo	1%	24	0%	2%
Unknown	**All Industrial**	**1%**	**35**	**0%**	**2%**
	Geo	0%	11	0%	1%
	Non-Geo	1%	24	0%	3%

Table B-29
HID Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**94%**	**13**	**89%**	**100%**
	Geo	100%	3	100%	100%
	Non-Geo	94%	10	87%	100%
Task	**All Industrial**	**0%**	**13**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	10	0%	0%
Exit	**All Industrial**	**0%**	**13**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	10	0%	0%
Display	**All Industrial**	**0%**	**13**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	10	0%	0%
Other	**All Industrial**	**4%**	**13**	**-1%**	**9%**
	Geo	0%	3	0%	0%
	Non-Geo	5%	10	-1%	11%
Unknown	**All Industrial**	**1%**	**13**	**0%**	**3%**
	Geo	0%	3	0%	0%
	Non-Geo	2%	10	-1%	4%

Table B-30
T5 Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**100%**	**6**	**100%**	**100%**
	Geo	100%	1	100%	100%
	Non-Geo	100%	5	100%	100%
Task	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Exit	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Display	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Other	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Unknown	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%

Table B-31
Standard T8 Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**98%**	**25**	**97%**	**100%**
	Geo	100%	8	100%	100%
	Non-Geo	97%	17	94%	100%
Task	**All Industrial**	**1%**	**25**	**0%**	**2%**
	Geo	0%	8	0%	0%
	Non-Geo	1%	17	0%	3%
Exit	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%
Display	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%
Other	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%
Unknown	**All Industrial**	**1%**	**25**	**0%**	**2%**
	Geo	0%	8	0%	0%
	Non-Geo	2%	17	-1%	4%

Table B-32
High Performance T8 Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**100%**	**4**	**100%**	**100%**
	Geo	100%	2	100%	100%
	Non-Geo	100%	2	100%	100%
Task	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Exit	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Display	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Unknown	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

Table B-33
Unknown T8 Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**95%**	**3**	**88%**	**103%**
	Geo	79%	2	47%	110%
	Non-Geo	100%	1	100%	100%
Task	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Exit	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Display	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Other	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Unknown	**All Industrial**	**5%**	**3**	**-3%**	**12%**
	Geo	21%	2	-10%	53%
	Non-Geo	0%	1	0%	0%

Table B-34
T12 Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**99%**	**18**	**97%**	**100%**
	Geo	100%	5	99%	100%
	Non-Geo	99%	13	97%	101%
Task	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	1%
	Non-Geo	0%	13	0%	0%
Exit	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	0%
	Non-Geo	0%	13	0%	0%
Display	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	0%
	Non-Geo	0%	13	0%	0%
Other	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	0%
	Non-Geo	0%	13	0%	0%
Unknown	**All Industrial**	**1%**	**18**	**0%**	**3%**
	Geo	0%	5	0%	0%
	Non-Geo	1%	13	-1%	3%

Table B-35
Unknown Fluorescent Tube Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**100%**	**4**	**100%**	**100%**
	Geo	100%	1	100%	100%
	Non-Geo	100%	3	100%	100%
Task	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Exit	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Display	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Unknown	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%

Table B-36
Other Fluorescent Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
	Geo	#N/A	#N/A	#N/A	#N/A
	Non-Geo	#N/A	#N/A	#N/A	#N/A
Task	**All Industrial**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
	Geo	#N/A	#N/A	#N/A	#N/A
	Non-Geo	#N/A	#N/A	#N/A	#N/A
Exit	**All Industrial**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
	Geo	#N/A	#N/A	#N/A	#N/A
	Non-Geo	#N/A	#N/A	#N/A	#N/A
Display	**All Industrial**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
	Geo	#N/A	#N/A	#N/A	#N/A
	Non-Geo	#N/A	#N/A	#N/A	#N/A
Other	**All Industrial**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
	Geo	#N/A	#N/A	#N/A	#N/A
	Non-Geo	#N/A	#N/A	#N/A	#N/A
Unknown	**All Industrial**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
	Geo	#N/A	#N/A	#N/A	#N/A
	Non-Geo	#N/A	#N/A	#N/A	#N/A

Table B-37
Other Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**51%**	**7**	**15%**	**88%**
	Geo	0%	4	0%	0%
	Non-Geo	69%	3	34%	105%
Task	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	3	0%	0%
Exit	**All Industrial**	**49%**	**7**	**12%**	**85%**
	Geo	100%	4	100%	100%
	Non-Geo	31%	3	-5%	66%
Display	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	3	0%	0%
Other	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	3	0%	0%
Unknown	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	3	0%	0%

Table B-38
Quartz Light Usage (Premise)

Usage	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Area	**All Industrial**	**49%**	**3**	**6%**	**92%**
	Geo	100%	1	100%	100%
	Non-Geo	0%	2	0%	0%
Task	**All Industrial**	**51%**	**3**	**8%**	**94%**
	Geo	0%	1	0%	0%
	Non-Geo	100%	2	100%	100%
Exit	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Display	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Unknown	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%

B.4. Ballast Types

B.4.1. Facility kWh Weighted Results

Table B-39
Overall Light Ballast Types (Facility kWh)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**13%**	**35**	**6%**	**19%**
	Geo	19%	11	6%	32%
	Non-Geo	10%	24	2%	17%
Energy Saving Magnetic	**All Industrial**	**1%**	**35**	**0%**	**3%**
	Geo	4%	11	-1%	9%
	Non-Geo	0%	24	0%	0%
Electronic	**All Industrial**	**57%**	**35**	**42%**	**71%**
	Geo	52%	11	27%	77%
	Non-Geo	59%	24	42%	77%
Other	**All Industrial**	**0%**	**35**	**0%**	**1%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	1%
No Ballast	**All Industrial**	**29%**	**35**	**15%**	**43%**
	Geo	25%	11	2%	49%
	Non-Geo	30%	24	13%	48%
Unknown	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%

Table B-40
HID Light Ballast Types (Facility kWh)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**39%**	**13**	**12%**	**65%**
	Geo	87%	3	68%	106%
	Non-Geo	7%	10	0%	14%
Energy Saving Magnetic	**All Industrial**	**0%**	**13**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	10	0%	0%
Electronic	**All Industrial**	**2%**	**13**	**-1%**	**6%**
	Geo	0%	3	0%	0%
	Non-Geo	4%	10	-1%	9%
Other	**All Industrial**	**3%**	**13**	**-1%**	**8%**
	Geo	0%	3	0%	0%
	Non-Geo	5%	10	-2%	13%
No Ballast	**All Industrial**	**56%**	**13**	**30%**	**81%**
	Geo	13%	3	-6%	32%
	Non-Geo	83%	10	71%	96%
Unknown	**All Industrial**	**0%**	**13**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	10	0%	0%

Table B-41
T5 Light Ballast Types (Facility kWh)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Energy Saving Magnetic	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Electronic	**All Industrial**	**67%**	**6**	**40%**	**94%**
	Geo	100%	1	100%	100%
	Non-Geo	61%	5	30%	92%
Other	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
No Ballast	**All Industrial**	**33%**	**6**	**6%**	**60%**
	Geo	0%	1	0%	0%
	Non-Geo	39%	5	8%	70%
Unknown	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%

Table B-42
Standard T8 Light Ballast Types (Facility kWh)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	1%
	Non-Geo	0%	17	0%	0%
Energy Saving Magnetic	**All Industrial**	**0%**	**25**	**0%**	**1%**
	Geo	0%	8	0%	1%
	Non-Geo	0%	17	0%	0%
Electronic	**All Industrial**	**60%**	**25**	**35%**	**84%**
	Geo	65%	8	26%	104%
	Non-Geo	56%	17	27%	86%
Other	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%
No Ballast	**All Industrial**	**40%**	**25**	**16%**	**64%**
	Geo	34%	8	-5%	73%
	Non-Geo	44%	17	14%	73%
Unknown	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%

Table B-43
High Performance T8 Light Ballast Types (Facility kWh)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Energy Saving Magnetic	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Electronic	**All Industrial**	**100%**	**4**	**100%**	**100%**
	Geo	100%	2	100%	100%
	Non-Geo	100%	2	100%	100%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
No Ballast	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Unknown	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

Table B-44
Unknown T8 Light Ballast Types (Facility kWh)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Energy Saving Magnetic	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Electronic	**All Industrial**	**100%**	**3**	**100%**	**100%**
	Geo	100%	2	100%	100%
	Non-Geo	100%	1	100%	100%
Other	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
No Ballast	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Unknown	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%

Table B-45
T12 Light Ballast Types (Facility kWh)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**62%**	**18**	**39%**	**85%**
	Geo	75%	5	46%	104%
	Non-Geo	57%	13	27%	87%
Energy Saving Magnetic	**All Industrial**	**8%**	**18**	**-2%**	**18%**
	Geo	25%	5	-4%	54%
	Non-Geo	1%	13	0%	1%
Electronic	**All Industrial**	**24%**	**18**	**1%**	**47%**
	Geo	0%	5	0%	0%
	Non-Geo	34%	13	4%	65%
Other	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	0%
	Non-Geo	0%	13	0%	0%
No Ballast	**All Industrial**	**6%**	**18**	**1%**	**11%**
	Geo	0%	5	0%	0%
	Non-Geo	8%	13	1%	16%
Unknown	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	0%
	Non-Geo	0%	13	0%	0%

Table B-46
Other Fluorescent Light Ballast Types (Facility kWh)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Energy Saving Magnetic	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Electronic	**All Industrial**	**100%**	**4**	**100%**	**100%**
	Geo	100%	2	100%	100%
	Non-Geo	100%	2	100%	100%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
No Ballast	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Unknown	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

B.4.2. Premise Weighted Results

Table B-47
Overall Light Ballast Types (Premise)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**12%**	**35**	**4%**	**20%**
	Geo	8%	11	-1%	16%
	Non-Geo	15%	24	5%	25%
Energy Saving Magnetic	**All Industrial**	**0%**	**35**	**0%**	**1%**
	Geo	0%	11	0%	1%
	Non-Geo	1%	24	0%	1%
Electronic	**All Industrial**	**49%**	**35**	**30%**	**68%**
	Geo	24%	11	-1%	48%
	Non-Geo	64%	24	52%	77%
Other	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
No Ballast	**All Industrial**	**38%**	**35**	**15%**	**61%**
	Geo	69%	11	38%	99%
	Non-Geo	20%	24	9%	31%
Unknown	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%

Table B-48
HID Light Ballast Types (Premise)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**40%**	**13**	**18%**	**62%**
	Geo	86%	3	65%	106%
	Non-Geo	32%	10	9%	56%
Energy Saving Magnetic	**All Industrial**	**0%**	**13**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	10	0%	0%
Electronic	**All Industrial**	**1%**	**13**	**0%**	**3%**
	Geo	0%	3	0%	0%
	Non-Geo	2%	10	-1%	4%
Other	**All Industrial**	**2%**	**13**	**-1%**	**5%**
	Geo	0%	3	0%	0%
	Non-Geo	3%	10	-1%	6%
No Ballast	**All Industrial**	**56%**	**13**	**34%**	**78%**
	Geo	14%	3	-6%	35%
	Non-Geo	63%	10	40%	87%
Unknown	**All Industrial**	**0%**	**13**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	10	0%	0%

Table B-49
T5 Light Ballast Types (Premise)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Energy Saving Magnetic	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Electronic	**All Industrial**	**63%**	**6**	**31%**	**94%**
	Geo	100%	1	100%	100%
	Non-Geo	59%	5	25%	93%
Other	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
No Ballast	**All Industrial**	**37%**	**6**	**6%**	**69%**
	Geo	0%	1	0%	0%
	Non-Geo	41%	5	7%	75%
Unknown	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%

Table B-50
Standard T8 Light Ballast Types (Premise)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%
Energy Saving Magnetic	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	1%
Electronic	**All Industrial**	**62%**	**25**	**31%**	**93%**
	Geo	25%	8	-6%	56%
	Non-Geo	94%	17	88%	99%
Other	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%
No Ballast	**All Industrial**	**38%**	**25**	**7%**	**69%**
	Geo	75%	8	44%	106%
	Non-Geo	6%	17	0%	11%
Unknown	**All Industrial**	**0%**	**25**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	17	0%	0%

Table B-51
High Performance T8 Light Ballast Types (Premise)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Energy Saving Magnetic	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Electronic	**All Industrial**	**100%**	**4**	**100%**	**100%**
	Geo	100%	2	100%	100%
	Non-Geo	100%	2	100%	100%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
No Ballast	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Unknown	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

Table B-52
Unknown T8 Light Ballast Types (Premise)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Energy Saving Magnetic	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Electronic	**All Industrial**	**100%**	**3**	**100%**	**100%**
	Geo	100%	2	100%	100%
	Non-Geo	100%	1	100%	100%
Other	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
No Ballast	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%
Unknown	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	1	0%	0%

Table B-53
T12 Light Ballast Types (Premise)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**66%**	**18**	**43%**	**89%**
	Geo	97%	5	91%	102%
	Non-Geo	61%	13	33%	88%
Energy Saving Magnetic	**All Industrial**	**2%**	**18**	**0%**	**4%**
	Geo	3%	5	-2%	9%
	Non-Geo	2%	13	-1%	4%
Electronic	**All Industrial**	**18%**	**18**	**-2%**	**39%**
	Geo	0%	5	0%	0%
	Non-Geo	22%	13	-2%	45%
Other	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	0%
	Non-Geo	0%	13	0%	0%
No Ballast	**All Industrial**	**14%**	**18**	**2%**	**26%**
	Geo	0%	5	0%	0%
	Non-Geo	16%	13	1%	31%
Unknown	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	5	0%	0%
	Non-Geo	0%	13	0%	0%

Table B-54
Other Fluorescent Light Ballast Types (Premise)

Ballast Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Standard Magnetic	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Energy Saving Magnetic	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Electronic	**All Industrial**	**100%**	**4**	**100%**	**100%**
	Geo	100%	2	100%	100%
	Non-Geo	100%	2	100%	100%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
No Ballast	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Unknown	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

B.5. Control Types

B.5.1. Facility kWh Weighted Results

Table B-55
Overall Light Control Types (Facility kWh)

Control Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Manual On/Off Switch	**All Industrial**	**97%**	**35**	**95%**	**98%**
	Geo	95%	11	91%	99%
	Non-Geo	97%	24	96%	99%
Dimmer	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
Motion/Occupancy Sensor	**All Industrial**	**2%**	**35**	**1%**	**3%**
	Geo	4%	11	0%	7%
	Non-Geo	1%	24	0%	2%
Photocell	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
Timeclock	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
Photocell/Timeclock	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
Photocell with Dimming	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
EMS	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
None/Continuous	**All Industrial**	**1%**	**35**	**0%**	**1%**
	Geo	1%	11	0%	2%
	Non-Geo	0%	24	0%	1%
Other	**All Industrial**	**1%**	**35**	**0%**	**2%**
	Geo	0%	11	0%	0%
	Non-Geo	1%	24	0%	2%
Unknown	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%

B.5.2. Premise Weighted Results

Table B-56
Overall Light Control Types (Premise)

Control Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Manual On/Off Switch	**All Industrial**	**97%**	**35**	**96%**	**99%**
	Geo	97%	11	94%	101%
	Non-Geo	97%	24	96%	99%
Dimmer	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
Motion/Occupancy Sensor	**All Industrial**	**1%**	**35**	**0%**	**2%**
	Geo	2%	11	-1%	5%
	Non-Geo	0%	24	0%	0%
Photocell	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
Timeclock	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
Photocell/Timeclock	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
Photocell with Dimming	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
EMS	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%
None/Continuous	**All Industrial**	**1%**	**35**	**0%**	**1%**
	Geo	1%	11	0%	1%
	Non-Geo	0%	24	0%	1%
Other	**All Industrial**	**1%**	**35**	**0%**	**2%**
	Geo	0%	11	0%	0%
	Non-Geo	2%	24	0%	4%
Unknown	**All Industrial**	**0%**	**35**	**0%**	**0%**
	Geo	0%	11	0%	0%
	Non-Geo	0%	24	0%	0%

B.6. Energy Efficient Opportunities

B.6.1. Facility kWh Weighted Results

Table B-57
Overall EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**17%**	**43**	**3%**	**31%**
	Geo	21%	13	-2%	44%
	Non-Geo	16%	30	-1%	33%
Switch to Standard T8	**All Industrial**	**14%**	**43**	**6%**	**21%**
	Geo	21%	13	-2%	44%
	Non-Geo	12%	30	4%	19%
Switch to High Performance T8	**All Industrial**	**54%**	**43**	**40%**	**68%**
	Geo	76%	13	58%	94%
	Non-Geo	48%	30	32%	63%
Switch to T5	**All Industrial**	**21%**	**43**	**12%**	**30%**
	Geo	35%	13	12%	57%
	Non-Geo	17%	30	8%	26%
Switch to Pulse Start Metal Halide	**All Industrial**	**6%**	**43**	**1%**	**10%**
	Geo	0%	13	0%	0%
	Non-Geo	7%	30	2%	13%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**19%**	**43**	**9%**	**28%**
	Geo	28%	13	8%	48%
	Non-Geo	16%	30	6%	26%
Occupancy Sensors	**All Industrial**	**49%**	**43**	**36%**	**63%**
	Geo	76%	13	58%	94%
	Non-Geo	42%	30	27%	57%
Dimmers	**All Industrial**	**10%**	**43**	**4%**	**16%**
	Geo	15%	13	-3%	32%
	Non-Geo	9%	30	3%	15%
Other Controls	**All Industrial**	**2%**	**43**	**-1%**	**4%**
	Geo	8%	13	-2%	19%
	Non-Geo	0%	30	0%	0%
Other	**All Industrial**	**3%**	**43**	**0%**	**6%**
	Geo	0%	13	0%	0%
	Non-Geo	4%	30	0%	8%

Table B-58
Incandescent EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**75%**	**5**	**50%**	**100%**
	Geo	89%	2	71%	107%
	Non-Geo	70%	3	37%	104%
Switch to Standard T8	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Switch to T5	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Occupancy Sensors	**All Industrial**	**21%**	**5**	**-6%**	**47%**
	Geo	89%	2	71%	107%
	Non-Geo	0%	3	0%	0%
Dimmers	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Other Controls	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Other	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%

Table B-59
CFL EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to T5	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Occupancy Sensors	**All Industrial**	**21%**	**6**	**-3%**	**45%**
	Geo	0%	1	0%	0%
	Non-Geo	28%	5	-2%	57%
Dimmers	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Other Controls	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Other	**All Industrial**	**18%**	**6**	**-4%**	**40%**
	Geo	0%	1	0%	0%
	Non-Geo	24%	5	-3%	51%

Table B-60
HID EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	14	0%	0%
Switch to Standard T8	**All Industrial**	**4%**	**18**	**-1%**	**10%**
	Geo	0%	4	0%	0%
	Non-Geo	5%	14	-2%	12%
Switch to High Performance T8	**All Industrial**	**20%**	**18**	**4%**	**35%**
	Geo	33%	4	-3%	69%
	Non-Geo	17%	14	1%	34%
Switch to T5	**All Industrial**	**11%**	**18**	**3%**	**19%**
	Geo	19%	4	-2%	39%
	Non-Geo	10%	14	1%	19%
Switch to Pulse Start Metal Halide	**All Industrial**	**5%**	**18**	**-2%**	**12%**
	Geo	0%	4	0%	0%
	Non-Geo	6%	14	-2%	15%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**11%**	**18**	**-3%**	**24%**
	Geo	0%	4	0%	0%
	Non-Geo	13%	14	-3%	28%
Occupancy Sensors	**All Industrial**	**27%**	**18**	**10%**	**44%**
	Geo	51%	4	11%	91%
	Non-Geo	23%	14	5%	41%
Dimmers	**All Industrial**	**3%**	**18**	**0%**	**6%**
	Geo	0%	4	0%	0%
	Non-Geo	4%	14	0%	7%
Other Controls	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	14	0%	0%
Other	**All Industrial**	**5%**	**18**	**-2%**	**12%**
	Geo	0%	4	0%	0%
	Non-Geo	6%	14	-2%	15%

Table B-61
T5 EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to T5	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**6%**	**7**	**-2%**	**14%**
	Geo	0%	2	0%	0%
	Non-Geo	8%	5	-3%	18%
Occupancy Sensors	**All Industrial**	**36%**	**7**	**6%**	**65%**
	Geo	0%	2	0%	0%
	Non-Geo	46%	5	12%	79%
Dimmers	**All Industrial**	**6%**	**7**	**-2%**	**14%**
	Geo	0%	2	0%	0%
	Non-Geo	8%	5	-3%	18%
Other Controls	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Other	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%

Table B-62
St T8 EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**27**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	19	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**27**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	19	0%	0%
Switch to High Performance T8	**All Industrial**	**79%**	**27**	**64%**	**95%**
	Geo	88%	8	74%	103%
	Non-Geo	76%	19	56%	95%
Switch to T5	**All Industrial**	**17%**	**27**	**5%**	**28%**
	Geo	29%	8	-1%	58%
	Non-Geo	12%	19	3%	22%
Switch to Pulse Start Metal Halide	**All Industrial**	**2%**	**27**	**-1%**	**6%**
	Geo	0%	8	0%	0%
	Non-Geo	3%	19	-1%	8%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**22%**	**27**	**9%**	**35%**
	Geo	25%	8	1%	49%
	Non-Geo	21%	19	6%	36%
Occupancy Sensors	**All Industrial**	**63%**	**27**	**46%**	**79%**
	Geo	58%	8	29%	86%
	Non-Geo	65%	19	45%	84%
Dimmers	**All Industrial**	**16%**	**27**	**6%**	**26%**
	Geo	20%	8	-3%	43%
	Non-Geo	14%	19	4%	24%
Other Controls	**All Industrial**	**3%**	**27**	**-1%**	**7%**
	Geo	12%	8	-3%	26%
	Non-Geo	0%	19	0%	0%
Other	**All Industrial**	**1%**	**27**	**0%**	**2%**
	Geo	0%	8	0%	0%
	Non-Geo	1%	19	0%	3%

Table B-63
High Performance T8 EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to T5	**All Industrial**	**25%**	**4**	**-4%**	**54%**
	Geo	69%	2	29%	109%
	Non-Geo	0%	2	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Occupancy Sensors	**All Industrial**	**50%**	**4**	**15%**	**86%**
	Geo	69%	2	29%	109%
	Non-Geo	40%	2	-5%	85%
Dimmers	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Other Controls	**All Industrial**	**25%**	**4**	**-4%**	**54%**
	Geo	69%	2	29%	109%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

Table B-64
Unknown T8 EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Switch to High Performance T8	**All Industrial**	**9%**	**7**	**-1%**	**19%**
	Geo	17%	3	-7%	42%
	Non-Geo	7%	4	-3%	18%
Switch to T5	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Occupancy Sensors	**All Industrial**	**9%**	**7**	**-1%**	**19%**
	Geo	17%	3	-7%	42%
	Non-Geo	7%	4	-3%	18%
Dimmers	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Other Controls	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Other	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%

Table B-65
T12 EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**22**	**0%**	**0%**
	Geo	0%	7	0%	0%
	Non-Geo	0%	15	0%	0%
Switch to Standard T8	**All Industrial**	**14%**	**22**	**4%**	**23%**
	Geo	0%	7	0%	0%
	Non-Geo	17%	15	5%	30%
Switch to High Performance T8	**All Industrial**	**57%**	**22**	**36%**	**78%**
	Geo	66%	7	37%	95%
	Non-Geo	55%	15	30%	80%
Switch to T5	**All Industrial**	**20%**	**22**	**8%**	**32%**
	Geo	16%	7	-4%	37%
	Non-Geo	21%	15	7%	35%
Switch to Pulse Start Metal Halide	**All Industrial**	**4%**	**22**	**-1%**	**9%**
	Geo	0%	7	0%	0%
	Non-Geo	5%	15	-2%	11%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**12%**	**22**	**2%**	**22%**
	Geo	19%	7	-4%	41%
	Non-Geo	10%	15	0%	21%
Occupancy Sensors	**All Industrial**	**45%**	**22**	**26%**	**64%**
	Geo	66%	7	37%	95%
	Non-Geo	39%	15	17%	61%
Dimmers	**All Industrial**	**2%**	**22**	**-1%**	**6%**
	Geo	0%	7	0%	0%
	Non-Geo	3%	15	-1%	7%
Other Controls	**All Industrial**	**4%**	**22**	**-1%**	**8%**
	Geo	16%	7	-4%	37%
	Non-Geo	0%	15	0%	0%
Other	**All Industrial**	**0%**	**22**	**0%**	**0%**
	Geo	0%	7	0%	0%
	Non-Geo	0%	15	0%	0%

Table B-66
Unknown Fluorescent Tube EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Switch to Standard T8	**All Industrial**	**63%**	**4**	**27%**	**98%**
	Geo	100%	1	100%	100%
	Non-Geo	16%	3	-6%	37%
Switch to High Performance T8	**All Industrial**	**87%**	**4**	**68%**	**105%**
	Geo	100%	1	100%	100%
	Non-Geo	69%	3	33%	105%
Switch to T5	**All Industrial**	**63%**	**4**	**27%**	**98%**
	Geo	100%	1	100%	100%
	Non-Geo	16%	3	-6%	37%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Occupancy Sensors	**All Industrial**	**24%**	**4**	**-6%**	**53%**
	Geo	0%	1	0%	0%
	Non-Geo	54%	3	13%	94%
Dimmers	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Other Controls	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%

Table B-67
Other Fluorescent EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to High Performance T8	**All Industrial**	**12%**	**4**	**-4%**	**29%**
	Geo	0%	2	0%	0%
	Non-Geo	22%	2	-10%	54%
Switch to T5	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**28%**	**4**	**-4%**	**60%**
	Geo	63%	2	20%	107%
	Non-Geo	0%	2	0%	0%
Occupancy Sensors	**All Industrial**	**57%**	**4**	**19%**	**95%**
	Geo	100%	2	100%	100%
	Non-Geo	22%	2	-10%	54%
Dimmers	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Other Controls	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

Table B-68
Other Light Type EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Switch to T5	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Occupancy Sensors	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Dimmers	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Other Controls	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Other	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%

Table B-69
Quartz EE Opportunities (Facility kWh)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**25%**	**3**	**-7%**	**57%**
	Geo	0%	1	0%	0%
	Non-Geo	62%	2	19%	106%
Switch to Standard T8	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to T5	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Occupancy Sensors	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Dimmers	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Other Controls	**All Industrial**	**60%**	**3**	**21%**	**99%**
	Geo	100%	1	100%	100%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%

B.6.2. Premise Weighted Results

Table B-70
Overall EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**15%**	**43**	**-1%**	**31%**
	Geo	69%	13	38%	99%
	Non-Geo	2%	30	0%	5%
Switch to Standard T8	**All Industrial**	**33%**	**43**	**13%**	**53%**
	Geo	69%	13	38%	99%
	Non-Geo	24%	30	4%	45%
Switch to High Performance T8	**All Industrial**	**78%**	**43**	**61%**	**95%**
	Geo	97%	13	95%	100%
	Non-Geo	73%	30	53%	93%
Switch to T5	**All Industrial**	**37%**	**43**	**17%**	**58%**
	Geo	76%	13	52%	101%
	Non-Geo	28%	30	8%	49%
Switch to Pulse Start Metal Halide	**All Industrial**	**3%**	**43**	**0%**	**6%**
	Geo	0%	13	0%	0%
	Non-Geo	4%	30	0%	7%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**36%**	**43**	**16%**	**57%**
	Geo	8%	13	-3%	19%
	Non-Geo	43%	30	19%	67%
Occupancy Sensors	**All Industrial**	**74%**	**43**	**56%**	**91%**
	Geo	97%	13	95%	100%
	Non-Geo	68%	30	47%	89%
Dimmers	**All Industrial**	**8%**	**43**	**3%**	**13%**
	Geo	7%	13	-4%	17%
	Non-Geo	9%	30	3%	14%
Other Controls	**All Industrial**	**1%**	**43**	**0%**	**3%**
	Geo	7%	13	-4%	17%
	Non-Geo	0%	30	0%	0%
Other	**All Industrial**	**3%**	**43**	**0%**	**5%**
	Geo	0%	13	0%	0%
	Non-Geo	3%	30	0%	6%

Table B-71
Incandescent EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**88%**	**5**	**71%**	**105%**
	Geo	99%	2	97%	101%
	Non-Geo	20%	3	-7%	47%
Switch to Standard T8	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Switch to T5	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Occupancy Sensors	**All Industrial**	**85%**	**5**	**66%**	**105%**
	Geo	99%	2	97%	101%
	Non-Geo	0%	3	0%	0%
Dimmers	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Other Controls	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%
Other	**All Industrial**	**0%**	**5**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	3	0%	0%

Table B-72
CFL EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to T5	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Occupancy Sensors	**All Industrial**	**80%**	**6**	**56%**	**104%**
	Geo	0%	1	0%	0%
	Non-Geo	80%	5	57%	104%
Dimmers	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Other Controls	**All Industrial**	**0%**	**6**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	5	0%	0%
Other	**All Industrial**	**7%**	**6**	**-4%**	**19%**
	Geo	0%	1	0%	0%
	Non-Geo	7%	5	-5%	19%

Table B-73
HID EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	14	0%	0%
Switch to Standard T8	**All Industrial**	**1%**	**18**	**-1%**	**3%**
	Geo	0%	4	0%	0%
	Non-Geo	1%	14	-1%	3%
Switch to High Performance T8	**All Industrial**	**41%**	**18**	**6%**	**75%**
	Geo	25%	4	-4%	54%
	Non-Geo	41%	14	6%	76%
Switch to T5	**All Industrial**	**6%**	**18**	**0%**	**12%**
	Geo	50%	4	17%	83%
	Non-Geo	6%	14	0%	12%
Switch to Pulse Start Metal Halide	**All Industrial**	**3%**	**18**	**-1%**	**8%**
	Geo	0%	4	0%	0%
	Non-Geo	3%	14	-2%	8%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**36%**	**18**	**1%**	**71%**
	Geo	0%	4	0%	0%
	Non-Geo	37%	14	1%	72%
Occupancy Sensors	**All Industrial**	**43%**	**18**	**8%**	**77%**
	Geo	75%	4	46%	104%
	Non-Geo	42%	14	7%	77%
Dimmers	**All Industrial**	**7%**	**18**	**-1%**	**14%**
	Geo	0%	4	0%	0%
	Non-Geo	7%	14	-1%	14%
Other Controls	**All Industrial**	**0%**	**18**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	14	0%	0%
Other	**All Industrial**	**3%**	**18**	**-1%**	**8%**
	Geo	0%	4	0%	0%
	Non-Geo	3%	14	-2%	8%

Table B-74
T5 EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to T5	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**7%**	**7**	**-4%**	**17%**
	Geo	0%	2	0%	0%
	Non-Geo	7%	5	-4%	18%
Occupancy Sensors	**All Industrial**	**78%**	**7**	**54%**	**102%**
	Geo	0%	2	0%	0%
	Non-Geo	84%	5	64%	104%
Dimmers	**All Industrial**	**7%**	**7**	**-4%**	**17%**
	Geo	0%	2	0%	0%
	Non-Geo	7%	5	-4%	18%
Other Controls	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%
Other	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	5	0%	0%

Table B-75
St T8 EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**27**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	19	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**27**	**0%**	**0%**
	Geo	0%	8	0%	0%
	Non-Geo	0%	19	0%	0%
Switch to High Performance T8	**All Industrial**	**95%**	**27**	**90%**	**99%**
	Geo	93%	8	83%	104%
	Non-Geo	95%	19	90%	100%
Switch to T5	**All Industrial**	**25%**	**27**	**2%**	**48%**
	Geo	71%	8	41%	101%
	Non-Geo	7%	19	0%	13%
Switch to Pulse Start Metal Halide	**All Industrial**	**1%**	**27**	**0%**	**2%**
	Geo	0%	8	0%	0%
	Non-Geo	1%	19	0%	2%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**33%**	**27**	**8%**	**57%**
	Geo	7%	8	-3%	18%
	Non-Geo	43%	19	13%	73%
Occupancy Sensors	**All Industrial**	**68%**	**27**	**44%**	**91%**
	Geo	22%	8	-2%	45%
	Non-Geo	87%	19	76%	97%
Dimmers	**All Industrial**	**9%**	**27**	**2%**	**15%**
	Geo	7%	8	-4%	17%
	Non-Geo	10%	19	1%	18%
Other Controls	**All Industrial**	**2%**	**27**	**-1%**	**5%**
	Geo	7%	8	-4%	17%
	Non-Geo	0%	19	0%	0%
Other	**All Industrial**	**2%**	**27**	**-1%**	**5%**
	Geo	0%	8	0%	0%
	Non-Geo	3%	19	-1%	7%

Table B-76
High Performance T8 EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to T5	**All Industrial**	**40%**	**4**	**1%**	**80%**
	Geo	91%	2	76%	106%
	Non-Geo	0%	2	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Occupancy Sensors	**All Industrial**	**82%**	**4**	**61%**	**103%**
	Geo	91%	2	76%	106%
	Non-Geo	75%	2	40%	110%
Dimmers	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Other Controls	**All Industrial**	**40%**	**4**	**1%**	**80%**
	Geo	91%	2	76%	106%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

Table B-77
Unknown T8 EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Switch to High Performance T8	**All Industrial**	**9%**	**7**	**-5%**	**22%**
	Geo	33%	3	-2%	69%
	Non-Geo	8%	4	-5%	21%
Switch to T5	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Occupancy Sensors	**All Industrial**	**9%**	**7**	**-5%**	**22%**
	Geo	33%	3	-2%	69%
	Non-Geo	8%	4	-5%	21%
Dimmers	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Other Controls	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%
Other	**All Industrial**	**0%**	**7**	**0%**	**0%**
	Geo	0%	3	0%	0%
	Non-Geo	0%	4	0%	0%

Table B-78
T12 EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**22**	**0%**	**0%**
	Geo	0%	7	0%	0%
	Non-Geo	0%	15	0%	0%
Switch to Standard T8	**All Industrial**	**34%**	**22**	**7%**	**61%**
	Geo	0%	7	0%	0%
	Non-Geo	36%	15	7%	65%
Switch to High Performance T8	**All Industrial**	**93%**	**22**	**88%**	**99%**
	Geo	92%	7	83%	101%
	Non-Geo	94%	15	88%	99%
Switch to T5	**All Industrial**	**37%**	**22**	**10%**	**64%**
	Geo	40%	7	2%	79%
	Non-Geo	37%	15	8%	66%
Switch to Pulse Start Metal Halide	**All Industrial**	**2%**	**22**	**-1%**	**6%**
	Geo	0%	7	0%	0%
	Non-Geo	2%	15	-1%	6%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**27%**	**22**	**0%**	**55%**
	Geo	4%	7	-2%	10%
	Non-Geo	29%	15	0%	57%
Occupancy Sensors	**All Industrial**	**84%**	**22**	**72%**	**95%**
	Geo	92%	7	83%	101%
	Non-Geo	83%	15	71%	95%
Dimmers	**All Industrial**	**1%**	**22**	**0%**	**2%**
	Geo	0%	7	0%	0%
	Non-Geo	1%	15	0%	2%
Other Controls	**All Industrial**	**2%**	**22**	**-1%**	**5%**
	Geo	40%	7	2%	79%
	Non-Geo	0%	15	0%	0%
Other	**All Industrial**	**0%**	**22**	**0%**	**0%**
	Geo	0%	7	0%	0%
	Non-Geo	0%	15	0%	0%

Table B-79
Unknown Fluorescent Tube EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Switch to Standard T8	**All Industrial**	**89%**	**4**	**74%**	**105%**
	Geo	100%	1	100%	100%
	Non-Geo	43%	3	2%	84%
Switch to High Performance T8	**All Industrial**	**92%**	**4**	**79%**	**105%**
	Geo	100%	1	100%	100%
	Non-Geo	57%	3	16%	98%
Switch to T5	**All Industrial**	**89%**	**4**	**74%**	**105%**
	Geo	100%	1	100%	100%
	Non-Geo	43%	3	2%	84%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Occupancy Sensors	**All Industrial**	**3%**	**4**	**-2%**	**7%**
	Geo	0%	1	0%	0%
	Non-Geo	14%	3	-5%	34%
Dimmers	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Other Controls	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	3	0%	0%

Table B-80
Other Fluorescent EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to High Performance T8	**All Industrial**	**7%**	**4**	**-4%**	**19%**
	Geo	0%	2	0%	0%
	Non-Geo	8%	2	-6%	23%
Switch to T5	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**7%**	**4**	**-4%**	**18%**
	Geo	50%	2	3%	97%
	Non-Geo	0%	2	0%	0%
Occupancy Sensors	**All Industrial**	**21%**	**4**	**-4%**	**47%**
	Geo	100%	2	100%	100%
	Non-Geo	8%	2	-6%	23%
Dimmers	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Other Controls	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**0%**	**4**	**0%**	**0%**
	Geo	0%	2	0%	0%
	Non-Geo	0%	2	0%	0%

Table B-81
Other Light Type EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Switch to Standard T8	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Switch to T5	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Occupancy Sensors	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Dimmers	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Other Controls	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%
Other	**All Industrial**	**0%**	**10**	**0%**	**0%**
	Geo	0%	4	0%	0%
	Non-Geo	0%	6	0%	0%

Table B-82
Quartz EE Opportunities (Premise)

Energy Efficiency Opportunity	Area	Minimum Percent of Premises with Opportunity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Switch to CFL	**All Industrial**	**34%**	**3**	**-2%**	**70%**
	Geo	0%	1	0%	0%
	Non-Geo	50%	2	3%	97%
Switch to Standard T8	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to High Performance T8	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to T5	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Switch to Pulse Start Metal Halide	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Replace Ballasts for Automatic Daylighting	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Occupancy Sensors	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Dimmers	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%
Other Controls	**All Industrial**	**33%**	**3**	**-3%**	**68%**
	Geo	100%	1	100%	100%
	Non-Geo	0%	2	0%	0%
Other	**All Industrial**	**0%**	**3**	**0%**	**0%**
	Geo	0%	1	0%	0%
	Non-Geo	0%	2	0%	0%

Appendix C: Motors

C.1. Premise Weighted Results

C.1.1. Motor Details

Table C-1
Motors by Size Category

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1-5 hp	**All Industrial**	**62.8%**	**43**	**55.3%**	**70.3%**
	Geo	68.3%	14	65.2%	71.3%
	Non-Geo	58.7%	29	47.5%	69.8%
6-20 hp	**All Industrial**	**23.5%**	**43**	**18.5%**	**28.5%**
	Geo	28.0%	14	26.0%	29.9%
	Non-Geo	20.2%	29	12.2%	28.2%
21-50 hp	**All Industrial**	**5.0%**	**43**	**2.1%**	**7.8%**
	Geo	1.4%	14	-0.3%	3.0%
	Non-Geo	7.7%	29	4.5%	10.9%
51-100 hp	**All Industrial**	**1.7%**	**43**	**1.2%**	**2.1%**
	Geo	2.0%	14	1.6%	2.3%
	Non-Geo	1.5%	29	0.7%	2.2%
101-200 hp	**All Industrial**	**0.5%**	**43**	**0.2%**	**0.8%**
	Geo	0.3%	14	-0.1%	0.6%
	Non-Geo	0.7%	29	0.3%	1.1%
201-500 hp	**All Industrial**	**0.1%**	**43**	**0.0%**	**0.2%**
	Geo	0.1%	14	0.0%	0.2%
	Non-Geo	0.1%	29	0.0%	0.2%
501-1000 hp	**All Industrial**	**0.0%**	**43**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.1%
	Non-Geo	0.0%	29	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**0.0%**	**43**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.1%
	Non-Geo	0.0%	29	0.0%	0.0%

Table C-2
Motor Horespower by Size Category

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1-5 hp	**All Industrial**	**19.5%**	**43**	**15.2%**	**23.9%**
	Geo	22.1%	14	15.2%	28.9%
	Non-Geo	17.9%	29	13.2%	22.7%
6-20 hp	**All Industrial**	**33.3%**	**43**	**25.4%**	**41.3%**
	Geo	40.9%	14	29.6%	52.2%
	Non-Geo	28.5%	29	19.8%	37.3%
21-50 hp	**All Industrial**	**18.9%**	**43**	**10.8%**	**27.0%**
	Geo	5.5%	14	-0.1%	11.2%
	Non-Geo	27.4%	29	19.4%	35.3%
51-100 hp	**All Industrial**	**14.5%**	**43**	**10.9%**	**18.1%**
	Geo	17.1%	14	13.0%	21.2%
	Non-Geo	12.8%	29	8.1%	17.6%
101-200 hp	**All Industrial**	**8.4%**	**43**	**4.4%**	**12.4%**
	Geo	4.6%	14	0.0%	9.2%
	Non-Geo	10.8%	29	5.9%	15.7%
201-500 hp	**All Industrial**	**3.1%**	**43**	**0.8%**	**5.4%**
	Geo	4.0%	14	-1.0%	9.0%
	Non-Geo	2.6%	29	-0.1%	5.2%
501-1000 hp	**All Industrial**	**0.9%**	**43**	**-0.3%**	**2.2%**
	Geo	2.4%	14	-1.3%	6.1%
	Non-Geo	0.0%	29	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**1.3%**	**43**	**-0.4%**	**3.1%**
	Geo	3.4%	14	-1.8%	8.6%
	Non-Geo	0.0%	29	0.0%	0.0%

Table C-3
NEMA Motor HP as a Percent of Total Motor HP by Size Category

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
ALL	**All Industrial**	**10.3%**	**29**	**1.1%**	**19.5%**
	Geo	1.8%	14	-0.2%	3.8%
	Non-Geo	7.0%	43	0.9%	13.1%
1-5 hp	**All Industrial**	**0.5%**	**29**	**0.2%**	**0.9%**
	Geo	0.2%	14	-0.1%	0.6%
	Non-Geo	0.4%	43	0.2%	0.7%
6-20 hp	**All Industrial**	**2.5%**	**29**	**0.6%**	**4.3%**
	Geo	0.3%	14	-0.1%	0.7%
	Non-Geo	1.7%	43	0.4%	2.9%
21-50 hp	**All Industrial**	**6.8%**	**29**	**-0.7%**	**14.2%**
	Geo	0.3%	14	0.0%	0.5%
	Non-Geo	4.2%	43	-0.6%	9.0%
51-100 hp	**All Industrial**	**0.1%**	**29**	**0.0%**	**0.3%**
	Geo	0.7%	14	-0.3%	1.8%
	Non-Geo	0.4%	43	0.0%	0.7%
101-200 hp	**All Industrial**	**0.4%**	**29**	**-0.1%**	**0.9%**
	Geo	0.2%	14	-0.2%	0.7%
	Non-Geo	0.3%	43	0.0%	0.7%
201-500 hp	**All Industrial**	**0.0%**	**29**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.0%	43	0.0%	0.0%
501-1000 hp	**All Industrial**	**0.0%**	**29**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.0%	43	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**0.0%**	**29**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.0%	43	0.0%	0.0%

Table C-4
NEMA Motor HP as a Percent of Size Category HP

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1-5 hp	**All Industrial**	**3.7%**	**36**	**1.7%**	**5.8%**
	Geo	5.8%	12	-0.2%	11.9%
	Non-Geo	3.4%	24	1.2%	5.6%
6-20 hp	**All Industrial**	**12.5%**	**34**	**3.2%**	**21.7%**
	Geo	3.8%	12	0.7%	6.9%
	Non-Geo	15.4%	22	2.6%	28.3%
21-50 hp	**All Industrial**	**27.4%**	**30**	**6.1%**	**48.7%**
	Geo	4.6%	10	1.3%	7.9%
	Non-Geo	31.0%	20	7.4%	54.7%
51-100 hp	**All Industrial**	**2.9%**	**16**	**-0.3%**	**6.0%**
	Geo	4.3%	9	-2.7%	11.3%
	Non-Geo	1.4%	7	-0.9%	3.6%
101-200 hp	**All Industrial**	**4.9%**	**14**	**-0.5%**	**10.3%**
	Geo	5.3%	8	-3.1%	13.8%
	Non-Geo	4.7%	6	-3.0%	12.5%
201-500 hp	**All Industrial**	**0.0%**	**5**	**0.0%**	**0.0%**
	Geo	0.0%	3	0.0%	0.0%
	Non-Geo	0.0%	2	0.0%	0.0%
501-1000 hp	**All Industrial**	**0.0%**	**1**	**.**	**.**
	Geo	0.0%	1	.	.
	Non-Geo	0.0%	0	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**0.0%**	**1**	**.**	**.**
	Geo	0.0%	1	.	.
	Non-Geo	0.0%	0	0.0%	0.0%

Table C-5
NEMA Motor HP by Size Category

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1-5 hp	**All Industrial**	**5.9%**	**43**	**0.1%**	**11.8%**
	Geo	13.1%	14	1.8%	24.4%
	Non-Geo	5.1%	29	-0.7%	11.0%
6-20 hp	**All Industrial**	**23.6%**	**43**	**18.3%**	**28.9%**
	Geo	18.4%	14	8.4%	28.5%
	Non-Geo	24.2%	29	17.9%	30.4%
21-50 hp	**All Industrial**	**60.4%**	**43**	**41.8%**	**79.0%**
	Geo	14.1%	14	9.0%	19.1%
	Non-Geo	65.5%	29	49.4%	81.7%
51-100 hp	**All Industrial**	**5.3%**	**43**	**-1.0%**	**11.6%**
	Geo	40.7%	14	13.4%	68.0%
	Non-Geo	1.4%	29	-0.8%	3.5%
101-200 hp	**All Industrial**	**4.8%**	**43**	**-1.3%**	**10.9%**
	Geo	13.7%	14	-3.2%	30.5%
	Non-Geo	3.8%	29	-2.3%	9.8%
201-500 hp	**All Industrial**	**0.0%**	**43**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.0%	29	0.0%	0.0%
501-1000 hp	**All Industrial**	**0.0%**	**43**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.0%	29	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**0.0%**	**43**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.0%	29	0.0%	0.0%

Table C-6
Variable Load HP as a Percent of Total HP

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
ALL	**All Industrial**	**40.6%**	**43**	**26.1%**	**55.0%**
	Geo	66.0%	14	52.4%	79.6%
	Non-Geo	24.4%	29	15.7%	33.1%
1-5 hp	**All Industrial**	**9.4%**	**43**	**3.0%**	**15.8%**
	Geo	18.5%	14	9.0%	28.0%
	Non-Geo	3.6%	29	2.2%	5.0%
6-20 hp	**All Industrial**	**18.7%**	**43**	**7.8%**	**29.6%**
	Geo	34.8%	14	19.2%	50.4%
	Non-Geo	8.5%	29	4.5%	12.5%
21-50 hp	**All Industrial**	**2.4%**	**43**	**1.3%**	**3.5%**
	Geo	1.5%	14	-0.1%	3.1%
	Non-Geo	3.0%	29	1.8%	4.2%
51-100 hp	**All Industrial**	**3.5%**	**43**	**1.2%**	**5.8%**
	Geo	1.8%	14	0.2%	3.4%
	Non-Geo	4.6%	29	1.3%	8.0%
101-200 hp	**All Industrial**	**2.5%**	**43**	**0.7%**	**4.4%**
	Geo	2.1%	14	-0.5%	4.8%
	Non-Geo	2.8%	29	0.2%	5.4%
201-500 hp	**All Industrial**	**1.7%**	**43**	**0.0%**	**3.5%**
	Geo	1.4%	14	-0.8%	3.6%
	Non-Geo	1.9%	29	-0.6%	4.5%
501-1000 hp	**All Industrial**	**0.9%**	**43**	**-0.3%**	**2.2%**
	Geo	2.4%	14	-1.3%	6.1%
	Non-Geo	0.0%	29	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**1.3%**	**43**	**-0.4%**	**3.1%**
	Geo	3.4%	14	-1.8%	8.6%
	Non-Geo	0.0%	29	0.0%	0.0%

Table C-7
Variable Load HP as a Percent of Size Category HP

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1-5 hp	**All Industrial**	**50.7%**	**40**	**25.1%**	**76.3%**
	Geo	87.4%	13	71.3%	103.5%
	Non-Geo	21.3%	27	15.5%	27.1%
6-20 hp	**All Industrial**	**69.0%**	**37**	**49.0%**	**89.0%**
	Geo	88.2%	13	73.0%	103.4%
	Non-Geo	44.1%	24	31.4%	56.7%
21-50 hp	**All Industrial**	**14.9%**	**31**	**7.6%**	**22.2%**
	Geo	41.7%	10	27.9%	55.5%
	Non-Geo	12.4%	21	5.4%	19.4%
51-100 hp	**All Industrial**	**27.8%**	**18**	**7.6%**	**48.0%**
	Geo	10.7%	10	-0.5%	21.8%
	Non-Geo	46.3%	8	15.3%	77.3%
101-200 hp	**All Industrial**	**35.9%**	**16**	**14.8%**	**57.0%**
	Geo	45.9%	8	12.7%	79.2%
	Non-Geo	32.5%	8	4.1%	60.8%
201-500 hp	**All Industrial**	**63.2%**	**4**	**28.6%**	**97.7%**
	Geo	35.4%	3	6.3%	64.6%
	Non-Geo	100.0%	1	.	.
501-1000 hp	**All Industrial**	**100.0%**	**1**	**.**	**.**
	Geo	100.0%	1	.	.
	Non-Geo	0.0%	0	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**100.0%**	**1**	**.**	**.**
	Geo	100.0%	1	.	.
	Non-Geo	0.0%	0	0.0%	0.0%

Table C-8
Variable Load HP by Size Category

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1-5 hp	**All Industrial**	**23.1%**	**43**	**14.3%**	**31.9%**
	Geo	28.1%	14	18.6%	37.5%
	Non-Geo	14.7%	29	9.3%	20.0%
6-20 hp	**All Industrial**	**46.2%**	**43**	**33.6%**	**58.7%**
	Geo	52.8%	14	38.3%	67.2%
	Non-Geo	34.9%	29	24.3%	45.4%
21-50 hp	**All Industrial**	**5.9%**	**43**	**1.8%**	**10.1%**
	Geo	2.2%	14	-0.5%	5.0%
	Non-Geo	12.3%	29	7.4%	17.1%
51-100 hp	**All Industrial**	**8.7%**	**43**	**1.8%**	**15.7%**
	Geo	2.8%	14	-0.1%	5.6%
	Non-Geo	19.0%	29	9.7%	28.4%
101-200 hp	**All Industrial**	**6.2%**	**43**	**0.7%**	**11.7%**
	Geo	3.2%	14	-1.2%	7.6%
	Non-Geo	11.4%	29	1.5%	21.2%
201-500 hp	**All Industrial**	**4.2%**	**43**	**-0.5%**	**9.0%**
	Geo	2.1%	14	-1.4%	5.7%
	Non-Geo	7.8%	29	-1.9%	17.6%
501-1000 hp	**All Industrial**	**2.3%**	**43**	**-0.9%**	**5.5%**
	Geo	3.7%	14	-2.4%	9.7%
	Non-Geo	0.0%	29	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**3.3%**	**43**	**-1.3%**	**7.8%**
	Geo	5.1%	14	-3.3%	13.6%
	Non-Geo	0.0%	29	0.0%	0.0%

Table C-9
VFD Motor HP as a Percent of Total HP

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
ALL	**All Industrial**	**13.8%**	**43**	**5.7%**	**21.9%**
	Geo	11.2%	14	-3.2%	25.7%
	Non-Geo	15.4%	29	6.1%	24.8%
1-5 hp	**All Industrial**	**0.9%**	**43**	**0.4%**	**1.4%**
	Geo	0.6%	14	-0.1%	1.4%
	Non-Geo	1.0%	29	0.4%	1.7%
6-20 hp	**All Industrial**	**6.0%**	**43**	**1.6%**	**10.4%**
	Geo	0.3%	14	0.0%	0.7%
	Non-Geo	9.6%	29	3.4%	15.7%
21-50 hp	**All Industrial**	**1.6%**	**43**	**0.7%**	**2.5%**
	Geo	1.5%	14	-0.5%	3.5%
	Non-Geo	1.7%	29	0.8%	2.6%
51-100 hp	**All Industrial**	**2.0%**	**43**	**0.1%**	**3.9%**
	Geo	0.1%	14	0.0%	0.3%
	Non-Geo	3.2%	29	0.4%	6.0%
101-200 hp	**All Industrial**	**0.0%**	**43**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.0%	29	0.0%	0.0%
201-500 hp	**All Industrial**	**1.1%**	**43**	**-0.4%**	**2.6%**
	Geo	2.8%	14	-1.5%	7.2%
	Non-Geo	0.0%	29	0.0%	0.0%
501-1000 hp	**All Industrial**	**0.9%**	**43**	**-0.3%**	**2.2%**
	Geo	2.4%	14	-1.3%	6.1%
	Non-Geo	0.0%	29	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**1.3%**	**43**	**-0.4%**	**3.1%**
	Geo	3.4%	14	-1.8%	8.6%
	Non-Geo	0.0%	29	0.0%	0.0%

Table C-10
VFD Motor HP as a Percent of Size Category HP

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1-5 hp	**All Industrial**	**4.6%**	**41**	**1.4%**	**7.9%**
	Geo	2.9%	14	-1.2%	7.0%
	Non-Geo	6.0%	27	1.9%	10.1%
6-20 hp	**All Industrial**	**21.6%**	**38**	**3.3%**	**39.9%**
	Geo	0.8%	14	-0.3%	1.8%
	Non-Geo	49.6%	24	27.4%	71.8%
21-50 hp	**All Industrial**	**9.4%**	**31**	**3.5%**	**15.3%**
	Geo	27.0%	11	0.5%	53.4%
	Non-Geo	6.9%	20	1.8%	11.9%
51-100 hp	**All Industrial**	**15.7%**	**18**	**0.1%**	**31.3%**
	Geo	0.8%	10	-0.4%	1.9%
	Non-Geo	31.9%	8	5.1%	58.6%
101-200 hp	**All Industrial**	**0.0%**	**16**	**0.0%**	**0.0%**
	Geo	0.0%	8	0.0%	0.0%
	Non-Geo	0.0%	8	0.0%	0.0%
201-500 hp	**All Industrial**	**40.4%**	**4**	**-16.5%**	**97.3%**
	Geo	70.9%	3	12.5%	129.3%
	Non-Geo	0.0%	1	.	.
501-1000 hp	**All Industrial**	**100.0%**	**1**	**.**	**.**
	Geo	100.0%	1	.	.
	Non-Geo	0.0%	0	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**100.0%**	**1**	**.**	**.**
	Geo	100.0%	1	.	.
	Non-Geo	0.0%	0	0.0%	0.0%

Table C-11
VFD Motor HP by Size Category

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1-5 hp	**All Industrial**	**6.3%**	**43**	**1.7%**	**10.9%**
	Geo	5.7%	14	-1.5%	12.9%
	Non-Geo	6.6%	29	0.5%	12.7%
6-20 hp	**All Industrial**	**43.3%**	**43**	**24.9%**	**61.7%**
	Geo	2.8%	14	-0.5%	6.2%
	Non-Geo	62.0%	29	54.4%	69.6%
21-50 hp	**All Industrial**	**11.5%**	**43**	**5.7%**	**17.4%**
	Geo	13.3%	14	-5.2%	31.8%
	Non-Geo	10.7%	29	6.9%	14.6%
51-100 hp	**All Industrial**	**14.5%**	**43**	**5.9%**	**23.1%**
	Geo	1.2%	14	-0.5%	2.9%
	Non-Geo	20.7%	29	13.4%	28.0%
101-200 hp	**All Industrial**	**0.0%**	**43**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.0%	29	0.0%	0.0%
201-500 hp	**All Industrial**	**8.0%**	**43**	**-1.0%**	**16.9%**
	Geo	25.2%	14	15.6%	34.8%
	Non-Geo	0.0%	29	0.0%	0.0%
501-1000 hp	**All Industrial**	**6.8%**	**43**	**-0.8%**	**14.4%**
	Geo	21.5%	14	13.3%	29.7%
	Non-Geo	0.0%	29	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**9.6%**	**43**	**-1.2%**	**20.3%**
	Geo	30.3%	14	18.7%	41.8%
	Non-Geo	0.0%	29	0.0%	0.0%

Table C-12
Percent of Size Category Variable Load HP with VFDs

Size Category	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1-5 hp	**All Industrial**	**9.3%**	**40**	**-0.9%**	**19.4%**
	Geo	3.5%	13	-2.1%	9.1%
	Non-Geo	28.3%	27	11.1%	45.5%
6-20 hp	**All Industrial**	**31.9%**	**37**	**-2.2%**	**66.0%**
	Geo	0.9%	13	-0.5%	2.3%
	Non-Geo	112.5%	24	86.7%	138.4%
21-50 hp	**All Industrial**	**67.2%**	**30**	**36.2%**	**98.2%**
	Geo	100.6%	10	37.3%	163.9%
	Non-Geo	56.5%	20	22.4%	90.6%
51-100 hp	**All Industrial**	**56.5%**	**18**	**32.9%**	**80.1%**
	Geo	7.1%	10	0.1%	14.2%
	Non-Geo	68.8%	8	44.0%	93.7%
101-200 hp	**All Industrial**	**0.0%**	**16**	**0.0%**	**0.0%**
	Geo	0.0%	8	0.0%	0.0%
	Non-Geo	0.0%	8	0.0%	0.0%
201-500 hp	**All Industrial**	**64.0%**	**4**	**-52.4%**	**180.3%**
	Geo	200.0%	3	200.0%	200.0%
	Non-Geo	0.0%	1	.	.
501-1000 hp	**All Industrial**	**100.0%**	**1**	**.**	**.**
	Geo	100.0%	1	.	.
	Non-Geo	0.0%	0	0.0%	0.0%
Greater than 1000 hp	**All Industrial**	**100.0%**	**1**	**.**	**.**
	Geo	100.0%	1	.	.
	Non-Geo	0.0%	0	0.0%	0.0%

Table C-13
Average Number of Motors per Facility (Premise)

Size Category	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
ALL	**All Industrial**	**42.27**	**43**	**25.22**	**59.32**
	Geo	93.43	14	76.30	110.56
	Non-Geo	29.89	29	18.77	41.00
1-5 hp	**All Industrial**	**26.54**	**43**	**15.11**	**37.98**
	Geo	63.77	14	49.87	77.66
	Non-Geo	17.53	29	11.77	23.29
6-20 hp	**All Industrial**	**9.95**	**43**	**5.15**	**14.75**
	Geo	26.13	14	21.50	30.76
	Non-Geo	6.03	29	3.07	9.00
21-50 hp	**All Industrial**	**2.10**	**43**	**1.20**	**3.00**
	Geo	1.27	14	(0.13)	2.67
	Non-Geo	2.30	29	1.23	3.36
51-100 hp	**All Industrial**	**0.71**	**43**	**0.32**	**1.11**
	Geo	1.83	14	1.36	2.29
	Non-Geo	0.45	29	0.13	0.76
101-200 hp	**All Industrial**	**0.21**	**43**	**0.09**	**0.33**
	Geo	0.23	14	(0.03)	0.50
	Non-Geo	0.21	29	0.07	0.35
201-500 hp	**All Industrial**	**0.03**	**43**	**0.01**	**0.06**
	Geo	0.09	14	(0.04)	0.21
	Non-Geo	0.02	29	(0.00)	0.05
500-1000 hp	**All Industrial**	**0.00**	**43**	**(0.00)**	**0.01**
	Geo	0.03	14	(0.02)	0.07
	Non-Geo	-	29	-	-
Greater than 1000 hp	**All Industrial**	**0.00**	**43**	**(0.00)**	**0.01**
	Geo	0.02	14	(0.01)	0.05
	Non-Geo	-	29	-	-

Table C-14
Average Total Horsepower of Motors per Facility (Premise)

Size Category	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
ALL	**All Industrial**	**421**	**43**	**269**	**572**
	Geo	839	14	661	1,017
	Non-Geo	320	29	186	453
1-5 hp	**All Industrial**	**82**	**43**	**47**	**117**
	Geo	185	14	145	225
	Non-Geo	57	29	35	80
6-20 hp	**All Industrial**	**140**	**43**	**74**	**206**
	Geo	343	14	283	404
	Non-Geo	91	29	44	138
21-50 hp	**All Industrial**	**80**	**43**	**46**	**113**
	Geo	46	14	(5)	98
	Non-Geo	88	29	47	128
51-100 hp	**All Industrial**	**61**	**43**	**28**	**94**
	Geo	143	14	107	180
	Non-Geo	41	29	12	69
101-200 hp	**All Industrial**	**35**	**43**	**15**	**56**
	Geo	39	14	(5)	83
	Non-Geo	34	29	11	58
201-500 hp	**All Industrial**	**13**	**43**	**2**	**24**
	Geo	34	14	(14)	81
	Non-Geo	8	29	(1)	18
500-1000 hp	**All Industrial**	**4**	**43**	**(2)**	**9**
	Geo	20	14	(14)	55
	Non-Geo	-	29	-	-
Greater than 1000 hp	**All Industrial**	**6**	**43**	**(2)**	**13**
	Geo	29	14	(20)	77
	Non-Geo	-	29	-	-

Table C-15
Average Total Horsepower of NEMA Premium Motors per Facility (Premise)

Size Category	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
ALL	**All Industrial**	**29**	**43**	**6**	**53**
	Geo	15	14	(3)	34
	Non-Geo	33	29	5	61
1-5 hp	**All Industrial**	**2**	**43**	**1**	**3**
	Geo	2	14	(1)	5
	Non-Geo	2	29	0	3
6-20 hp	**All Industrial**	**7**	**43**	**2**	**12**
	Geo	3	14	(1)	6
	Non-Geo	8	29	2	14
21-50 hp	**All Industrial**	**18**	**43**	**(1)**	**36**
	Geo	2	14	(0)	5
	Non-Geo	22	29	(1)	44
51-100 hp	**All Industrial**	**2**	**43**	**0**	**3**
	Geo	6	14	(3)	15
	Non-Geo	0	29	(0)	1
101-200 hp	**All Industrial**	**1**	**43**	**(0)**	**3**
	Geo	2	14	(1)	6
	Non-Geo	1	29	(1)	3
201-500 hp	**All Industrial**	**-**	**43**	**-**	**-**
	Geo	-	14	-	-
	Non-Geo	-	29	-	-
500-1000 hp	**All Industrial**	**-**	**43**	**-**	**-**
	Geo	-	14	-	-
	Non-Geo	-	29	-	-
Greater than 1000 hp	**All Industrial**	**-**	**43**	**-**	**-**
	Geo	-	14	-	-
	Non-Geo	-	29	-	-

Table C-16
Average Total Horsepower of Motors with Variable Loads per Facility (Premise)

Size Category	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
ALL	**All Industrial**	**171**	**43**	**66**	**275**
	Geo	554	14	412	695
	Non-Geo	78	29	30	126
1-5 hp	**All Industrial**	**39**	**43**	**5**	**74**
	Geo	155	14	88	223
	Non-Geo	11	29	5	18
6-20 hp	**All Industrial**	**79**	**43**	**16**	**142**
	Geo	292	14	183	401
	Non-Geo	27	29	8	46
21-50 hp	**All Industrial**	**10**	**43**	**5**	**16**
	Geo	12	14	(2)	27
	Non-Geo	10	29	4	16
51-100 hp	**All Industrial**	**15**	**43**	**3**	**26**
	Geo	15	14	0	30
	Non-Geo	15	29	1	29
101-200 hp	**All Industrial**	**11**	**43**	**2**	**19**
	Geo	18	14	(6)	42
	Non-Geo	9	29	0	18
201-500 hp	**All Industrial**	**7**	**43**	**(1)**	**15**
	Geo	12	14	(8)	32
	Non-Geo	6	29	(3)	15
500-1000 hp	**All Industrial**	**4**	**43**	**(2)**	**9**
	Geo	20	14	(14)	55
	Non-Geo	-	29	-	-
Greater than 1000 hp	**All Industrial**	**6**	**43**	**(2)**	**13**
	Geo	29	14	(20)	77
	Non-Geo	-	29	-	-

Table C-17
Average Total Horsepower of Motors with VFDs per Facility (Premise)

Size Category	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
ALL	**All Industrial**	**58**	**43**	**17**	**99**
	Geo	94	14	(43)	232
	Non-Geo	49	29	7	91
1-5 hp	**All Industrial**	**4**	**43**	**1**	**6**
	Geo	5	14	(2)	12
	Non-Geo	3	29	1	6
6-20 hp	**All Industrial**	**25**	**43**	**4**	**46**
	Geo	3	14	(1)	6
	Non-Geo	31	29	4	57
21-50 hp	**All Industrial**	**7**	**43**	**2**	**11**
	Geo	13	14	(5)	30
	Non-Geo	5	29	1	10
51-100 hp	**All Industrial**	**8**	**43**	**(0)**	**17**
	Geo	1	14	(0)	3
	Non-Geo	10	29	(1)	21
101-200 hp	**All Industrial**	**-**	**43**	**-**	**-**
	Geo	-	14	-	-
	Non-Geo	-	29	-	-
201-500 hp	**All Industrial**	**5**	**43**	**(2)**	**11**
	Geo	24	14	(17)	64
	Non-Geo	-	29	-	-
500-1000 hp	**All Industrial**	**4**	**43**	**(2)**	**9**
	Geo	20	14	(14)	55
	Non-Geo	-	29	-	-
Greater than 1000 hp	**All Industrial**	**6**	**43**	**(2)**	**13**
	Geo	29	14	(20)	77
	Non-Geo	-	29	-	-

Table C-18
Percent of Total Motor Horsepower by End-Use (Premise)

End Use	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Pumps	**All Industrial**	**15.2%**	**43**	**5.6%**	**24.7%**
	Geo	7.6%	14	-0.6%	15.7%
	Non-Geo	20.0%	29	7.0%	33.0%
Fans and Blowers	**All Industrial**	**13.0%**	**43**	**6.7%**	**19.2%**
	Geo	6.5%	14	2.0%	11.0%
	Non-Geo	17.1%	29	8.8%	25.4%
Air compressors	**All Industrial**	**8.0%**	**43**	**4.5%**	**11.5%**
	Geo	14.4%	14	6.3%	22.4%
	Non-Geo	4.0%	29	1.8%	6.2%
Refrigerant Compressor	**All Industrial**	**1.8%**	**43**	**0.4%**	**3.2%**
	Geo	0.9%	14	-0.1%	1.9%
	Non-Geo	2.3%	29	0.2%	4.4%
Materials Processing	**All Industrial**	**50.2%**	**43**	**35.3%**	**65.0%**
	Geo	64.6%	14	41.1%	88.1%
	Non-Geo	41.0%	29	28.5%	53.4%
Materials Handling	**All Industrial**	**8.8%**	**43**	**3.5%**	**14.2%**
	Geo	2.0%	14	-0.4%	4.4%
	Non-Geo	13.2%	29	5.8%	20.5%
Other	**All Industrial**	**3.1%**	**43**	**0.3%**	**5.9%**
	Geo	4.0%	14	-2.5%	10.5%
	Non-Geo	2.5%	29	-0.3%	5.3%

Table C-19
Percent of Motors Associated with Component Type (Premise)

Component	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Compressor	**All Industrial**	**15.1%**	**42**	**1.4%**	**28.8%**
	Geo	7.3%	14	0.0%	18.3%
	Non-Geo	17.0%	28	0.3%	33.8%
Pump	**All Industrial**	**6.6%**	**42**	**3.1%**	**10.0%**
	Geo	2.9%	14	0.0%	6.0%
	Non-Geo	7.5%	28	3.2%	11.8%
Fan	**All Industrial**	**6.2%**	**42**	**1.7%**	**10.7%**
	Geo	3.4%	14	0.0%	8.4%
	Non-Geo	6.9%	28	1.5%	12.4%
Blower	**All Industrial**	**13.9%**	**42**	**1.6%**	**26.1%**
	Geo	1.7%	14	0.0%	4.0%
	Non-Geo	16.8%	28	1.9%	31.7%
Vacuum Pump	**All Industrial**	**1.5%**	**42**	**0.2%**	**2.8%**
	Geo	1.1%	14	0.0%	2.9%
	Non-Geo	1.6%	28	0.0%	3.2%
Refrigerant Compressor	**All Industrial**	**4.8%**	**42**	**0.0%**	**10.6%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	6.0%	28	0.0%	13.1%
Other Material Processing	**All Industrial**	**45.4%**	**42**	**26.9%**	**63.9%**
	Geo	82.6%	14	62.6%	100.0%
	Non-Geo	36.3%	28	17.2%	55.5%
Other Material Handling	**All Industrial**	**5.7%**	**42**	**2.7%**	**8.6%**
	Geo	1.1%	14	0.0%	2.5%
	Non-Geo	6.8%	28	3.3%	10.2%
Other	**All Industrial**	**0.8%**	**42**	**0.1%**	**1.6%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	1.0%	28	0.1%	2.0%

Table C-20
Percent of Motors with Load Modulation Type (Premise)

Variable	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Throttle Valve	**All Industrial**	**4.1%**	**38**	**0.7%**	**7.5%**
	Geo	2.1%	13	0.0%	4.7%
	Non-Geo	4.9%	25	0.1%	9.7%
Vane/Damper	**All Industrial**	**2.8%**	**38**	**0.0%**	**5.7%**
	Geo	0.1%	13	0.0%	0.4%
	Non-Geo	3.9%	25	0.0%	8.2%
VFD	**All Industrial**	**6.2%**	**38**	**2.6%**	**9.9%**
	Geo	3.4%	13	0.0%	8.9%
	Non-Geo	7.4%	25	2.9%	11.9%
Staging	**All Industrial**	**19.4%**	**38**	**0.0%**	**39.3%**
	Geo	0.1%	13	0.0%	0.4%
	Non-Geo	27.3%	25	1.0%	53.6%
Multi-speed Motor	**All Industrial**	**10.0%**	**38**	**3.4%**	**16.5%**
	Geo	18.6%	13	11.3%	26.0%
	Non-Geo	6.4%	25	0.7%	12.1%
Eddy Current Clutch	**All Industrial**	**0.1%**	**38**	**0.0%**	**0.3%**
	Geo	0.0%	13	0.0%	0.0%
	Non-Geo	0.2%	25	0.0%	0.5%
Belt	**All Industrial**	**18.1%**	**38**	**0.0%**	**37.4%**
	Geo	0.9%	13	0.0%	2.4%
	Non-Geo	25.2%	25	0.5%	49.9%
Other Mechanical Drive	**All Industrial**	**31.7%**	**38**	**16.3%**	**47.2%**
	Geo	59.7%	13	41.8%	77.7%
	Non-Geo	20.1%	25	10.4%	29.9%
Other	**All Industrial**	**7.5%**	**38**	**1.9%**	**13.2%**
	Geo	14.9%	13	0.0%	34.5%
	Non-Geo	4.5%	25	0.5%	8.5%

Table C-21
Percent of Motors by Type (Premise)

Variable	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
AC Polyphase	**All Industrial**	**67.6%**	**34**	**46.4%**	**88.8%**
	Geo	87.8%	10	78.8%	96.8%
	Non-Geo	66.4%	24	43.6%	89.1%
AC Single Phase	**All Industrial**	**31.7%**	**34**	**10.5%**	**52.9%**
	Geo	12.0%	10	3.2%	20.8%
	Non-Geo	32.8%	24	10.1%	55.6%
DC	**All Industrial**	**0.6%**	**34**	**0.0%**	**1.3%**
	Geo	0.2%	10	0.0%	0.6%
	Non-Geo	0.7%	24	0.0%	1.4%
Synchronus	**All Industrial**	**0.1%**	**34**	**0.0%**	**0.3%**
	Geo	#N/A	#N/A	#N/A	#N/A
	Non-Geo	0.1%	24	0.0%	0.3%
Other	**All Industrial**	**#N/A**	**#N/A**	**#N/A**	**#N/A**
	Geo	#N/A	#N/A	#N/A	#N/A
	Non-Geo	#N/A	#N/A	#N/A	#N/A

Table C-22
Percent of Motors with Enclosure Type (Premise)

Variable	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
ODP	**All Industrial**	**1.8%**	**31**	**0.1%**	**3.6%**
	Geo	13.6%	10	1.8%	25.5%
	Non-Geo	1.3%	21	0.0%	2.8%
TEFC	**All Industrial**	**97.9%**	**31**	**95.9%**	**99.8%**
	Geo	79.7%	10	67.6%	91.8%
	Non-Geo	98.7%	21	97.2%	100.0%
Other	**All Industrial**	**0.3%**	**31**	**0.0%**	**0.7%**
	Geo	6.7%	10	0.0%	17.1%
	Non-Geo	#N/A	#N/A	#N/A	#N/A

Table C-23
Miscellaneous Motor Details (Premise)

Detail	Area	Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Black Box (Motor Not Visible) (Percent of Motors)	**All Industrial**	**26.8%**	**42**	**14.5%**	**39.1%**
	Geo	68.4%	14	59.8%	77.1%
	Non-Geo	16.6%	28	6.9%	26.4%
Variable Load (Percent of Motors)	**All Industrial**	**53.2%**	**42**	**36.7%**	**69.6%**
	Geo	74.8%	14	50.6%	99.0%
	Non-Geo	47.9%	28	29.9%	65.8%
Operating Hours per week	**All Industrial**	**52**	**42**	**40**	**64**
	Geo	70	14	59	81
	Non-Geo	48	28	34	61
Voltage Rating	**All Industrial**	**302**	**39**	**250**	**354**
	Geo	267	13	184	351
	Non-Geo	311	26	250	372
Horsepower	**All Industrial**	**22**	**42**	**16**	**28**
	Geo	42	14	20	64
	Non-Geo	20	28	14	26
kW	**All Industrial**	**3.76**	**9**	**1**	**6**
	Geo	5.91	3	4	8
	Non-Geo	3.22	6	0	6
Motor Speed (rpm)	**All Industrial**	**2,907**	**40**	**2,134**	**3,680**
	Geo	5,053	13	4,038	6,068
	Non-Geo	2,288	27	1,960	2,616
Nominal Efficiency Rating	**All Industrial**	**85%**	**36**	**81%**	**90%**
	Geo	88%	11	83%	93%
	Non-Geo	85%	25	80%	90%
Approximate Age	**All Industrial**	**10**	**38**	**8**	**13**
	Geo	6	13	3	9
	Non-Geo	12	25	9	15

C.1.2. Motor Energy Efficiency Opportunities

Table C-24
Motor EE Ops (Premise)

Energy Efficiency Opportunity	Area	Percent of Motors	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Replace with NEMA Premium Motor	**All Industrial**	**28%**	**42**	**13%**	**43%**
	Geo	18%	14	-2%	38%
	Non-Geo	31%	28	12%	49%
Install VSD	**All Industrial**	**20%**	**42**	**8%**	**32%**
	Geo	5%	14	-2%	11%
	Non-Geo	24%	28	9%	38%
Replace Gen-set for DC drive with silicon controlled rectifier	**All Industrial**	**14%**	**36**	**-2%**	**30%**
	Geo	0%	11	0%	0%
	Non-Geo	18%	25	-2%	37%
Other	**All Industrial**	**2%**	**41**	**0%**	**5%**
	Geo	0%	13	0%	0%
	Non-Geo	3%	28	0%	6%

Replace with NEMA Premium Motor	28.1%
Install VSD	19.9%
Replace Gen-set for DC drive with silicon controlled rectifier	14.0%
Other	2.3%
	- 0.0%
	- 0.0%
	- 0.0%
	- 0.0%

Appendix D: Compressed Air Systems

D.1. Facility kWh Weighted Results

D.1.1. Compressed Air Details

Table D-1
Percent of Facilities with Air Compressor End Uses (Facility kWh)

End Use	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Percent of Facilities with Compressed Air Systems	**All Industrial**	**94.5%**	**44**	**88.6%**	**100.0%**
	Geo	80.9%	14	58.1%	100.0%
	Non-Geo	98.6%	30	96.7%	100.0%
Air Tool Drive	**All Industrial**	**25.4%**	**42**	**17.9%**	**33.0%**
	Geo	29.7%	14	13.8%	45.7%
	Non-Geo	24.0%	28	15.4%	32.6%
Open Blowing	**All Industrial**	**18.1%**	**42**	**11.9%**	**24.2%**
	Geo	16.8%	14	8.9%	24.6%
	Non-Geo	18.5%	28	10.5%	26.5%
Aeration, Agitation, Oxygenation of Liquids	**All Industrial**	**1.6%**	**42**	**-0.5%**	**3.7%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	2.1%	28	-0.7%	4.9%
Transport of liquids or light solids (padding)	**All Industrial**	**0.0%**	**42**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.0%	28	0.0%	0.0%
Transport of Solids	**All Industrial**	**0.1%**	**42**	**0.0%**	**0.2%**
	Geo	0.3%	14	-0.1%	0.7%
	Non-Geo	0.0%	28	0.0%	0.0%
Vacuum Generation	**All Industrial**	**2.1%**	**42**	**0.8%**	**3.4%**
	Geo	0.8%	14	-0.2%	1.8%
	Non-Geo	2.5%	28	0.8%	4.3%
Diaphragm Pumps	**All Industrial**	**0.0%**	**42**	**0.0%**	**0.0%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.0%	28	0.0%	0.0%
Pneumatic Controls	**All Industrial**	**49.2%**	**42**	**38.4%**	**60.0%**
	Geo	44.4%	14	24.3%	64.5%
	Non-Geo	50.8%	28	37.9%	63.6%
Other	**All Industrial**	**3.6%**	**42**	**0.5%**	**6.6%**
	Geo	8.0%	14	-2.9%	18.9%
	Non-Geo	2.1%	28	0.1%	4.2%

Table D-2
Air Compressor Details (Facility kWh)

Question	Area	Percent/ Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
"Air" as Commodity Type	**All Industrial**	**100%**	**42**	**100%**	**100%**
	Geo	100%	14	100%	100%
	Non-Geo	100%	28	100%	100%
Average Number of Air Compressors	**All Industrial**	**2.5**	**41**	**2.2**	**2.7**
	Geo	2.7	13	2.2	3.1
	Non-Geo	2.4	28	2.1	2.7
Percent with Compressed Air Storage	**All Industrial**	**75%**	**38**	**60%**	**90%**
	Geo	74%	13	53%	95%
	Non-Geo	75%	25	56%	94%
Average Operating Capacity of Storage Tanks	**All Industrial**	**348**	**29**	**214**	**482**
	Geo	270	10	127	412
	Non-Geo	372	19	199	545
Percent with Sequencing Controls for Multiple Compressors	**All Industrial**	**8.3%**	**23**	**2.1%**	**14.4%**
	Geo	11.4%	10	-1.0%	23.7%
	Non-Geo	7.2%	13	-0.3%	14.7%

Table D-3
Air Dryer System Details (Facility kWh)

Question	Area	Percent/ Mean	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Percent of Facilities with Air Dryers	**All Industrial**	**79%**	**41**	**68%**	**89%**
	Geo	100%	14	100%	100%
	Non-Geo	71%	27	57%	86%
Percent of Facilities with Refrigerant Dryers	**All Industrial**	**62%**	**39**	**49%**	**75%**
	Geo	85%	12	70%	101%
	Non-Geo	56%	27	40%	73%
Percent of Facilities with Dessicant Dryers	**All Industrial**	**12%**	**39**	**0.1**	**0.2**
	Geo	3%	13	(0.0)	0.1
	Non-Geo	15%	26	0.1	0.2
Percent of Facilities with Deliquescent Dryers	**All Industrial**	**1%**	**37**	**0%**	**3%**
	Geo	0%	12	0%	0%
	Non-Geo	2%	25	-1%	4%

Table D-4
Percent of Facilities with Compressed Air Unit Type (Facility kWh)

Type of Unit	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Single Acting Reciprocating	**All Industrial**	**29%**	**42**	**18%**	**41%**
	Geo	30%	14	8%	52%
	Non-Geo	29%	28	15%	43%
Double Acting Reciprocating	**All Industrial**	**12%**	**42**	**6%**	**18%**
	Geo	5%	14	0%	11%
	Non-Geo	14%	28	6%	22%
Lubricant Injected Rotary Screw	**All Industrial**	**44%**	**42**	**30%**	**57%**
	Geo	44%	14	21%	67%
	Non-Geo	44%	28	27%	60%
Lubricant-Free Rotary Screw	**All Industrial**	**33%**	**42**	**18%**	**48%**
	Geo	30%	14	9%	51%
	Non-Geo	34%	28	15%	53%
Centrifugal	**All Industrial**	**3%**	**42**	**0%**	**6%**
	Geo	8%	14	-3%	19%
	Non-Geo	2%	28	-1%	4%
Other (Scroll)	**All Industrial**	**3%**	**42**	**0%**	**6%**
	Geo	2%	14	-1%	4%
	Non-Geo	3%	28	-1%	8%

Table D-5
Percent of Facilities with Compressed Air Fuel Types (Facility kWh)

Fuel Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Electric	**All Industrial**	**99%**	**42**	**99%**	**100%**
	Geo	100%	14	100%	100%
	Non-Geo	99%	28	98%	100%
Steam	**All Industrial**	**0.6%**	**42**	**-0.2%**	**1.4%**
	Geo	0.0%	14	0.0%	0.0%
	Non-Geo	0.8%	28	-0.3%	1.8%
Other (Diesel)	**All Industrial**	**3%**	**42**	**0%**	**6%**
	Geo	8%	14	-3%	19%
	Non-Geo	1%	28	0%	3%

Table D-6
Percent of Facilities with Compressed Air Control Type (Facility kWh)

Control Type	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Start-Stop	**All Industrial**	**43%**	**37**	**29%**	**57%**
	Geo	19%	13	-1%	38%
	Non-Geo	52%	24	32%	71%
Load/Unload	**All Industrial**	**34%**	**37**	**21%**	**47%**
	Geo	62%	13	39%	85%
	Non-Geo	23%	24	9%	37%
Modulating	**All Industrial**	**35%**	**37**	**19%**	**51%**
	Geo	33%	13	11%	55%
	Non-Geo	36%	24	15%	57%
Variable Displacement	**All Industrial**	**2%**	**37**	**-1%**	**5%**
	Geo	8%	13	-3%	20%
	Non-Geo	0%	24	0%	0%
Variable Speed Drive	**All Industrial**	**3%**	**37**	**0%**	**5%**
	Geo	9%	13	1%	18%
	Non-Geo	0%	24	0%	0%
Other	**All Industrial**	**6%**	**37**	**-2%**	**13%**
	Geo	21%	13	-4%	46%
	Non-Geo	0%	24	0%	0%

Table D-7
Compressed Air EE Opportunities (Facility kWh)

Opportunity	Area	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Reduce Leaks	**All Industrial**	**32%**	**42**	**20%**	**43%**
	Geo	43%	14	21%	65%
	Non-Geo	28%	28	14%	41%
Increase Air Storage	**All Industrial**	**14%**	**42**	**6%**	**21%**
	Geo	3%	14	-1%	8%
	Non-Geo	17%	28	7%	27%
Reduce Operating Pressures	**All Industrial**	**12%**	**42**	**5%**	**19%**
	Geo	16%	14	2%	30%
	Non-Geo	11%	28	2%	19%
Install Part Load Controllers	**All Industrial**	**12%**	**42**	**4%**	**21%**
	Geo	0%	14	0%	0%
	Non-Geo	16%	28	5%	27%
Install Unloading Kits	**All Industrial**	**3%**	**42**	**0%**	**6%**
	Geo	0%	14	0%	0%
	Non-Geo	4%	28	-1%	9%
Install Rotary Screw Air Compressors	**All Industrial**	**11%**	**42**	**3%**	**18%**
	Geo	0%	14	0%	0%
	Non-Geo	14%	28	4%	24%
Install Engineered Nozzles	**All Industrial**	**26%**	**42**	**15%**	**38%**
	Geo	25%	14	7%	44%
	Non-Geo	27%	28	12%	41%
Other	**All Industrial**	**3%**	**42**	**0%**	**7%**
	Geo	3%	14	-1%	8%
	Non-Geo	3%	28	-1%	8%

D.2. Premise Weighted Results

D.2.1. Compressed Air Details

Table D-8
Percent of Facilities with Air Compressor End Uses (Premise)
Table D-9
Horsepower Devoted to Compressed Air per Facility (Premise)

Appendix E: Refrigeration Results

Table E-1
Commercial Refrigerator Details

Detail	Site #1		
	Unit 1	Unit 2	Unit 3
Equipment Type	Glass Door Beverage Case	Glass Door Beverage Case	Glass Door Beverage Case
Length (feet)	5	10	8
Number of Doors	2	4	2
Number of Units	1	1	1
Age (Years)	18	18	18
EE Actions in Place			
Smart Anti-Sweat Heater Controls	No	No	No
Super High Insulation Freezer Wi	No	No	No
Economizer coolers	No	No	No
ECM Motors for Fans	No	No	No
EE Opportunities			
Smart Anti-Sweat Heater Controls	Yes	Yes	Yes
Super High Insulation Freezer Wi	Yes	Yes	Yes
Economizer coolers	Yes	Yes	Yes
ECM Motors for Fans	Yes	Yes	Yes

Table E-2
Non-Commercial Refrigerator Details

Site	Unit	Type	Quantity	Quantity Energy Star
Site #1	Unit 1	Single Door	2	0
	Unit 2	Under Counter	2	0
Site #2	Unit 1	Two Door	1	0
	Unit 2	Two Door	1	0
Site #3	Unit 1	Single Door	2	Unknown
	Unit 2	Under Counter	1	0
	Unit 3	Chest Freezer	1	Unknown
Site #4	Unit 1	Under Counter	1	0
Site #5	Unit 1	Single Door	2	1
Site #6	Unit 1	Two Door	1	0
Site #7	Unit 1	Single Door	1	0

Appendix F: Cooling Results

F.1.Premise Weighted Results

F.1.1. Overall Cooling

Table F-1
Percent of Facilities with Space Cooling of Type (Premise)

Cooling Type	Geo-Target	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
None	**Overall**	**38%**	**44**	**18%**	**59%**
	Geo-Target	3%	14	0%	7%
	Non-Geo-Target	47%	30	23%	70%
Packaged HVAC	**Overall**	**26%**	**44**	**9%**	**43%**
	Geo-Target	22%	14	-1%	44%
	Non-Geo-Target	27%	30	7%	48%
Split System HVAC	**Overall**	**11%**	**44**	**5%**	**17%**
	Geo-Target	7%	14	-3%	17%
	Non-Geo-Target	12%	30	4%	19%
Room A/C	**Overall**	**29%**	**44**	**8%**	**49%**
	Geo-Target	69%	14	38%	99%
	Non-Geo-Target	19%	30	-1%	39%
Other Central Cooling Plant	**Overall**	**3%**	**44**	**0%**	**5%**
	Geo-Target	7%	14	-3%	17%
	Non-Geo-Target	2%	30	-1%	4%
Heat Pump	**Overall**	**17%**	**44**	**0%**	**34%**
	Geo-Target	7%	14	-3%	17%
	Non-Geo-Target	19%	30	-1%	39%
Miscellaneous Cooling	**Overall**	**16%**	**44**	**0%**	**31%**
	Geo-Target	81%	14	61%	101%
	Non-Geo-Target	0%	30	0%	0%

Table F-2
Percent of Units with Space Cooling of Type (Premise)

Cooling Type	Geo-Target	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Packaged HVAC	**Overall**	**24%**	**25**	**13%**	**36%**
	Geo-Target	16%	9	1%	32%
	Non-Geo-Target	31%	16	20%	42%
Split System HVAC	**Overall**	**20%**	**25**	**9%**	**32%**
	Geo-Target	4%	9	-1%	10%
	Non-Geo-Target	34%	16	16%	51%
Room A/C	**Overall**	**24%**	**25**	**10%**	**38%**
	Geo-Target	31%	9	13%	48%
	Non-Geo-Target	18%	16	1%	36%
Other Central Cooling Plant	**Overall**	**1%**	**25**	**0%**	**3%**
	Geo-Target	1%	9	0%	3%
	Non-Geo-Target	1%	16	0%	3%
Heat Pump	**Overall**	**9%**	**25**	**0%**	**18%**
	Geo-Target	1%	9	-1%	4%
	Non-Geo-Target	16%	16	2%	29%
Miscellaneous Cooling	**Overall**	**21%**	**25**	**8%**	**34%**
	Geo-Target	46%	9	38%	53%
	Non-Geo-Target	0%	16	0%	0%

Table F-3
Overall Space Cooling Details (Premise)

Detail	Geo-Target	Percent or Quantity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Units Per Facility	**Overall**	**3.1**	**25**	**2.2**	**4.0**
	Geo-Target	4.7	9	3.5	5.8
	Non-Geo-Target	2.5	16	1.6	3.3
Average Age per Unit	**Overall**	**11.8**	**15**	**10.2**	**13.4**
	Geo-Target	12.7	5	10.1	15.3
	Non-Geo-Target	11.3	10	9.3	13.3
Percent of Units Missing Age	**Overall**	**0.54**	**25**	**0.35**	**0.74**
	Geo-Target	0.66	9	0.35	0.98
	Non-Geo-Target	0.45	16	0.30	0.59
Avearge Efficiency of Units (EER)	**Overall**	**11.15**	**5**	**10.43**	**11.86**
	Geo-Target	.	0	.	.
	Non-Geo-Target	11.15	5	10.43	11.86
Percent of Units Missing Efficiency	**Overall**	**97%**	**25**	**95%**	**99%**
	Geo-Target	100%	9	100%	100%
	Non-Geo-Target	95%	16	91%	98%
Average Unit Size (tons)	**Overall**	**3.2**	**19**	**1.6**	**4.9**
	Geo-Target	1.4	5	0.6	2.2
	Non-Geo-Target	4.1	14	2.0	6.1
Percent of Units Missing Size	**Overall**	**53%**	**25**	**40%**	**66%**
	Geo-Target	67%	9	51%	82%
	Non-Geo-Target	42%	16	18%	65%
Average Amount of Space Cooling (tons) per Facility	**Overall**	**6.6**	**19**	**2.1**	**11.1**
	Geo-Target	2.6	5	1.4	3.9
	Non-Geo-Target	8.8	14	1.6	16.1

F.1.2. Central Cooling Plant

Table F-4
Percent of Facilities with Central Cooling Plants by Type (Premise)

Type of Central Cooling Plant	Geo-Target	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
No Central Cooling Plant	**Overall**	**74%**	**44**	**57%**	**91%**
	Geo-Target	84%	14	66%	102%
	Non-Geo-Target	72%	30	51%	92%
Central Cooling Plant	**Overall**	**26%**	**44**	**9%**	**43%**
	Geo-Target	16%	14	-2%	34%
	Non-Geo-Target	28%	30	8%	49%
Packaged HVAC	**Overall**	**18%**	**44**	**1%**	**35%**
	Geo-Target	1%	14	0%	3%
	Non-Geo-Target	22%	30	2%	42%
Split System HVAC	**Overall**	**0%**	**44**	**0%**	**0%**
	Geo-Target	0%	14	0%	0%
	Non-Geo-Target	0%	30	0%	0%
Misc Central Cooling Plant	**Overall**	**6%**	**44**	**2%**	**9%**
	Geo-Target	8%	14	-3%	20%
	Non-Geo-Target	5%	30	1%	9%
Heat Pump	**Overall**	**3%**	**44**	**0%**	**5%**
	Geo-Target	7%	14	-3%	17%
	Non-Geo-Target	2%	30	-1%	4%

Table F-5
Percent of Central Cooling Plant Premises by Type (Premise)

Cooling Type	Geo-Target	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Packaged HVAC	**Overall**	**69%**	**18**	**44%**	**94%**
	Geo-Target	8%	7	-1%	17%
	Non-Geo-Target	77%	11	56%	99%
Split System HVAC	**Overall**	**0%**	**18**	**0%**	**0%**
	Geo-Target	0%	7	0%	0%
	Non-Geo-Target	0%	11	0%	0%
Misc Central Cooling Plant	**Overall**	**21%**	**18**	**3%**	**39%**
	Geo-Target	52%	7	14%	90%
	Non-Geo-Target	17%	11	0%	34%
Heat Pump	**Overall**	**10%**	**18**	**-1%**	**21%**
	Geo-Target	40%	7	2%	79%
	Non-Geo-Target	6%	11	-3%	14%

Table F-6
Percent of Central Cooling Plant Premises by Fuel (Premise)

Fuel Type	Geo-Target	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Electric	**Overall**	**45%**	**18**	**11%**	**79%**
	Geo-Target	96%	7	90%	102%
	Non-Geo-Target	38%	11	5%	71%
Natural Gas	**Overall**	**55%**	**18**	**20%**	**89%**
	Geo-Target	0%	7	0%	0%
	Non-Geo-Target	62%	11	29%	95%
Unknown	**Overall**	**0%**	**18**	**0%**	**1%**
	Geo-Target	4%	7	-2%	10%
	Non-Geo-Target	0%	11	0%	0%

Table F-7
Percent of Central Cooling Plant Cooling Equipment Units by Fuel (Premise)

Fuel Type	Geo-Target	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Electric	**Overall**	**63%**	**18**	**31%**	**95%**
	Geo-Target	97%	7	92%	101%
	Non-Geo-Target	59%	11	25%	94%
Natural Gas	**Overall**	**37%**	**18**	**4%**	**69%**
	Geo-Target	0%	7	0%	0%
	Non-Geo-Target	41%	11	6%	75%
Unknown	**Overall**	**0%**	**18**	**0%**	**1%**
	Geo-Target	3%	7	-1%	8%
	Non-Geo-Target	0%	11	0%	0%

Table F-8
Output (Tons) of Central Cooling Plant Equipment (Premise)

Output Capacity	Geo-Target	Tons	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Tons Per Plant Devoted to Space Cooling	**Overall**	**19.9**	**7**	**10.3**	**29.5**
	Geo-Target	10.6	3	1.1	20.2
	Non-Geo-Target	23.1	4	11.7	34.5
Total Tons Cooling Per Plant	**Overall**	**36.9**	**11**	**24.5**	**49.3**
	Geo-Target	17.5	4	0.6	34.4
	Non-Geo-Target	42.5	7	29.2	55.8
Tons Per Unit Devoted to Space Cooling	**Overall**	**9.5**	**7**	**7.6**	**11.3**
	Geo-Target	8.6	3	3.1	14.0
	Non-Geo-Target	9.6	4	7.7	11.5
Tons Per Unit	**Overall**	**19.4**	**11**	**11.5**	**27.3**
	Geo-Target	13.5	4	3.9	23.1
	Non-Geo-Target	20.5	7	11.0	30.0
Percent of Central Cooling Plants with Known Tons Space Cooling	**Overall**	**31%**	**18**	**9%**	**54%**
	Geo-Target	48%	7	15%	82%
	Non-Geo-Target	30%	11	6%	53%
Percent of Central Cooling Plants with Known Tons Cooling	**Overall**	**35%**	**18**	**12%**	**59%**
	Geo-Target	55%	7	22%	88%
	Non-Geo-Target	33%	11	9%	58%

Table F-9
EE Ops for Central Cooling Plant Fans and Blowers (Premise)

Energy Efficiency Opportunity	Geo-Target	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Reduce Fan Size to Better Match Load	**Overall**	**0%**	**18**	**0%**	**0%**
	Geo-Target	0%	7	0%	0%
	Non-Geo-Target	0%	11	0%	0%
Replace Damper and Vane Controls with Electronic Speed Controls	**Overall**	**10%**	**18**	**-1%**	**21%**
	Geo-Target	0%	7	0%	0%
	Non-Geo-Target	11%	11	-2%	25%
Replace Fan with more Efficient Model	**Overall**	**7%**	**18**	**-1%**	**15%**
	Geo-Target	0%	7	0%	0%
	Non-Geo-Target	8%	11	-2%	17%
Other Fan Measure	**Overall**	**0%**	**18**	**0%**	**0%**
	Geo-Target	0%	7	0%	0%
	Non-Geo-Target	0%	11	0%	0%

Table F-10
EE Ops for Packaged Central Cooling Plants (Premise)

Energy Efficiency Opportunities	Geo-Target	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Install Economizer	**Overall**	**1%**	**7**	**-1%**	**3%**
	Geo-Target	100%	2	100%	100%
	Non-Geo-Target	0%	5	0%	0%
Install Demand Control Ventilation	**Overall**	**10%**	**7**	**-4%**	**25%**
	Geo-Target	50%	2	3%	97%
	Non-Geo-Target	10%	5	-4%	24%

Table F-11
Average Operating Weeks of Central Cooling Plants (Premise)

Output Capacity	Geo-Target	Tons	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Average Weeks in Operation for Cooling Plants used Seasonally	**Overall**	**23.1**	**9**	**15.4**	**30.8**
	Geo-Target	24.0	4	19.7	28.3
	Non-Geo-Target	23.0	5	14.6	31.5
Percent of Facilities for whom operaring weeks are Unknown	**Overall**	**5%**	**18**	**(0.0)**	**0.1**
	Geo-Target	7%	7	(0.0)	0.1
	Non-Geo-Target	5%	11	(0.0)	0.1
Less than 13 weeks per year	**Overall**	**-**	**18**	**-**	**-**
	Geo-Target	-	7	-	-
	Non-Geo-Target	-	11	-	-
13 to 26	**Overall**	**68%**	**18**	**0.5**	**0.9**
	Geo-Target	42%	7	0.1	0.8
	Non-Geo-Target	70%	11	0.5	0.9
26 to 39	**Overall**	**4%**	**18**	**-1%**	**9%**
	Geo-Target	42%	7	8%	75%
	Non-Geo-Target	0%	11	0%	0%
39 to 52	**Overall**	**0%**	**18**	**0%**	**1%**
	Geo-Target	3%	7	-1%	8%
	Non-Geo-Target	0%	11	0%	0%
Not Seaonal	**Overall**	**23%**	**18**	**4%**	**42%**
	Geo-Target	7%	7	-3%	16%
	Non-Geo-Target	25%	11	3%	46%

Table F-12
Average Operating Hours of Central Cooling Plants (Premise)

Output Capacity	Geo-Target	Tons	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Average Weekly Hours of Operation	**Overall**	**92.1**	**11**	**65.5**	**118.7**
	Geo-Target	107.3	4	58.0	156.6
	Non-Geo-Target	90.7	7	62.4	119.0
Percent of Facilities for whom Operating Hours are Unknown	**Overall**	**8%**	**18**	**0.0**	**0.1**
	Geo-Target	13%	7	0.0	0.3
	Non-Geo-Target	7%	11	0.0	0.1
Less than 40 hours per week	**Overall**	**-**	**18**	**-**	**-**
	Geo-Target	-	7	-	-
	Non-Geo-Target	-	11	-	-
40 to 56	**Overall**	**24%**	**18**	**0.0**	**0.4**
	Geo-Target	42%	7	0.1	0.8
	Non-Geo-Target	22%	11	0.0	0.4
56 to 84	**Overall**	**37%**	**18**	**4%**	**69%**
	Geo-Target	0%	7	0%	0%
	Non-Geo-Target	41%	11	6%	75%
84 to 120	**Overall**	**0%**	**18**	**0%**	**0%**
	Geo-Target	0%	7	0%	0%
	Non-Geo-Target	0%	11	0%	0%
120 to 168	**Overall**	**31%**	**18**	**9%**	**53%**
	Geo-Target	45%	7	11%	79%
	Non-Geo-Target	30%	11	6%	53%

F.2.Packaged Cooling

F.2.1. Premise Weighted Results

F.2.1.1. Details

Table F-13
Unit Type by Geo-Target (premise)

Unit Type	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Packaged A/C	**All-Industrial**	8	67%	40%	95%
	Geo	4	65%	15%	115%
	Non-Geo	4	70%	23%	117%
Packaged Heat Pump	**All-Industrial**	0	0%	0%	0%
	Geo	0	0%	0%	0%
	Non-Geo	0	0%	0%	0%
Packaged A/C w/ Water Loop	**All-Industrial**	0	0%	0%	0%
	Geo	0	0%	0%	0%
	Non-Geo	0	0%	0%	0%
Packaged Heat Pump w/ Water Loop	**All-Industrial**	0	0%	0%	0%
	Geo	0	0%	0%	0%
	Non-Geo	0	0%	0%	0%
Packaged Split System	**All-Industrial**	8	16%	-6%	38%
	Geo	4	0%	0%	0%
	Non-Geo	4	30%	-17%	77%
Evaporative Cooler	**All-Industrial**	0	0%	0%	0%
	Geo	0	0%	0%	0%
	Non-Geo	0	0%	0%	0%
Other	**All-Industrial**	8	17%	-5%	38%
	Geo	4	35%	-15%	85%
	Non-Geo	4	0%	0%	0%
Don't Know	**All-Industrial**	0	0%	0%	0%
	Geo	0	0%	0%	0%
	Non-Geo	0	0%	0%	0%
Not Applicable	**All-Industrial**	0	0%	0%	0%
	Geo	0	0%	0%	0%
	Non-Geo	0	0%	0%	0%

Table F-14
Number of Units of a Common Size and Type by Geo-Target (premise)

Unit Type	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1	**All-Industrial**	8	68%	41%	95%
	Geo	4	32%	-18%	82%
	Non-Geo	4	100%	100%	100%
2 to 5	**All-Industrial**	8	31%	4%	58%
	Geo	4	65%	15%	115%
	Non-Geo	4	0%	0%	0%
Greater than 5	**All-Industrial**	8	1%	-1%	4%
	Geo	4	3%	-3%	10%
	Non-Geo	4	0%	0%	0%
Don't Know	**All-Industrial**	0	0%	0%	0%
	Geo	0	0%	0%	0%
	Non-Geo	0	0%	0%	0%
Not Applicable	**All-Industrial**	0	0%	0%	0%
	Geo	0	0%	0%	0%
	Non-Geo	0	0%	0%	0%

Table F-15
Rated Output by Geo-Target (premise)

Primary Fuel	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
0 to 2	**All-Industrial**	8	21%	-2%	44%
	Geo	4	0%	0%	0%
	Non-Geo	4	40%	-8%	88%
2 to 4	**All-Industrial**	8	15%	-6%	37%
	Geo	4	32%	-18%	82%
	Non-Geo	4	0%	0%	0%
4 to 6	**All-Industrial**	8	32%	4%	59%
	Geo	4	0%	0%	0%
	Non-Geo	4	60%	12%	108%
Don’t know	**All-Industrial**	8	32%	5%	59%
	Geo	4	68%	18%	118%
	Non-Geo	4	0%	0%	0%
Not Applicable	**All-Industrial**	0	0%	0%	0%
	Geo	0	0%	0%	0%
	Non-Geo	0	0%	0%	0%

Table F-16
Heating Fuel by Geo-Target (premise)

Heating Fuel	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Less than 5	**All-Industrial**	8	49%	20%	78%
	Geo	4	3%	-3%	10%
	Non-Geo	4	90%	70%	110%
5 to 10	**All-Industrial**	8	31%	4%	58%
	Geo	4	65%	15%	115%
	Non-Geo	4	0%	0%	0%
10 to 20	**All-Industrial**	8	5%	-3%	13%
	Geo	4	0%	0%	0%
	Non-Geo	4	10%	-10%	30%
Greater than 20	**All-Industrial**	8	15%	-6%	37%
	Geo	4	32%	-18%	82%
	Non-Geo	4	0%	0%	0%
Don't know	**All-Industrial**	0	0%	0%	0%
	Geo	0	0%	0%	0%
	Non-Geo	0	0%	0%	0%

Table F-17
Equipment Share by Unit Type by Geo-Target (premise)

Equipment Share by Unit Type	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1	**All-Industrial**	8	45%	13%	76%
	Geo	4	37%	-10%	84%
	Non-Geo	4	70%	23%	117%
5	**All-Industrial**	8	7%	-4%	18%
	Geo	4	0%	0%	0%
	Non-Geo	4	30%	-17%	77%
7	**All-Industrial**	8	48%	15%	81%
	Geo	4	63%	16%	110%
	Non-Geo	4	0%	0%	0%

Table F-18
Average Values by Geo-Target (premise)

Average Values	Area	# Cases	Weighted Average	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Number of units of this size and type	**All-Industrial**	8	2	1	3
	Geo	4	4	1	6
	Non-Geo	4	1	1	1
Performance Rating Value (EER)	**All-Industrial**	5	3	2	4
	Geo	1	3	.	.
	Non-Geo	4	3	1	5
Qty. of Fans	**All-Industrial**	8	8	4	13
	Geo	4	14	7	20
	Non-Geo	4	4	1	6

Appendix G: Heating Results

G.1. Premise Weighted Results

G.1.1. Central Heating Plant

Table G-1
Percent of Facilities with Central Heating Plant of Type (Premise)

Heating Type	Geo-Target	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Percent of Facilities with a Central Heating Plant	**Overall**	**81%**	**44**	**64%**	**98%**
	Geo-Target	92%	14	80%	103%
	Non-Geo-Target	78%	30	58%	98%
Hot Water Boiler	**Overall**	**17%**	**33**	**4%**	**29%**
	Geo-Target	2%	10	-1%	5%
	Non-Geo-Target	24%	23	4%	44%
Steam Boiler	**Overall**	**5%**	**33**	**1%**	**9%**
	Geo-Target	3%	10	-1%	7%
	Non-Geo-Target	6%	23	1%	11%
Furnace	**Overall**	**27%**	**33**	**4%**	**50%**
	Geo-Target	72%	10	41%	103%
	Non-Geo-Target	6%	23	0%	11%
Direct Fired Radiant	**Overall**	**28%**	**33**	**3%**	**53%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	42%	23	14%	69%
Other Direct Heating	**Overall**	**8%**	**33**	**-2%**	**17%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	11%	23	-3%	26%
Packaged HVAC	**Overall**	**8%**	**33**	**-2%**	**18%**
	Geo-Target	23%	10	-6%	52%
	Non-Geo-Target	1%	23	0%	2%
Unknown	**Overall**	**7%**	**33**	**1%**	**13%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	10%	23	3%	17%

Table G-2
Percent of Units with Central Heating Plant of Type (Premise)

Heating Type	Geo-Target	Percent	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Electric	**Overall**	**0%**	**33**	**0%**	**0%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	0%	23	0%	0%
Natural Gas	**Overall**	**46%**	**33**	**17%**	**75%**
	Geo-Target	27%	10	-4%	57%
	Non-Geo-Target	56%	23	23%	88%
Propane	**Overall**	**26%**	**33**	**9%**	**44%**
	Geo-Target	13%	10	-3%	29%
	Non-Geo-Target	33%	23	7%	59%
Waste Heat	**Overall**	**0%**	**33**	**0%**	**0%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	0%	23	0%	0%
Purchased Steam	**Overall**	**0%**	**33**	**0%**	**0%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	0%	23	0%	0%
Fuel Oil	**Overall**	**26%**	**33**	**3%**	**49%**
	Geo-Target	59%	10	22%	97%
	Non-Geo-Target	10%	23	2%	19%
Wood	**Overall**	**1%**	**33**	**0%**	**2%**
	Geo-Target	1%	10	0%	1%
	Non-Geo-Target	1%	23	0%	2%
Unknown	**Overall**	**0%**	**33**	**0%**	**1%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	0%	23	0%	1%

Table G-3
Central Heating Plant Ouptut (Premise)

Detail	Geo-Target	Percent or Quantity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Output Per Unit (Mbtu/hr)	**Overall**	**854**	**23**	**333**	**1,374**
	Geo-Target	299	7	100	498
	Non-Geo-Target	1,537	16	727	2,347
Output Per Facility (Mbtu/hr)	**Overall**	**1,754**	**23**	**825**	**2,683**
	Geo-Target	953	7	293	1,613
	Non-Geo-Target	2,195	16	836	3,555
Percent of Units with Unknown Output Capacity	**Overall**	**56%**	**33**	**29%**	**82%**
	Geo-Target	23%	10	-6%	52%
	Non-Geo-Target	72%	23	49%	94%
Percent of Output Capacity used for Space Heat	**Overall**	**52%**	**23**	**30%**	**75%**
	Geo-Target	65%	7	37%	94%
	Non-Geo-Target	49%	16	23%	75%
Percent of Output Capacity used for Process Heat	**Overall**	**46%**	**23**	**23%**	**69%**
	Geo-Target	30%	7	1%	59%
	Non-Geo-Target	50%	16	24%	77%
Percent of Output Capacity used for Other Heat	**Overall**	**1%**	**23**	**0%**	**3%**
	Geo-Target	4%	7	0%	9%
	Non-Geo-Target	1%	16	0%	2%

Table G-4
Central Heating Plant Output Categories (Premise)

Detail	Geo-Target	Percent or Quantity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Less than 100 Mbtu	**Overall**	**3%**	**33**	**0%**	**6%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	4%	23	0%	8%
100-500	**Overall**	**22%**	**33**	**3%**	**41%**
	Geo-Target	82%	10	60%	103%
	Non-Geo-Target	5%	23	1%	10%
500-1,000	**Overall**	**21%**	**33**	**1%**	**41%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	26%	23	2%	51%
1000-5,000	**Overall**	**8%**	**33**	**3%**	**14%**
	Geo-Target	9%	10	-3%	22%
	Non-Geo-Target	8%	23	2%	15%
5,000-10,000	**Overall**	**1%**	**33**	**0%**	**1%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	1%	23	0%	2%
Greater than 10,000 Mbtu	**Overall**	**1%**	**33**	**0%**	**2%**
	Geo-Target	1%	10	0%	2%
	Non-Geo-Target	1%	23	0%	3%
Unknown Capacity	**Overall**	**44%**	**33**	**21%**	**67%**
	Geo-Target	9%	10	-4%	21%
	Non-Geo-Target	54%	23	28%	79%

Table G-5
Central Heating Plant Details (Premise)

Detail	Geo-Target	Percent or Quantity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Average Age per Unit	**Overall**	**14.7**	**30**	**11.8**	**17.6**
	Geo-Target	19.3	9	17.9	20.7
	Non-Geo-Target	12.4	21	10.2	14.7
Percent of Units Missing Age	**Overall**	**4%**	**33**	**0%**	**7%**
	Geo-Target	4%	10	-2%	9%
	Non-Geo-Target	4%	23	0%	8%
Average Annual Operating Hours	**Overall**	**1,917**	**24**	**1,404**	**2,431**
	Geo-Target	1,428	7	938	1,917
	Non-Geo-Target	2,114	17	1,400	2,828
Percent Missing Annual Operating Hours	**Overall**	**14%**	**33**	**2%**	**25%**
	Geo-Target	23%	10	-6%	53%
	Non-Geo-Target	9%	23	1%	16%
Average Percent of Capacity while Operating	**Overall**	**60%**	**25**	**33%**	**86%**
	Geo-Target	99%	8	98%	100%
	Non-Geo-Target	44%	17	23%	65%
Missing Percent Operating Capacity	**Overall**	**21%**	**33**	**5%**	**37%**
	Geo-Target	32%	10	-1%	65%
	Non-Geo-Target	16%	23	0%	32%
Average Steam Pressure (psi)	**Overall**	**25.1**	**8**	**7.2**	**43.0**
	Geo-Target	18.1	3	(0.3)	36.4
	Non-Geo-Target	27.7	5	4.5	51.0
Percent of Units with Unknown Steam Pressure	**Overall**	**95%**	**33**	**91%**	**99%**
	Geo-Target	97%	10	94%	101%
	Non-Geo-Target	94%	23	88%	100%
Average Steam Temperature (F°)	**Overall**	**176**	**7**	**136**	**215**
	Geo-Target	138	3	87	188
	Non-Geo-Target	206	4	196	217
Percent of Units with Unknown Steam Temperature	**Overall**	**97%**	**33**	**95%**	**99%**
	Geo-Target	97%	10	94%	101%
	Non-Geo-Target	97%	23	94%	100%

Table G-6
Central Heating Plant Age Categories (Premise)

Detail	Geo-Target	Percent or Quantity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Less than 5 years Old	**Overall**	**1%**	**33**	**0%**	**3%**
	Geo-Target	2%	10	0%	5%
	Non-Geo-Target	1%	23	0%	2%
5-10	**Overall**	**9%**	**33**	**0%**	**19%**
	Geo-Target	0%	10	0%	1%
	Non-Geo-Target	14%	23	-1%	29%
10-20	**Overall**	**45%**	**33**	**17%**	**74%**
	Geo-Target	11%	10	-3%	25%
	Non-Geo-Target	62%	23	33%	91%
20-30	**Overall**	**38%**	**33**	**13%**	**63%**
	Geo-Target	82%	10	64%	100%
	Non-Geo-Target	16%	23	0%	33%
30-40	**Overall**	**1%**	**33**	**0%**	**2%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	2%	23	0%	3%
40-50	**Overall**	**0%**	**33**	**0%**	**0%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	0%	23	0%	0%
50-60	**Overall**	**1%**	**33**	**0%**	**2%**
	Geo-Target	0%	10	0%	0%
	Non-Geo-Target	1%	23	0%	3%
Percent of Units with Unknown Age	**Overall**	**4%**	**33**	**1%**	**8%**
	Geo-Target	4%	10	-2%	10%
	Non-Geo-Target	4%	23	0%	8%

Table G-7
Central Heating Plant EE Ops

EE Opportunity	Geo-Target	Percent or Quantity	# of Cases	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Install Economizer	**Overall**	**20%**	**33**	**0%**	**39%**
	Geo-Target	82%	10	62%	103%
	Non-Geo-Target	2%	23	-1%	5%
Install Demand Control Ventilation	**Overall**	**21%**	**33**	**1%**	**41%**
	Geo-Target	8%	10	-4%	19%
	Non-Geo-Target	24%	23	0%	49%
Replace Furnace/Boiler	**Overall**	**42%**	**33**	**19%**	**65%**
	Geo-Target	82%	10	60%	103%
	Non-Geo-Target	31%	23	7%	56%
Install Set-back Controls	**Overall**	**46%**	**33**	**23%**	**69%**
	Geo-Target	82%	10	60%	103%
	Non-Geo-Target	36%	23	11%	61%
Replace Steam Traps	**Overall**	**3%**	**33**	**0%**	**7%**
	Geo-Target	8%	10	-4%	19%
	Non-Geo-Target	2%	23	-1%	5%
Regularly Tune Boilers	**Overall**	**28%**	**33**	**8%**	**49%**
	Geo-Target	9%	10	-4%	21%
	Non-Geo-Target	34%	23	9%	59%
Other	**Overall**	**2%**	**33**	**-1%**	**4%**
	Geo-Target	7%	10	-4%	18%
	Non-Geo-Target	0%	23	0%	0%

G.2. Miscellaneous Heating

G.2.1. Premise Weighted Results

G.2.1.1. Details

Table G-8
Number of Units of the Same Size and Type by Geo-Target (Premise)

Unit Type	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
1	**All-Industrial**	**5**	**51%**	**-4%**	**107%**
	Geo	3	9%	-17%	34%
	Non-Geo	2	92%	44%	139%
2	**All-Industrial**	**5**	**56%**	**1%**	**112%**
	Geo	3	10%	-17%	36%
	Non-Geo	2	100%	100%	100%
3	**All-Industrial**	**5**	**44%**	**-12%**	**99%**
	Geo	3	90%	64%	117%
	Non-Geo	2	0%	0%	0%
4	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
5	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
6	**All-Industrial**	**5**	**47%**	**-9%**	**103%**
	Geo	3	0%	0%	0%
	Non-Geo	2	92%	44%	139%
Don't know	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
Not Applicable	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%

Table G-9
Percent of Output Used for Space Heat by Geo-Target (Premise)

Percent of Output Used for Space Heat	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Less than 25%	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
25 to 50%	**All-Industrial**	**5**	**96%**	**87%**	**104%**
	Geo	3	91%	66%	117%
	Non-Geo	2	100%	100%	100%
50 to 75%	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
75 to 100%	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
Unknown	**All-Industrial**	**5**	**4%**	**-4%**	**13%**
	Geo	3	9%	-17%	34%
	Non-Geo	2	0%	0%	0%

Table G-10
Percent of Output Used for Process Heat by Geo-Target (Premise)

Percent of Output Used for Process Heat	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Less than 25%	**All-Industrial**	**5**	**44%**	**-12%**	**99%**
	Geo	3	90%	64%	117%
	Non-Geo	2	0%	0%	0%
25 to 50%	**All-Industrial**	**5**	**56%**	**1%**	**112%**
	Geo	3	10%	-17%	36%
	Non-Geo	2	100%	100%	100%
50 to 75%	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
75 to 100%	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%

Table G-11
Percent of Output for Other Uses by Geo-Target (Premise)

Percent of Output for Other Uses	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Less than 25%	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
25 to 50%	**All-Industrial**	**5**	**52%**	**-3%**	**107%**
	Geo	3	10%	-17%	36%
	Non-Geo	2	92%	44%	139%
50 to 75%	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
75 to 100%	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
Unknown	**All-Industrial**	**5**	**48%**	**-7%**	**103%**
	Geo	3	90%	64%	117%
	Non-Geo	2	8%	-39%	56%

Table G-12
Average Values by Geo-Target (Premise)

Average Values	Area	# Cases	Weighted Average	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Number of units of this size and type	**All-Industrial**	**5**	**3**	**3**	**3**
	Geo	3	3	2	3
	Non-Geo	2	3	2	3
Qty. of Fans	**All-Industrial**	**4**	**1**	**1**	**1**
	Geo	2	1	0	1
	Non-Geo	2	1	1	1

KEMA

Table G-13
Heating Equipment Type by Geo-Target (Premise)

Primary Fuel	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Electric baseboard heat	**All-Industrial**	**5**	**44%**	**-12%**	**99%**
	Geo	3	90%	64%	117%
	Non-Geo	2	0%	0%	0%
Unit heaters	**All-Industrial**	**5**	**9%**	**-5%**	**22%**
	Geo	3	9%	-17%	34%
	Non-Geo	2	8%	-39%	56%
Cabinet unit heaters	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
Packaged Terminal Heat Pump (PTHP)	**All-Industrial**	**5**	**4%**	**-4%**	**13%**
	Geo	3	9%	-17%	34%
	Non-Geo	2	0%	0%	0%
Other	**All-Industrial**	**5**	**48%**	**-8%**	**103%**
	Geo	3	1%	-2%	3%
	Non-Geo	2	92%	44%	139%
Don't know	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
Not Applicable	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%

Table G-14
Heating Fuel by Geo-Target (Premise)

Heating Fuel	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Electricity	**All-Industrial**	**5**	**44%**	**-11%**	**100%**
	Geo	3	91%	66%	117%
	Non-Geo	2	0%	0%	0%
Natural Gas	**All-Industrial**	**5**	**4%**	**-4%**	**13%**
	Geo	3	9%	-17%	34%
	Non-Geo	2	0%	0%	0%
Other	**All-Industrial**	**5**	**52%**	**-4%**	**107%**
	Geo	3	0%	0%	0%
	Non-Geo	2	100%	100%	100%
Don't know	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
Not Applicable	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%

Table G-15
Energy Star Equipment by Geo-Target (Premise)

Energy Star Equipment	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Yes	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
No	**All-Industrial**	**5**	**56%**	**1%**	**112%**
	Geo	3	10%	-17%	36%
	Non-Geo	2	100%	100%	100%
Don't Know	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
Not Applicable	**All-Industrial**	**5**	**48%**	**-7%**	**103%**
	Geo	3	99%	97%	102%
	Non-Geo	2	0%	0%	0%

Table G-16
Quantity of Fans by Geo-Target (Premise)

Quantity of Fans	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Yes	**All-Industrial**	**5**	**56%**	**0%**	**111%**
	Geo	3	9%	-17%	34%
	Non-Geo	2	100%	100%	100%
No	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
Don't Know	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
Not Applicable	**All-Industrial**	**5**	**44%**	**-12%**	**99%**
	Geo	3	90%	64%	117%
	Non-Geo	2	0%	0%	0%

Table G-17
Rated Output in Mbtuh by Geo-Target (Premise)

Rated Output in Mbtuh	Area	# Cases	Weighted Percent	Lower 80% Confidence Limit	Upper 80% Confidence Limit
Less than 100	**All-Industrial**	**5**	**4%**	**-4%**	**13%**
	Geo	3	0%	0%	0%
	Non-Geo	2	8%	-39%	56%
100 to 500	**All-Industrial**	**5**	**51%**	**-4%**	**107%**
	Geo	3	9%	-17%	34%
	Non-Geo	2	92%	44%	139%
500 to 1,000	**All-Industrial**	**5**	**44%**	**-11%**	**100%**
	Geo	3	91%	66%	117%
	Non-Geo	2	0%	0%	0%
1,000 to 5,000	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
5,000 to 10,000	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%
Greater than 10,000	**All-Industrial**	**5**	**0%**	**0%**	**0%**
	Geo	3	0%	0%	0%
	Non-Geo	2	0%	0%	0%