



Measurement Study

Predictive Validity

According to statistical analysis, not non-segmented utility bills

- ▶ **Sub-metered all equipment, not aggregated utility bills**
- ▶ **Predictive Validity: 99.9%**
 - Total Refrigeration Hours per year: 113,880*
 - Measurement Sample Hours: 1,344
- ▶ **Confidence Interval: +/- 4.6%**
- ▶ **Exceeds FDA drug approval standards (90% +/- 5%)**

Statistical Validity Calculator: <http://www.vanamburggroup.com/tool-statistical-validity.php>

FDA Approval Process: <http://www.fda.gov/Drugs/ScienceResearch/ucm301281.htm>

*250 sites *6 units * 24 hours per day * 365 days per year



Measurement Study

Measurement goals and technical information

Certified Results

Energy and maintenance savings from measurement location

Financial Impact

Financial impact for your locations

The Upgrade Process

How to Implement eTemp™ in your organization

Measurement Goals

Install and monitor eTemp™

Energy

Measure energy consumption of the system before and after eTemp™.

Mechanical

Measure mechanical shock on the refrigeration system before and after eTemp™.

ROI

Determine the payback period and capital efficiency of the project.

Measurement Process - 2 weeks

1 Install loggers

Install UL-certified meters on the designated refrigeration system(s).

2 Week 1

Monitor for (1) week under the existing configuration (no eTemp™).

3 Week 2

Install eTemp™, monitor the system for an additional (1) week.

4 Compare

Compare Logger Results: Week 1 and Week 2

UL Certified Compressor Logger

▶ **Manufacturer:**

- Dent Instruments, Inc.

▶ **Monitors:**

- Energy
- Compressor cycles



UL Certified Compressor Logger

- ▶ **Installed onto compressor “hot lead”**
- ▶ **Real-time accuracy**



Temperature Logger

- ▶ **Manufacturer:**

- Omega Engineering

- ▶ **Monitors:**

- Product temperature



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How to Implement eTemp™ in your organization

Compressor Logger Output - WIC - 1st Floor Produce

Data File Name:	Lawrenceville_Produce1st Floor_Pre.log
Logger Serial Number:	CT11080016
Description:	Dent Instruments
Logger Reset:	1/1/2001 12:00:00 AM
Lapsed Time Since Reset:	134290.00 hrs
On-Time Since Reset:	563.70 hrs (8004.5 kWh, \$1200.68)
Percent On Since Reset:	0.42 %
Connected Load:	14.2 kW
Energy Cost:	\$ 0.15 per kWh
Data Starts:	4/20/2016 10:00:00 AM
Data Ends:	4/27/2016 10:00:00 AM
Data Elapsed Time:	168.00 hrs
Estimated Annual Hours On	1573 hrs (22332.4 kWh, \$3349.8)
Number of Turn Ons:	979
Percent On:	17.95 %
Data On-Time:	30.16 hrs (428.3 kWh, \$64.24)
Average On-Time:	0.03 hrs (0.4 kWh, \$0.07)
Longest On-Time:	0.22 hrs (3.1 kWh, \$0.46)
Shortest On-Time:	< 0.01 hrs (0.0 kWh, \$0.00)
Number of Turn Offs:	979
Percent Off:	82.05 %
Data Off-Time:	137.84 hrs
Average Off-Time:	0.14 hrs
Longest Off-Time:	0.46 hrs
Shortest Off-Time:	< 0.01 hrs

Data File Name:	Lawrenceville_Produce1st Floor_Post.log
Logger Serial Number:	CT11080016
Description:	Dent Instruments
Logger Reset:	1/1/2001 12:00:00 AM
Lapsed Time Since Reset:	134458.50 hrs
On-Time Since Reset:	563.70 hrs (8004.5 kWh, \$1200.68)
Percent On Since Reset:	0.42 %
Connected Load:	14.2 kW
Energy Cost:	\$ 0.15 per kWh
Data Starts:	4/27/2016 10:30:00 AM
Data Ends:	5/4/2016 10:30:00 AM
Data Elapsed Time:	168.00 hrs
Estimated Annual Hours On	1188 hrs (16863.5 kWh, \$2529.5)
Number of Turn Ons:	642
Percent On:	13.56 %
Data On-Time:	22.78 hrs (323.4 kWh, \$48.51)
Average On-Time:	0.04 hrs (0.5 kWh, \$0.08)
Longest On-Time:	0.28 hrs (3.9 kWh, \$0.59)
Shortest On-Time:	< 0.01 hrs (0.0 kWh, \$0.00)
Number of Turn Offs:	643
Percent Off:	86.44 %
Data Off-Time:	145.22 hrs
Average Off-Time:	0.23 hrs
Longest Off-Time:	1.90 hrs
Shortest Off-Time:	< 0.01 hrs

Before/After Comparison

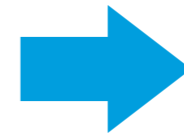
Energy Consumption and Mechanical Shock - WIC - 1st Floor Produce

Energy



Week 1

- ▶ kWh: 428.3
- ▶ Cost: \$64.24



Week 2

- ▶ kWh: 323.4
- ▶ Cost: \$48.51

24.5%
less

Mechanical Shock

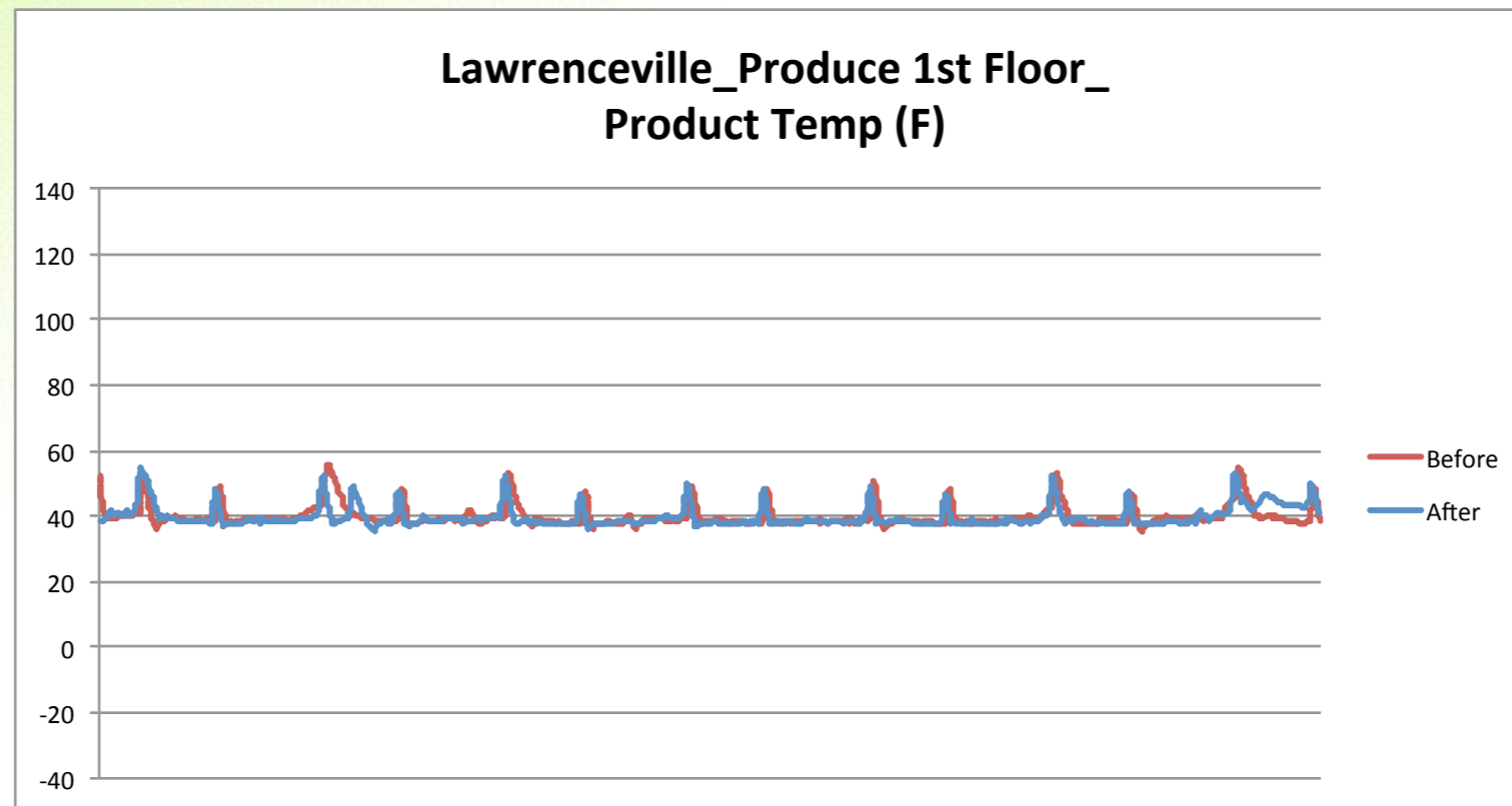


- ▶ 979 cycles



- ▶ 642 cycles

34.4%
less



Avg. Product Temp Before: 39.9 (F)
Avg. Product Temp After: 39.8 (F)

Compressor Logger Output - WIC - 2nd Floor Produce

Data File Name:	Lawrenceville_Produce Upstairs_Pre.log
Logger Serial Number:	CT11120090
Description:	Dent Instruments
Logger Reset:	3/9/2016 1:36:33 PM
Lapsed Time Since Reset:	1172.38 hrs
On-Time Since Reset:	416.10 hrs (2163.7 kWh, \$324.56)
Percent On Since Reset:	35.49 %
Connected Load:	5.2 kW
Energy Cost:	\$ 0.15 per kWh
Data Starts:	4/20/2016 10:00:00 AM
Data Ends:	4/27/2016 10:00:00 AM
Data Elapsed Time:	168.00 hrs
Estimated Annual Hours On	4399 hrs (22874.1 kWh, \$3431.1)
Number of Turn Ons:	474
Percent On:	50.22 %
Data On-Time:	84.36 hrs (438.7 kWh, \$65.80)
Average On-Time:	0.18 hrs (0.9 kWh, \$0.14)
Longest On-Time:	2.53 hrs (13.2 kWh, \$1.98)
Shortest On-Time:	0.05 hrs (0.2 kWh, \$0.04)
Number of Turn Offs:	474
Percent Off:	49.78 %
Data Off-Time:	83.64 hrs
Average Off-Time:	0.18 hrs
Longest Off-Time:	1.14 hrs
Shortest Off-Time:	< 0.01 hrs

Data File Name:	Lawrenceville_Produce Upstairs_Post.log
Logger Serial Number:	CT11120090
Description:	Dent Instruments
Logger Reset:	3/9/2016 1:36:33 PM
Lapsed Time Since Reset:	1340.88 hrs
On-Time Since Reset:	416.10 hrs (2163.7 kWh, \$324.56)
Percent On Since Reset:	31.03 %
Connected Load:	5.2 kW
Energy Cost:	\$ 0.15 per kWh
Data Starts:	4/27/2016 10:30:00 AM
Data Ends:	5/4/2016 10:30:00 AM
Data Elapsed Time:	168.00 hrs
Estimated Annual Hours On	3125 hrs (16250.4 kWh, \$2437.5)
Number of Turn Ons:	265
Percent On:	35.67 %
Data On-Time:	59.93 hrs (311.7 kWh, \$46.75)
Average On-Time:	0.23 hrs (1.2 kWh, \$0.18)
Longest On-Time:	1.05 hrs (5.5 kWh, \$0.82)
Shortest On-Time:	0.05 hrs (0.2 kWh, \$0.04)
Number of Turn Offs:	265
Percent Off:	64.33 %
Data Off-Time:	108.07 hrs
Average Off-Time:	0.41 hrs
Longest Off-Time:	1.79 hrs
Shortest Off-Time:	0.04 hrs

Before/After Comparison

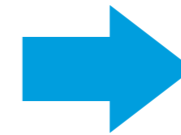
Energy Consumption and Mechanical Shock - WIC - 2nd Floor Produce

Energy



Week 1

- ▶ kWh: 438.7
- ▶ Cost: \$65.80



Week 2

- ▶ kWh: 311.7
- ▶ Cost: \$46.75

29.0%
less

Mechanical Shock

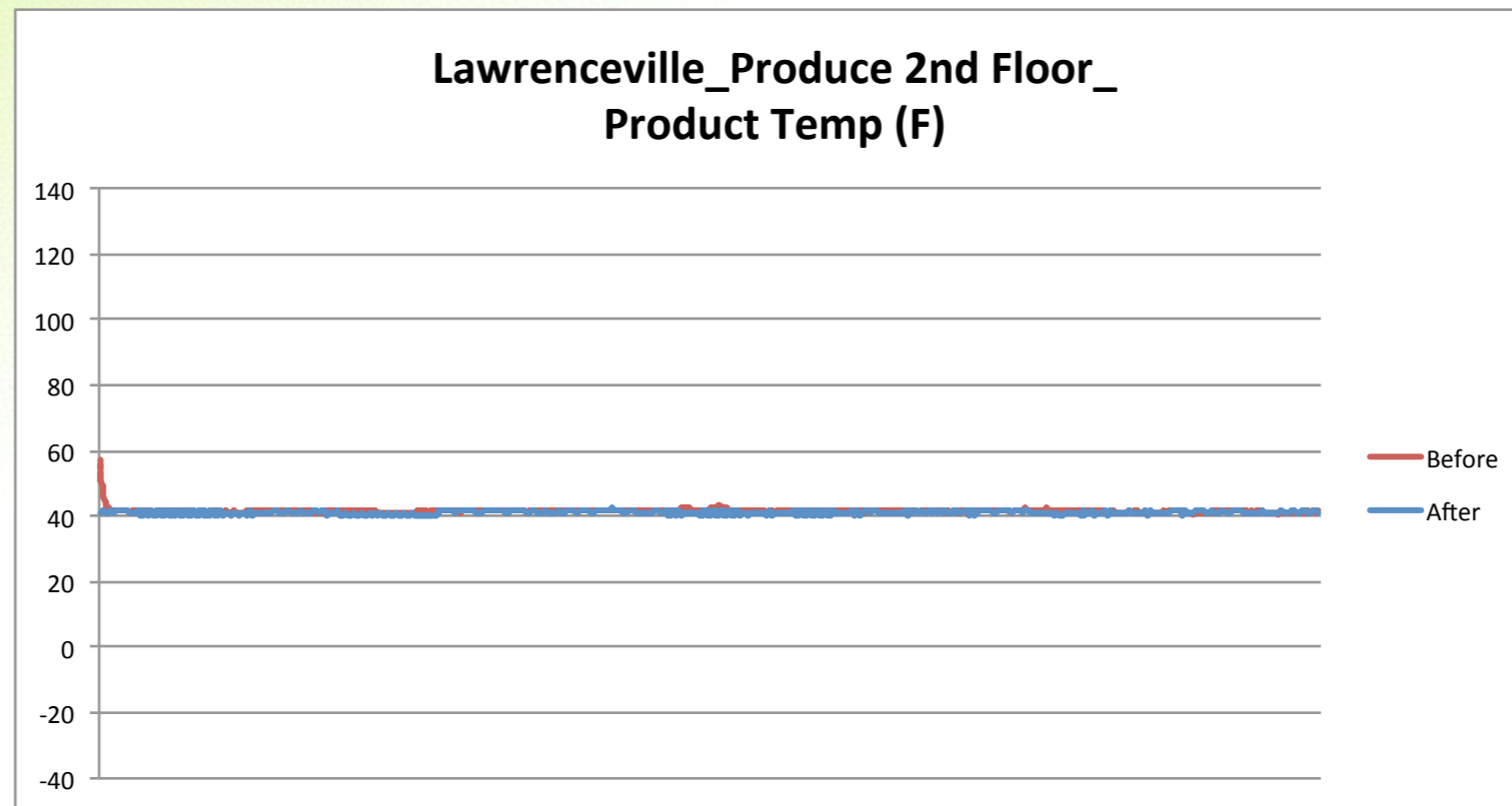


- ▶ 474 cycles



- ▶ 265 cycles

44.1%
less



Avg. Product Temp Before: 41.5 (F)
Avg. Product Temp After: 41.1 (F)

Compressor Logger Output - WIC - 2nd Floor Dairy

Data File Name:	Lawrenceville_Dairy WIC_Pre.log
Logger Serial Number:	CT15110080
Description:	DENT SMART LOGGER
Logger Reset:	1/27/2016 1:15:29 PM
Lapsed Time Since Reset:	2180.73 hrs
On-Time Since Reset:	923.20 hrs (3692.8 kWh, \$553.92)
Percent On Since Reset:	42.33 %
Connected Load:	4.0 kW
Energy Cost:	\$ 0.15 per kWh
Data Starts:	4/20/2016 10:00:00 AM
Data Ends:	4/27/2016 10:00:00 AM
Data Elapsed Time:	168.00 hrs
Estimated Annual Hours On	5479 hrs (21915.4 kWh, \$3287.3)
Number of Turn Ons:	224
Percent On:	62.54 %
Data On-Time:	105.07 hrs (420.3 kWh, \$63.04)
Average On-Time:	0.47 hrs (1.9 kWh, \$0.28)
Longest On-Time:	4.22 hrs (16.9 kWh, \$2.53)
Shortest On-Time:	0.05 hrs (0.2 kWh, \$0.03)
Number of Turn Offs:	223
Percent Off:	37.46 %
Data Off-Time:	62.93 hrs
Average Off-Time:	0.28 hrs
Longest Off-Time:	1.22 hrs
Shortest Off-Time:	< 0.01 hrs

Data File Name:	Lawrenceville_Dairy WIC_Post.log
Logger Serial Number:	CT15110080
Description:	DENT SMART LOGGER
Logger Reset:	1/27/2016 1:15:29 PM
Lapsed Time Since Reset:	2325.23 hrs
On-Time Since Reset:	923.20 hrs (3692.8 kWh, \$553.92)
Percent On Since Reset:	39.70 %
Connected Load:	4.0 kW
Energy Cost:	\$ 0.15 per kWh
Data Starts:	4/26/2016 10:30:00 AM
Data Ends:	5/3/2016 10:30:00 AM
Data Elapsed Time:	168.00 hrs
Estimated Annual Hours On	4158 hrs (16630.3 kWh, \$2494.5)
Number of Turn Ons:	150
Percent On:	47.46 %
Data On-Time:	79.73 hrs (318.9 kWh, \$47.84)
Average On-Time:	0.53 hrs (2.1 kWh, \$0.32)
Longest On-Time:	3.30 hrs (13.2 kWh, \$1.98)
Shortest On-Time:	0.12 hrs (0.5 kWh, \$0.07)
Number of Turn Offs:	149
Percent Off:	52.54 %
Data Off-Time:	88.27 hrs
Average Off-Time:	0.59 hrs
Longest Off-Time:	2.35 hrs
Shortest Off-Time:	< 0.01 hrs

Before/After Comparison

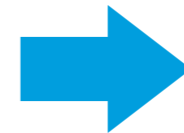
Energy Consumption and Mechanical Shock - WIC - 2nd Floor Dairy

Energy



Week 1

- ▶ kWh: 420.3
- ▶ Cost: \$63.04



Week 2

- ▶ kWh: 318.9
- ▶ Cost: \$47.84

24.1%
less

Mechanical Shock

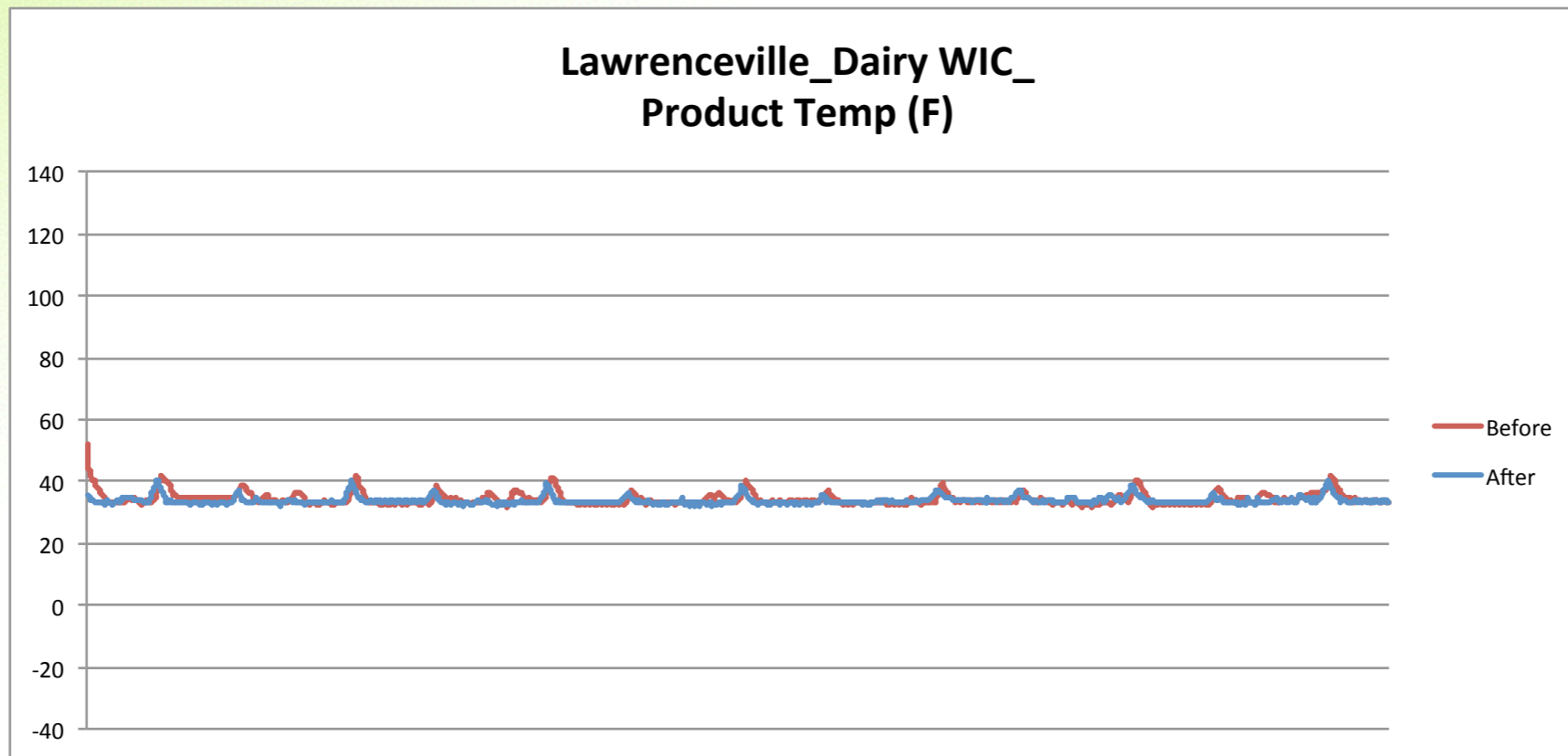


- ▶ 224 cycles



- ▶ 150 cycles

33.0%
less



Avg. Product Temp Before: 34.3 (F)

Avg. Product Temp After: 33.8 (F)

Compressor Logger Output - WIF - 1st Floor Meat Freezer

Data File Name:	Lawrenceville_WIF_Pre.log
Logger Serial Number:	CT12010060
Description:	DENT SMART LOGGER
Logger Reset:	1/1/2001 12:00:00 AM
Lapsed Time Since Reset:	134290.00 hrs
On-Time Since Reset:	312.50 hrs (3812.5 kWh, \$571.88)
Percent On Since Reset:	0.23 %
Connected Load:	12.2 kW
Energy Cost:	\$ 0.15 per kWh
Data Starts:	4/20/2016 10:00:00 AM
Data Ends:	4/27/2016 10:00:00 AM
Data Elapsed Time:	168.00 hrs
Estimated Annual Hours On	2155 hrs (26286.1 kWh, \$3942.9)
Number of Turn Ons:	512
Percent On:	24.60 %
Data On-Time:	41.32 hrs (504.1 kWh, \$75.62)
Average On-Time:	0.08 hrs (1.0 kWh, \$0.15)
Longest On-Time:	0.54 hrs (6.6 kWh, \$0.99)
Shortest On-Time:	< 0.01 hrs (0.0 kWh, \$0.00)
Number of Turn Offs:	513
Percent Off:	75.40 %
Data Off-Time:	126.68 hrs
Average Off-Time:	0.25 hrs
Longest Off-Time:	0.77 hrs
Shortest Off-Time:	0.02 hrs

Data File Name:	Lawrenceville_WIF_Post.log
Logger Serial Number:	CT12010060
Description:	DENT SMART LOGGER
Logger Reset:	1/1/2001 12:00:00 AM
Lapsed Time Since Reset:	134458.50 hrs
On-Time Since Reset:	312.50 hrs (3812.5 kWh, \$571.88)
Percent On Since Reset:	0.23 %
Connected Load:	12.2 kW
Energy Cost:	\$ 0.15 per kWh
Data Starts:	4/27/2016 10:30:00 AM
Data Ends:	5/4/2016 10:30:00 AM
Data Elapsed Time:	168.00 hrs
Estimated Annual Hours On	1639 hrs (20000.5 kWh, \$3000.0)
Number of Turn Ons:	277
Percent On:	18.71 %
Data On-Time:	31.44 hrs (383.6 kWh, \$57.54)
Average On-Time:	0.11 hrs (1.4 kWh, \$0.21)
Longest On-Time:	0.40 hrs (4.9 kWh, \$0.74)
Shortest On-Time:	< 0.01 hrs (0.0 kWh, \$0.00)
Number of Turn Offs:	277
Percent Off:	81.29 %
Data Off-Time:	136.56 hrs
Average Off-Time:	0.49 hrs
Longest Off-Time:	1.93 hrs
Shortest Off-Time:	0.18 hrs

Before/After Comparison

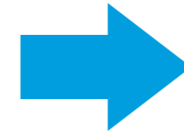
Energy Consumption and Mechanical Shock - WIF - 1st Floor Meat

Energy



Week 1

- ▶ kWh: 504.1
- ▶ Cost: \$75.62



Week 2

- ▶ kWh: 383.6
- ▶ Cost: \$57.54

23.9%
less

Mechanical Shock

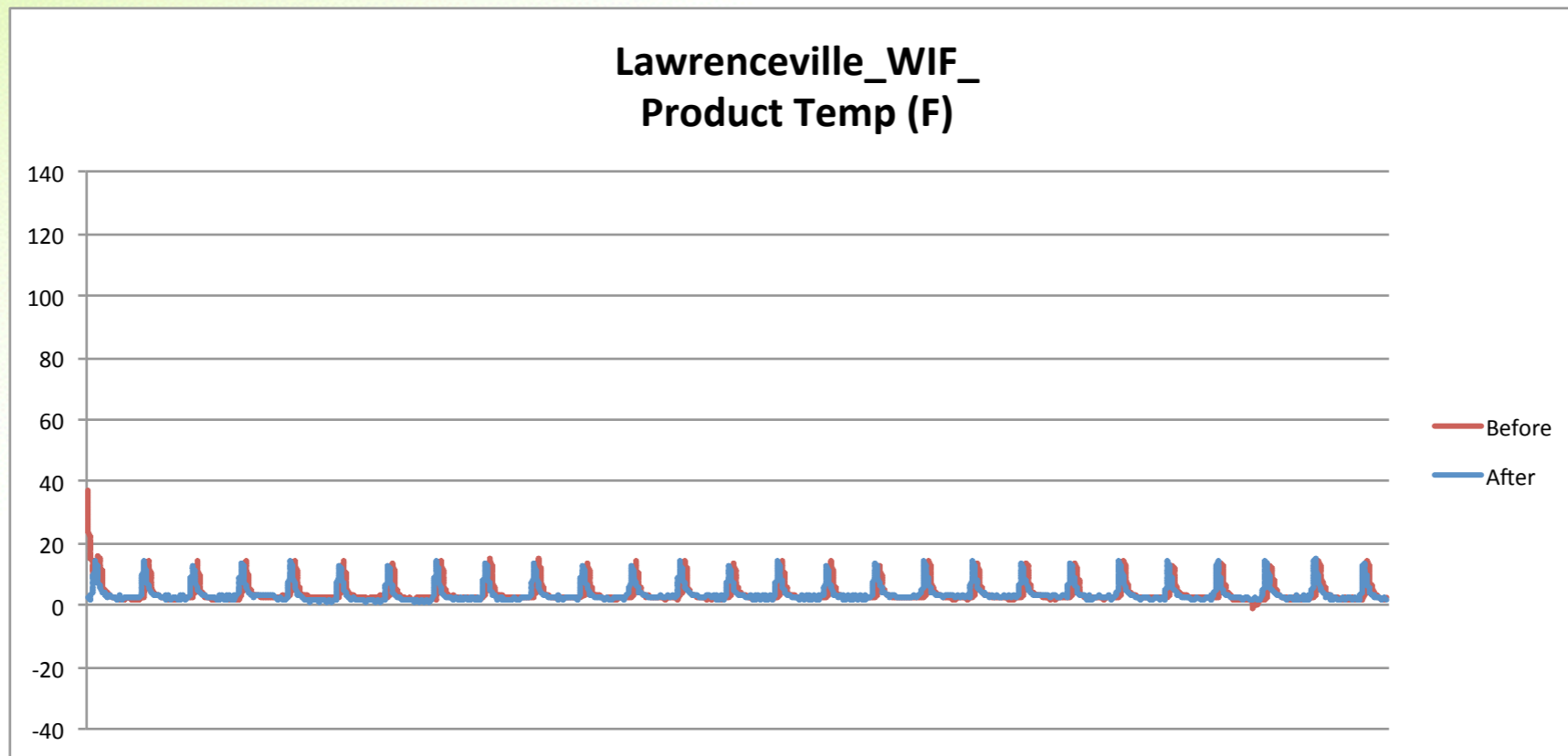


- ▶ 512 cycles



- ▶ 277 cycles

45.9%
less



Avg. Product Temp Before: 3.8 (F)
Avg. Product Temp After: 3.8 (F)

Measurement Process

Measurement goals and technical information

Certified Results

Energy and maintenance savings from measurement location

Financial Impact

Financial impact for your locations

The Upgrade Process

How to Implement eTemp™ in your organization

Financial Impact

Current Costs

(\$.11/kWh and \$500/unit/year WI \$300/unit/year RI)

	kWh/unit (Annual)	Units	Total kWh	Energy Cost (\$)	Maint. Cost	Total
Walk-In Cooler	21,000	7	147,000	\$16,170	\$3,500	\$19,670
Walk-In Freezer	25,000	2	50,000	\$5,500	\$1,000	\$6,500
Reach-In Cooler	7,500	4	30,000	\$3,300	\$1,200	\$4,500
Total		13	227,000	\$24,970	\$5,700	\$30,670

Investment Summary

	Single Location
Energy Savings	\$6,342
Mechanical Savings	\$2,246
Total Savings	\$8,588
eTemp™ Investment	\$11,590
IRR	74.1%
Payback Months	16.2

Carbon Footprint Impact

System-wide

Total Refrig. Consumption (kWh)

227,000

Energy Savings %

25.4%

Total kWh Savings

57,658

Reduction in CO2 Emissions (Tons)

44



36 Acres

Your installation of eTemp™ eliminates 44 tons of CO₂ annually from the environment. The equivalent of this many acres of pine forest.

Source: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

Measurement Process

Measurement goals and technical information

Certified Results

Energy and maintenance savings from measurement location

Financial Impact

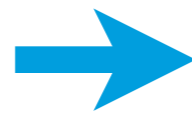
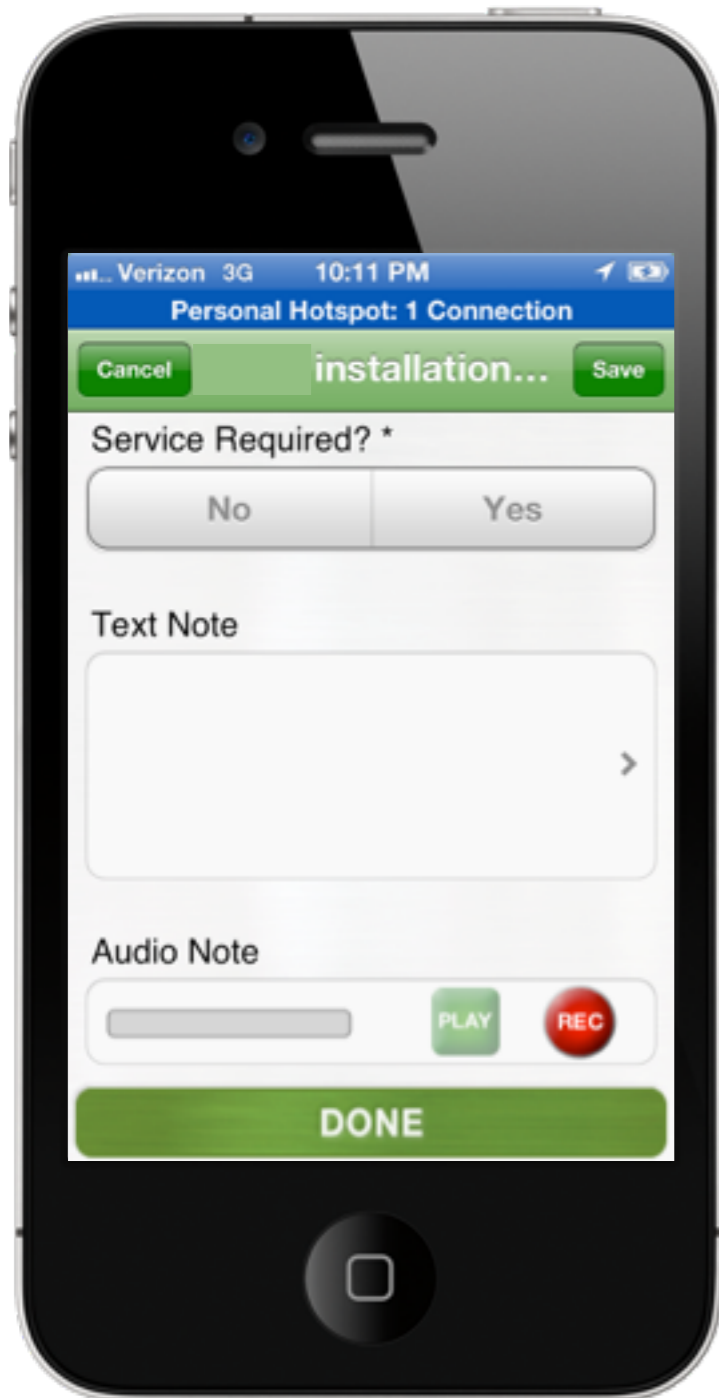
Financial impact for your locations

The Upgrade Process

How to Implement eTemp™ in your organization

Easy Reporting and Installation

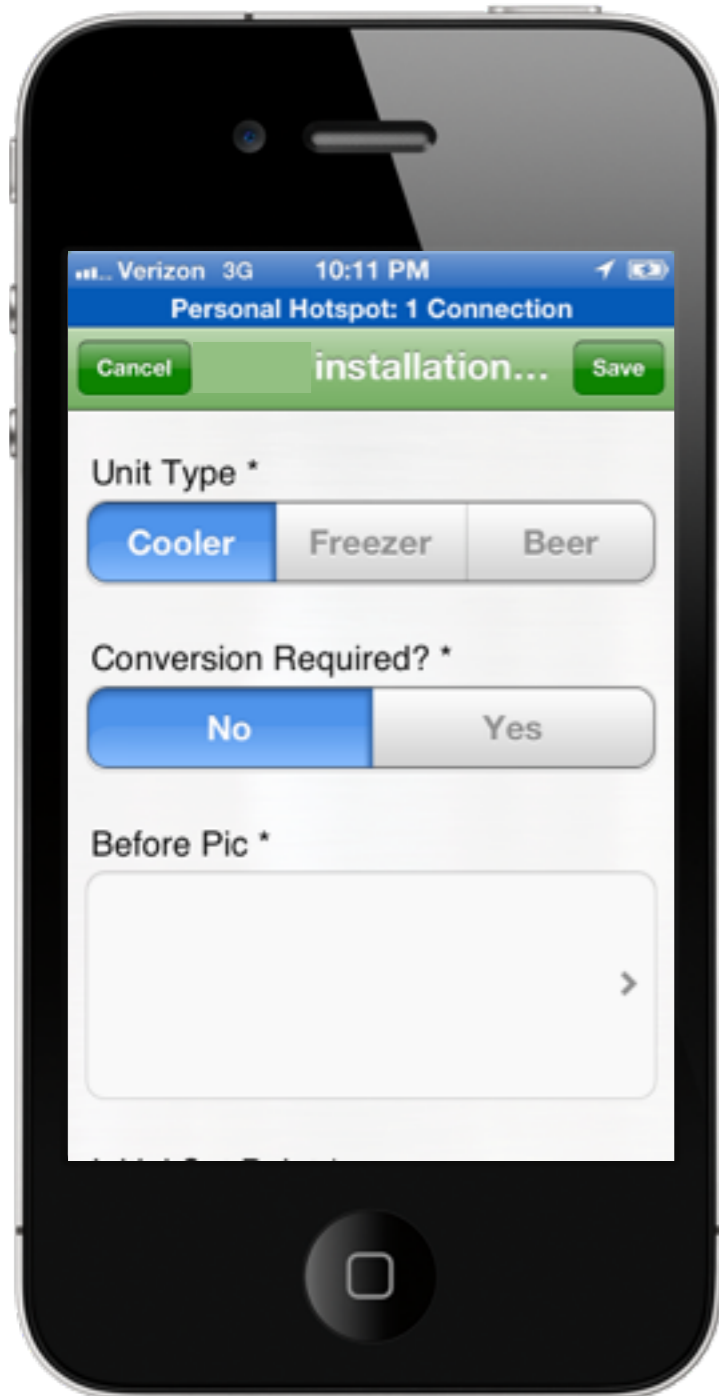
Our proprietary iPhone field app = Intel + Accountability



- ▶ **Absolutely Zero Downtime**
- ▶ **No Employee Time Required**
- ▶ **100% Turn-key**

Easy Reporting and Installation

Implementation by eTemp * *minimum order required*



Before Pic	Initial Set Point	Installation Pic	Final Set Point	Unit Installed	Differential set to minimum?	After Pic	Service Required?
	0		0	EC-101	1		No
	0		0	EC-101	1		No
	38		38	EC-101	1		No
	0		0	EC-101	1		No
	0		0	EC-101	1		No
	37		37	EC-101	1		No
	38		38	EC-101	1		No
	0		0	EC-101	1		No

- ▶ **Fully inclusive of:**
 - ▶ Labor, travel
 - ▶ Lifetime warranty
 - ▶ Energy audit
 - ▶ Thermostat upgrades as needed
 - ▶ Asset inventory

Appendix

- ▶ **Affidavit of Authenticity**
- ▶ **Detailed logger results**