



505 Nicollet Mall
PO Box 59038
Minneapolis, MN 55459-0038

PUBLIC DOCUMENT
Trade Secret Information has been Excised

July 2, 2018

Mr. Daniel Wolf
Executive Secretary
Minnesota Public Utilities Commission 350
Metro Square Building
121 East Seventh Place, Suite 350
St. Paul, MN 55101-2147

Re: CenterPoint Energy's Request for Change in Demand Units
Docket No. G008/M-18-_____

Dear Mr. Wolf:

Pursuant to Minn. Rule 7825.2910, Subp. 2, CenterPoint Energy Resources Corp. d/b/a/ CenterPoint Energy Minnesota Gas ("CenterPoint Energy" or the "Company") submits a Request for a Change in Demand Units (Request). CenterPoint Energy requests approval to implement its changes effective November 1, 2018.

CenterPoint Energy requests to increase overall demand costs on November 1, 2018, by approximately \$8.5 million, which reflects a renegotiated long-term agreement with Northern Natural Gas that includes requested growth on our distribution system. Due to the increased costs, the estimated per-unit charge should increase by \$0.00565 per therm from June 1, 2018 rates. The annual effect on a residential heating customer using 890 therms (2017 Rate Case residential use-per customer) is an increase of about \$5.03.

CenterPoint Energy has designated information in this document trade secret. Specifically, Exhibit A, pages 1 and 2; Exhibit B3; and Exhibits C1, C2 and C3. The information meets the definition of trade secret in Minn. Stat. § 13.37, subd.1(b), as follows: (1) the information was supplied by CenterPoint Energy, the affected organization; (2) CenterPoint Energy has taken all reasonable efforts to maintain the secrecy of the information, including protecting it from disclosure in this document; and (3) the protected information contains gas supply contract information which derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by other persons who can obtain economic value from its disclosure or use.

The attached pages detail the implementation of CenterPoint Energy's 2018-2019 Heating Season Supply Plan. Feel free to contact me at 612-321-5078 if you have any questions.

Sincerely,

/s/ _____

Marie Doyle
Regulatory Analyst
Regulatory Services

Marie.Doyle@CenterPointEnergy.com

ADDITIONAL INFORMATION
Minn. Rule 7829.1300, Subp. 3
CenterPoint Energy

- A. The name, address, and telephone number of the utility:

CenterPoint Energy Resources Corp., d/b/a/ CenterPoint Energy Minnesota Gas
505 Nicollet Mall
P.O. Box 59038
Minneapolis, MN 55459-0038
(612) 372-4664

- B. The name, address, and telephone number of the attorney for the utility:

Steven Clay
CenterPoint Energy
505 Nicollet Mall
P.O. Box 59038
Minneapolis, MN 55459-0038
(612) 321-4606
Steven.Clay@CenterPointEnergy.com

- C. The date of the filing and the date the proposed rate or service change will go into effect:

Date Filed:	July 2, 2018
Effective Date:	November 1, 2018

- D. The statute that the utility believes controls the time frame for processing the filing:

CenterPoint Energy is unaware of any statute that controls the time frame for processing this filing.

- E. The signature and title of the utility employee responsible for the filing:

_____/s/_____
Marie Doyle
Regulatory Analyst
(612) 321-5078
Marie.Doyle@CenterPointEnergy.com

SUMMARY OF MISCELLANEOUS TARIFF FILING

Minn. Rule 7829.1300, Subp. 1

CenterPoint Energy

Filing Upon a Change in Demand

Minn. Rule 7829.1300, Subp. 2

A filing for a change in demand is required when there is an increase or decrease in demand, a redistribution of demand percentages among classes, or if one form of demand is exchanged for another. CenterPoint Energy has renegotiated its contract with Northern Natural Gas effective November 1, 2018. The new contract provides additional transportation capacity to meet growth in both residential and commercial/industrial needs beginning in 2019 and going forward. The per-unit demand costs will increase on November 1 by \$0.00565 per therm from June 1, 2018 rates and the annual effect on a residential heating customer using 890 therms (2017 Rate Case residential use-per- customer) is an increase of about \$5.03.

Filing Upon a Change in Demand
Minn. Rule 7829.1300, Subp. 2
CenterPoint Energy
November 2018

7825.2910 FILING BY GAS UTILITIES

Subp.2. Filing upon a change in demand. Gas utilities shall file for a change in demand to increase or decrease demand, to redistribute demand percentages among classes, or to exchange one form of demand for another. A filing must contain:

A. A description of the factors contributing to the need for changing demand.

Pipeline Entitlement:

Northern Natural Pipeline –

CenterPoint Energy's (CPE) 2007 fifteen-year contract¹ with Northern Natural Gas (NNG) for transportation service is scheduled to end on October 31, 2019. CenterPoint Energy began reviewing its need for additional pipeline transportation capacity to meet current and future customers' demand and alternatives for pipeline services in 2015, four years prior to the 2007 contract's stated end-date, because some of the alternatives considered would require a long lead time, involve negotiation of complex agreements, require regulatory review and approval, and/or necessitate the completion of construction. The following alternatives were considered:

- CenterPoint builds new pipeline,
- Continue current contract negotiated rates through 2021, then be subject to maximum tariff rates with growth election rights, or
- Negotiate a new agreement with NNG.

Alternatives Considered:

1. Build New Pipeline Alternative: CenterPoint Energy believed that due to the potential time required to build a new pipeline, it needed to begin its review in 2015, four years prior to the contract's stated end-date to provide sufficient time.

CenterPoint Energy's engineering department and NNG conducted bypass studies that explored the feasibility of the Company to build its own pipeline to replace NNG's service for a majority of the load currently served by NNG. The studies conducted by both companies demonstrated a bypass pipeline connecting to both Northern Border Pipeline and Viking Gas Transmission could be built, but the studies concluded that this was not the most feasible option.

There are risks associated with going forward with an arrangement to build a pipeline. There can be delays in construction due to governmental reviews, environmental impacts, eminent domain and land acquisition complications, and other potential delays. There could be unexpected costs including increased cost for steel or other materials and additional cost to attract qualified labor. With an NNG contract, these risks would be eliminated.

¹ See Docket G-008/M-07-561

CenterPoint Energy first detailed its costs and timing to build approximately 175 miles of bypass pipeline (98.5 miles connecting to Northern Border Pipeline and 77 miles connecting to Viking Gas Transmission), which would take until 2022 to complete at a cost of \$821.2 million. This translates to an initial annual increase in cost to customers of nearly \$112 million beginning in 2022 and over 173% more than the current cost of services provided by NNG. These costs would become a rate base item. Due to capital cost, initial rates to customers, and other risk considerations, it was determined that building a new pipeline would not be the best option for Minnesota ratepayers. Therefore, CenterPoint Energy began contract negotiations with NNG in July 2016.

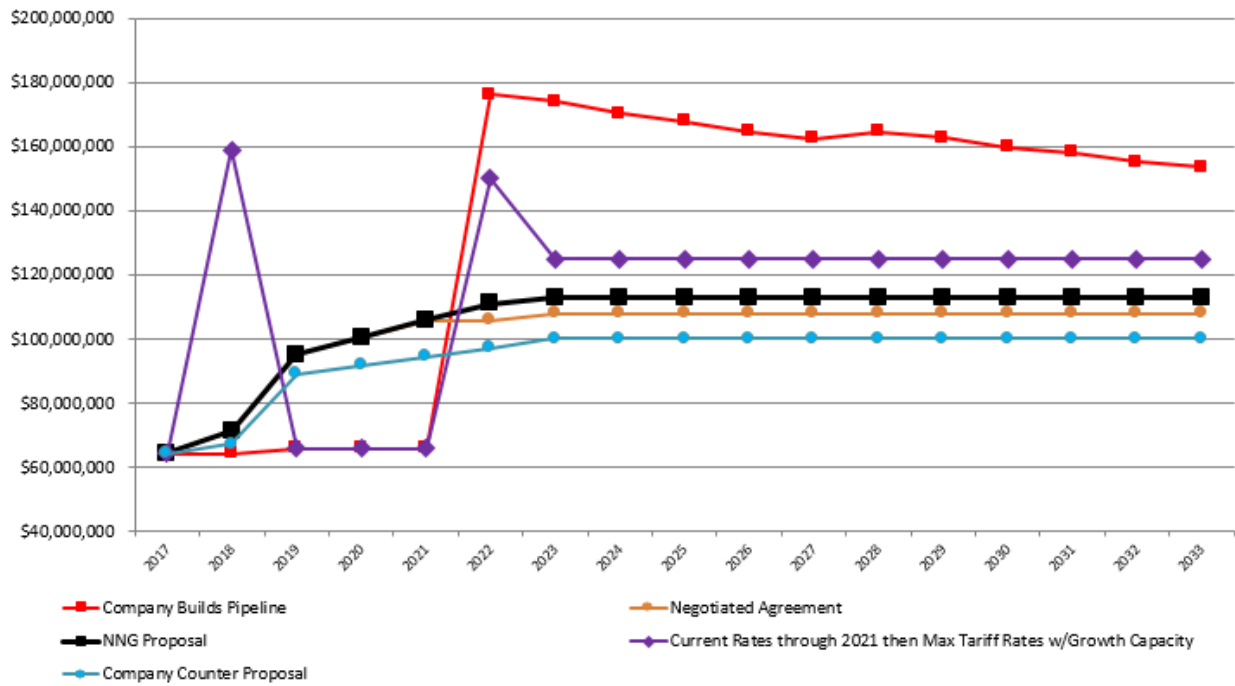
2. Continue to purchase capacity from NNG: CenterPoint Energy had several objectives in obtaining a new agreement with NNG including: rate control, supply diversity, flexibility, reliability and simplified structure.

To begin the negotiation process (to either continue and extend existing contract or to enter a new contract with NNG), CenterPoint Energy provided NNG with a list of town border stations where it needs more capacity and a list of other modifications it desired to make to the contract structure. NNG then provided CenterPoint Energy with an initial proposal that would include the costs to expand our requested entitlement level for defined needs in 2019, particularly in the constrained outstate parts of our distribution territory. In addition, a large south metro expansion in Lakeville / Credit River was outlined as needed in 2023. Under the existing contract, all construction in the Company's non-discounted areas, comprised in large part by the outstate area, required CenterPoint Energy to pay a contribution in aid of construction (CIAC) for growth. The contract allowed the Company to adjust its discount rate to cover the CIAC. NNG's initial proposal for the new contract incorporated the same effect by raising the discounted rate above current levels a year early to allow collection of estimated construction costs before construction would begin in the spring of 2019 and again in 2023. The total entitlement from Northern Natural would then go to maximum tariff rates beginning in 2023. CenterPoint Energy rejected this option because of the nearly doubling of cost for services compared to the current rates and the two short term spikes in the rates to pay for upgrades to Northern Natural's pipeline infrastructure.

During 2016 and 2017 CenterPoint Energy met with NNG to negotiate terms and conditions of a new long-term agreement. While the current contract would be valid until October 31, 2019, increased entitlement needs at key locations, with significant cost, led the CenterPoint Energy team to move the effective date up one year to provide for rate-covered expansion costs spread over a 16-year contract term. Other benefits of the negotiated contract vs. building a pipeline include (a) access to a greater number of gas supply sources due to the size and breath of Northern Natural's pipeline system, (b) flexibility of hourly gas flow variations (1/16th of daily entitlement) that is 50% greater than the hourly flow rates available (1/24th of daily entitlement) on other pipelines, and (c) NNG offers on-system storage services and system management service, both used for daily balancing of gas flows – these services would not be available on the proposed bypass pipeline.

A precedent agreement, subject to FERC approval, was signed in October 2017. Details are considered confidential prior to FERC filing.

Northern Natural Gas - Pipeline Services Rate Scenarios



The graph above illustrates the rate negotiation scenarios that were considered during the contract extension. When reviewing the various scenarios, note that the cost of the negotiated agreement (yellow line) fell between NNG initial proposal (black line) and CenterPoint's counter proposal (blue line). Note graphically the estimated expense of building a new pipeline and continuing a limited amount of Northern Natural service at non-bypassable town border stations (red line), and the drastically increased cost to customers peaking at \$176 million annual cost in 2022. CenterPoint Energy believes it reached the best possible outcome that balances increased service levels and cost for the pipeline services required to serve its distribution customers and growth through at least 2023.

Details of the negotiated contract:

1. Annual Demand Costs /volumes

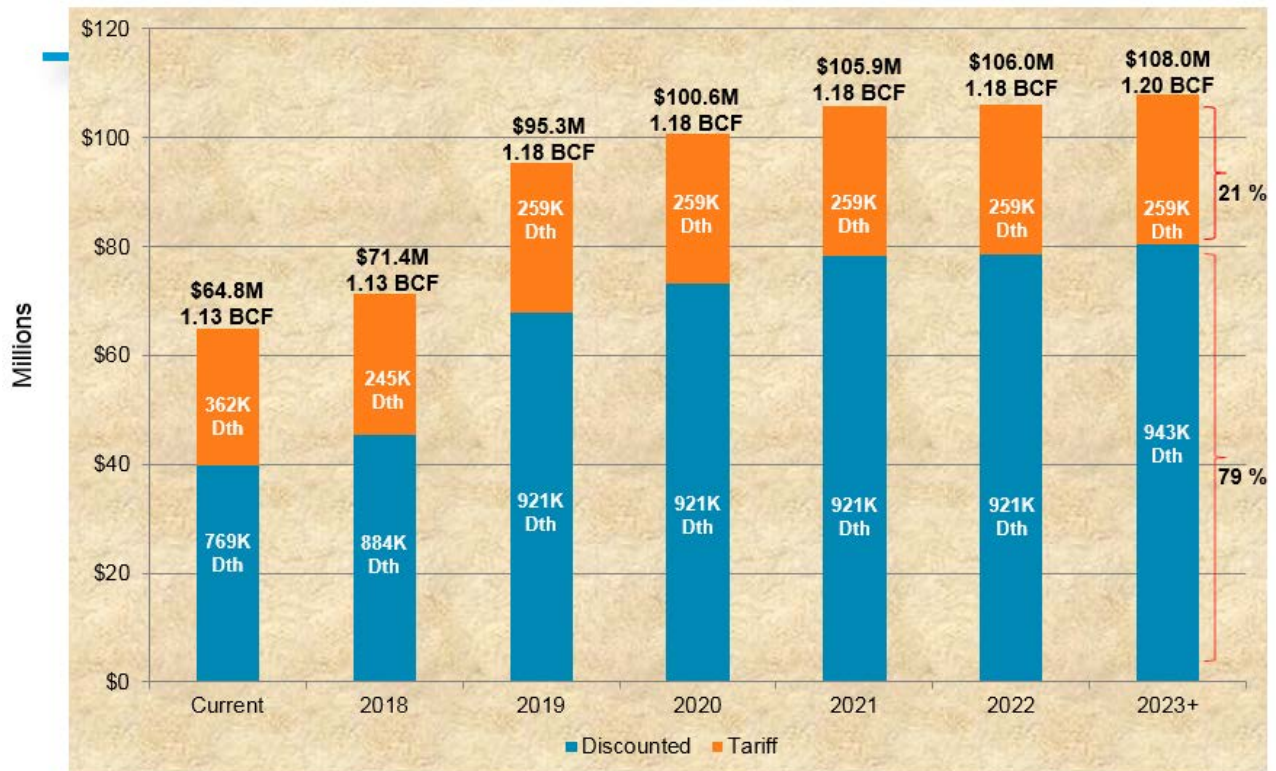
Our current annual NNG demand cost is \$64.8M. With the request to increase volumes for growth, the contract allows for a gradual increase in rates over the first 5 years versus a significant rate increase in one year for the upcoming winter season. Starting in 2023, the rates will remain stable through the end of the term. Under the new contract agreement, 79% of contracted capacity will be at discounted rates and 21% at maximum tariff rates.

All maximum tariffed rates of approximately \$26 million beginning in 2019 are subject to future FERC rate cases and subsequent approved increases. However, in an effort to protect the maximum rate portion of the portfolio, CenterPoint Energy negotiated the following rate caps as

part of the contract:

- 2018-2023 - \$36.8M,
- 2023-2028 - \$39.3M,
- 2028-2034 - \$41.7M.

The graph below summarizes the maximum daily entitlements for discount and non-discounted portions of the negotiated contract along with the annual reservation cost of that entitlement.



The new contract is slated to be effective following FERC review on November 1, 2018 and extends through October 31, 2034. It provides additional transportation capacity to meet growth in both residential and commercial/industrial needs beginning in 2019, with planned increases by 2023 totaling 71,748 Dth/day and rights for growth in each odd-year. The increase in rates in 2019 represent additional capacity of 49,748 Dth/day (35,118 Dth/day discounted and 14,630 non-discounted) and another increase in capacity of 22,000 Dth/day (discounted) in 2023. Due to the expected population growth in the Minneapolis metro area by approximately 1 million people over the next 20 years, CenterPoint Energy negotiated entitlement growth options that may be elected every odd numbered year during the term of the new agreement.

2. Customer impact

CenterPoint Energy estimates an increase in the residential average cost for demand for the 2018-2019 heating season of \$5.03 $((\$0.08561 / \text{therm} - \$0.07996 / \text{therm}) * 890 \text{ average residential therms/year} = \$5.03)$. Without the negotiated discount, the average annual residential demand cost would increase from \$76 to \$110 per year to reflect full NNG tariffed

rates.

Conclusion:

CenterPoint Energy worked diligently to explore transportation service options for its Minnesota customers, and ultimately was able to use the threat of bypass to negotiate reasonable prices and other beneficial terms and conditions for service to its customers.

The benefits of the negotiated contract include:

- Rate Control – The negotiated contract includes discounted and stable rates in the competitive Minneapolis market and avoids the capital expenditures (and risk of cost over-runs) that would be required with building a new pipeline. Additionally, the negotiated contract includes rate caps on future increases in non-discounted/non-bypassable areas.
- Supply Diversity – The negotiated contract maintains access to numerous supply basins at multiple receipt points and pipeline interconnects which enhances availability and reliability of gas supplies.
- Flexibility – NNG's tariff allows hourly gas flow variations that is 50% greater than the hourly flow rates available on other pipelines and it includes daily balancing and storage services. The negotiated contract allows for capacity growth and reduction rights periodically throughout the term that would be used to keep entitlements balanced with customers' demand. Additionally, seasonal entitlement is based on our customers' load profile compared to other pipelines that could require contracts for fixed daily entitlements year-round.
- Simplified structure and contract administration – The negotiated contract collapses six service agreements to three TFX service agreements, reducing workload and simplifying the daily gas flow scheduling and administration of the contract.

CenterPoint Energy has included the bypass analysis and the contract precedent agreement in Non-Public attachments to provide more detailed information.

Viking Pipeline -

CenterPoint Energy's entitlements on the Viking pipeline will remain the same.

NGPL –

CenterPoint current storage and transportation contracts expire April 30, 2019 and contract negotiations are ongoing at this time. The Company reflected in this filing a small decrease to current NGPL cost estimates due to a recent NGPL rate case that decreased a portion of our contracted costs.

B. The Utility's Design Day demand by customer class and the change in Design Day demand, if any, necessitating the demand revision.

Design Day Model:

CenterPoint Energy's Design Day Estimate for 2018-2019

	Current Year 2018-2019	Prior Year 2017-2018
Requirements		
Calculated Design Day	1,373,000	1,357,000
<u>Physical Reserve</u>	<u>36,000</u>	<u>36,000</u>
Total Requirements	1,409,000	1,393,000
 Supply		
Pipeline Entitlement	1,129,596	1,129,596
Underground Storage (UG)	50,000	50,000
Liquefied Natural Gas (LNG)	72,000	72,000
<u>Propane</u>	<u>158,000</u>	<u>158,000</u>
Net Supply	1,409,596	1,409,596
 Reserve Margin Range		
Available Capacity Net Requirements	36,596	16,596
As a Percentage of Total Requirements	2.6%	1.2%
Available including Physical Reserve	596	52,596
(Reserve / Design Day)	0.0%	3.7%

CenterPoint Energy's Design Day modeling process was completed this year by adding the results of two models together, as described below. The estimation methodology used by CenterPoint Energy is the same as approved in the last several demand entitlement requests. The latest approval was made on March 21, 2018, for the 2017-2018 Heating season in Docket No. G-008/M-17-533.

(1) Traditional Design Day Model:

CenterPoint Energy's traditional firm Design Day forecasting dataset includes daily firm usage data from all winter days for the past six heating seasons (November 2012 – March 2018), includes the monthly count of firm customers, and includes both HDDs and the square of the HDDs as independent variables to account for the non-linear relationships between HDD and usage. The model estimates the expected use-per customer ("UPC") at various levels of HDD. This model uses many observations, which reflect recent customer use patterns. There is a good fit, as the actual observations (high R squared of 0.9748) and the coefficients are consistent with expectations and are statistically significant. (See Exhibit B1 for model specifications and statistical test results, and Exhibit B5 for the traditional firm daily data set.)

To account for the limited observations available at extremely cold temperatures, CenterPoint Energy calculates the UPC level from the model at the upper level of the 95% confidence interval. This limits the likelihood of the actual UPC being above the estimate to a 2.5% chance, which CenterPoint Energy believes is necessary in Minnesota's cold climate. CenterPoint Energy's estimated Design Day for the

traditional firm 2018-2019 heating season is 1,347,000, assuming 90 HDDs.

(2) Customer Migration Design Day Model

In the spring of 2017, CenterPoint Energy reviewed its Dual Fuel programs as part of an assessment of potential service reliability issues related to our Dual Fuel customers and the impacts of our Dual Fuel programs on firm service customer classes. As a result of these efforts, the Company identified a group of Dual Fuel customers that changed from dual fuel to a firm tariff offering – either sales or transportation service. As explained in the G-008/M-17-533 Demand Entitlement docket, these customers and the corresponding historical use were not part of the firm daily usage database for the entire 2012-2018 traditional model firm data set. To properly account for these customers' requirements for firm service, the Company used a second model and database to include the usage of these customers in the total firm sales forecast. Because the customers were served under Dual Fuel tariffs, the Company had daily use history available to use for modeling. In addition to the traditional firm customer model, we provide a second model for the recently converted customers that used daily sales data for the same six-year historical period. CenterPoint Energy estimates that this group of customers will need 26,000 DT of entitlement on Design Day, from the model at the upper level of the 95% confidence interval. CenterPoint Energy's estimate of use for this group last year was 19,000 DT per day, but more customers than originally anticipated have elected firm sales service (rather than transportation service.)

For the traditional firm customer UPC modeling, CenterPoint Energy removed the customers' usage for those who had converted to firm sales service before the 2016-2017 heating season from the total firm daily sales for the 2016-2017 and 2017-2018 heating seasons, and for those who converted to firm sales service just before the 2017-2018 heating season, we removed their usages from the total firm daily sales for the 2017-2018 heating season so that each data set was consistent with all five previous winter seasons. The rest of the model fitting and calculation for the traditional firm Design Day followed the same methodology as last year.

The Company compiled six years of usage data for the group of customers converting to firm and developed regression models similar to the traditional firm models to estimate expected use under Design Day conditions. The Company used actual service election to estimate sales service requirements: either Sales Service or Transportation Service. The Design Day estimate for customers expected to use the Company's entitlement under Sales Service was added to the traditional forecast. Model results are shown in Exhibit B1, page 2 of 2, and the data set in B6.

Because the customer count (of customers that move from Dual Fuel to firm service) is the same (343 customers) for the whole period, the regression was modeled directly on the combined group usage, instead of the Use Per Customer (UPC).

We added the model estimates from the two models together (the traditional UPC and the Dual Fuel conversion) to reach the total design day estimate for the upcoming winter season 2018-19.

Traditional	1,347,000
New conversions	<u>26,000</u>
Total	1,373,000

CenterPoint Energy uses the regression modeling to be sure we have enough capacity to delivery gas when the temperature is approaching a Design Day scenario; we have to be extremely cautious about the Design Day estimate. It is critically important that we have the capacity to serve firm customers if a Design Day occurs; using a 95% Confidence Interval upper limit is responsible, if not necessary, to assure sufficient capacity. By using the 95% confidence level, the likelihood the actual use per customer being

above the estimate is a 2.5% chance; therefore, CenterPoint Energy is comfortable with the overall 2.6% reserve margin.

Exhibit B details CenterPoint Energy's design day models, along with related data requested annually by the Department of Commerce (DOC) to complete its analysis.

Cost Estimates:

Exhibit A, Page 1 contains the Annual Demand Cost Estimate that the Company will make effective November 1, 2018, reflecting updated entitlement expense. Prior to implementation, CenterPoint Energy plans to update noted values when they become final.

Exhibit A, Page 2 shows the current (June 1, 2018) and proposed (November 1, 2018) Annual Demand Cost Estimate, provided for comparison purposes as requested in previous demand filings.

Note: Exhibit A is trade secret because it contains details on contracted units and rates, and disclosure of this information would adversely affect our ability to negotiate future contracts with capacity suppliers. A public version is supplied in the public document that summarizes available capacity, removing detailed information that CenterPoint Energy considers to be trade secret.

- C. *A summary of the levels of winter versus summer usage for all customer classes.***
12 months ended March 2018 (in Dekatherms) –

Throughput in Dekatherms (Dth)			
Class	Winter	Summer	Total
SALES SERVICE			
Small Firm	88,151,127	26,168,288	114,319,415
Large Firm	411,754	214,059	625,813
Small Dual Fuel	6,765,236	2,775,396	9,540,632
Large Dual Fuel	3,631,487	2,372,198	6,003,685
subtotal	98,959,604	31,529,941	130,489,545
TRANSPORT			
Small Firm	1,857,845	516,692	2,374,537
Large Firm	9,387,466	14,875,396	24,262,862
Small Dual Fuel	953,226	564,729	1,517,955
Large Dual Fuel	13,604,124	16,377,738	29,981,862
subtotal	25,802,661	32,334,555	58,137,216

- D. *A description of Design Day gas supply from all sources under the new level, allocation, or form of demand.***

Exhibits A and B contain the detailed pipeline entitlements and other demand costs.

**Filing Upon a Change in Demand
Minn. Rule 7829.1300, Subp. 2**

CenterPoint Energy Summary of Exhibits

EXHIBIT A Page 1 of 2 *Annual Demand Cost Estimate - Proposed November 1, 2018
Page 2 of 2 *Annual Demand Cost Estimate - Effective June 1, 2018

EXHIBIT B Additional Information Request from the Department of Commerce Additional information pursuant to the Department's request to all utilities concerning demand entitlement changes dated October 1, 1993.

B1 Design Day Study Model Specification – Traditional
Design Day Study Model Specification – New Data
B2 Heating Degree Day (HDD) data for the most recent 12-month period
Historical and Projected Design Day and Peak Day requirements
B3 *Demand Profile
B4 Historic gas price change comparisons
B5 Firm Design Day Data - Traditional
B6 Migration Firm Sales Design Day Data

EXHIBIT C C1 *NGPL – Demand Assignment
C2 *CenterPoint Energy Competitive Bypass Analysis
C3 *Precedent agreement

EXHIBIT D Intervenor Notification Filing Requirements pursuant to Minn. Rule 7825.2910, Subp. 3.

* - indicates NON-PUBLIC document

EXHIBIT A, Page 1 of 2

PUBLIC DATA
Trade Secret Information has been Excised

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- | | |
|---|---|
| A | NEW NNG CONTRACT - new levels of Entitlement Discounted/Non-discounted |
| B | New Discount rates |
| C | Corrected Rate - at Tariffed rate |
| D | Values subject to update in the November 2018 supplemental filing |
| E | NGPL - NGPL Rate Case Final Rate implementation affected a small portion of the NGPL Storage cost |
| F | Zero out off system credits |
| G | UPDATED per 2017 Rate Case: (KRN-WP), Sch. 38, Workpaper 5, page 2 - Effective with Final Rates G-008/GR-17-285 |
| H | UPDATED per 2017 Rate Case (Settlement Firm Sales volume- 10 YR WN Assumption) - effective with Final Rates G-008/GR-17-285 |

Effective: June 1, 2018

PUBLIC DATA
Trade Secret Information has been Excised

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with an "X" are
considered Trade

Demand Summary

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SUPPLY DEMAND

X
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1

Plus: Propane Costs	<u>\$226,795</u>
Annual Estimated Demand Expense	\$86,514.194

Divided by: Annual Demand Volume (2015 Rate Case Sales Volume-TY End 09/2016) 1,082,024,750

	Rate	\$0.07996
Docket G-008/M-13-728	Demand Adjust	\$0.00000
	Final Demand Rate	

Notes:

- 1 - Off System sales credit to demand
2 - Demand smoothing (In effect October through May)

CenterPoint Energy - Minnesota Gas
Design Day - 2018-2018 Heating Season

Exhibit B1
Traditional Data Model
Page 1 of 2

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.987340435
R Square	0.974841135
Adjusted R Square	0.974785473
Standard Error	0.037315028
Observations	907

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	48.77292234	24.38646117	17513.83399	0
Residual	904	1.258739858	0.001392411		
Total	906	50.0316622			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.049846185	0.007914589	6.298013485	4.7E-10	0.03431308	0.065379291	0.03431308	0.065379291
HDDs	0.014038557	0.000397838	35.28715554	3.4868E-172	0.013257764	0.01481935	0.013257764	0.01481935
HDDs^2	2.06959E-05	4.66957E-06	4.432073274	1.04783E-05	1.15314E-05	2.98604E-05	1.15314E-05	2.98604E-05

<u>Year</u>	<u>HDDs</u>	<u>Customer #</u>	<u>UPC @ DD</u>	<u>Volume @ DD</u>	<u>UPC @ 95% CI UL</u>	<u>Volume @ 95% CI UL</u>
2019	90	865,353	1.481	1,282,000	1.557	1,347,000
2020	90	873,830	1.481	1,294,000	1.557	1,361,000
2021	90	882,389	1.481	1,307,000	1.557	1,374,000
2022	90	891,030	1.481	1,320,000	1.557	1,387,000
2023	90	899,325	1.481	1,332,000	1.557	1,400,000

**CenterPoint Energy - Minnesota Gas
Design Day - 2018-2018 Heating Season**

**Exhibit B1
Migration Data Model
Page 2 of 2**

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.974453834
R Square	0.949560274
Adjusted R Square	0.949504539
Standard Error	847.8422284
Observations	907

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	12246965167	12246965167	17037.20681	0
Residual	905	650546982.1	718836.4443		
Total	906	12897512149			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	2025.992549	81.00748039	25.00994401	2.3113E-105	1867.008181	2184.976917	1867.008181	2184.976917
HDDs	249.8348542	1.914052424	130.5266517	0	246.0783565	253.5913519	246.0783565	253.5913519

<u>Year</u>	<u>HDDs</u>	<u>Usage @ DD</u>	<u>Usage @ 95% CI UL</u>
2019	90	24,511	26,187
2020	90	24,511	26,187
2021	90	24,511	26,187
2022	90	24,511	26,187
2023	90	24,511	26,187

	Pipeline	Contract Type	Season	Rate Type	FINAL Nov/Dec 2016 16-571	Filed July 2017 17-533	FINAL Nov 2017 17-533	Filed July 2018 18-xxx	Change from "FINAL Nov17"	
	[TRADE SECRET DATA BEGINS...									
(1)	Northern Natural									
(2)	Northern Natural									
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(17)	Northern Natural									
(18)	Northern Natural									
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(20)	Northern Natural									
(21)	Northern Natural									
(22)	Northern Natural									A
(23)	Northern Natural									A
(24)	Northern Natural									A
(25)	Northern Natural									A
(26)	Northern Natural									C
(27)	Northern Natural									
(28)	Northern Natural									
(29)	Northern Natural									
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(36)	Northern Natural									
(37)	Northern Natural									
(38)	Northern Natural									
(39)	Northern Natural									
(40)	Northern Natural									
(41)										
(42)	...TRADE SECRET DATA ENDS]									
(43)										
(44)				Total NNG Demand Winter	1,025,375	1,079,602	1,079,602	1,079,602	0	B
(45)				Total NNG Demand Summer	575,466	606,428	606,428	677,762	71,334	B
(46)				Total	1,600,841	1,686,030	1,686,030	1,757,364	71,334	
(47)										
(48)										
(49)				Non-Discounted			423,189	392,474	(30,715)	B
(50)				Discounted			1,262,841	1,364,890	102,049	B
(51)							1,686,030	1,757,364	71,334	B
(52)										
(53)	Northern Natural	Waterville			50,000	50,000	50,000	50,000	0	C
(54)	Northern Natural	Backhaul	Winter		50,000	50,000	50,000	50,000	0	
(55)	Northern Natural	SMS			30,000	30,000	30,000	30,000	0	
(56)										
(57)	[TRADE SECRET DATA BEGINS...									
(58)	VIKING PIPELINE									
(59)	VIKING PIPELINE									
(60)	VIKING PIPELINE									
(61)										
(62)										
(63)										
(64)	Trailblazer	FTS Backhaul	Winter	Discounted	100,000	100,000	100,000	100,000	0	
(65)										
(66)	[TRADE SECRET DATA BEGINS...									

		FINAL Nov/Dec 2016	Filed July 2017	FINAL Nov 2017	Filed July 2018	Change from "FINAL Nov17"		
Pipeline	Contract Type	Season	Rate Type	16-571	17-533	17-533	18-xxx	
[TRADE SECRET DATA BEGINS...								
(67)	Seasonal Reservation *							
(68)	Storage NGPL							
(69)	Storage Tennaska							
(70)	Storage BP Canada							
(71)	Storage NNG							
(72)	* seasonal reservation included peaking service last year							
(73)	...TRADE SECRET DATA ENDS]							
(74)	Waterville - Underground (Medford)			50,000	50,000	50,000	50,000	0
(75)	Peaking Service *			6,000	10,000	0	0	0
(76)	LNG Peak Shaving			72,000	72,000	72,000	72,000	0
(77)	Propane Peak Shaving			180,200	158,000	158,000	158,000	0
(78)								
(79)	NNG/Viking Overlap			(24,914)	(26,815)	(26,815)	(26,815)	
(80)								
(81)	Total Capacity (Lns 44+62+74+75+76+77+79)			1,375,470	1,399,596	1,409,596	1,409,596	0
(82)	Total Peak-Shaving Capacity/On-line Storage			308,200	290,000	280,000	280,000	0
(83)	Total Annual Transportation (12 month)			632,275	663,237	663,237	734,571	71,334
(84)	Total Seasonal Transportation (Adj for NNG/Viking overlap)			1,067,270	1,109,596	1,129,596	1,129,596	0
(85)	Total Capacity			22.4%	20.7%	19.9%	19.9%	
(86)	% of Total Capacity			46.0%	47.4%	47.1%	52.1%	
(87)	as % of Total Capacity			77.6%	79.3%	80.1%	80.1%	
(88)	Transportation as % of			62.8%	62.6%	63.0%	60.6%	
(89)								
(90)	Design Day			1,328,000	1,357,000	1,357,000	1,373,000	16,000
(91)	Physical Res			36,000	36,000	36,000	36,000	0
(92)	Total			1,364,000	1,393,000	1,393,000	1,409,000	16,000
(93)								
(94)	Pipeline			1,067,270	1,109,596	1,129,596	1,129,596	0
(95)	Peaking			308,200	290,000	280,000	280,000	0
(96)	Net Supply			1,375,470	1,399,596	1,409,596	1,409,596	0
(97)								
(98)	Avail Net Cap			11,470	6,596	16,596	596	(16,000)
(99)	%			1%	0.5%	1.2%	0.0%	
(100)								
(101)	Avail incl Physical			47,470	42,596	52,596	36,596	(16,000)
(102)	%			3%	3.1%	3.8%	2.6%	

Footnotes:

- A New contract entitlement levels - consolidated to Winter/Summer and Discount/Non-discount only.
B Increase in volumes Discounted volumes under the new contract

CenterPoint Energy Minnesota Gas
Demand Entitlement: 2018-2019

Exhibit B4
Historic Price Change Comparison

	Last Rate Case (G008/MR-17- 591 and GR- 17-285)	Last Demand Change (G008/M-17- 533) (11/2017)	June 1, 2018	November 2018 PGA (M-18-xxx)	Change From Last Rate Case	Change From Last Demand Change	Percent Change (%) From Most Recent PGA	Change (\$) From Most Recent PGA
Residential								
Commodity Cost of Gas (WACOG) (4)	\$3.2426	\$3.0003	\$2.5792	\$3.2426	0.00%	8.08%	25.72%	\$0.6634
Demand Cost of Gas (1)	\$0.7984	\$0.8022	\$0.7996	\$0.8561	7.23%	6.72%	7.07%	\$0.0565
Commodity Margin (2) (3) (5)	\$2.2201	\$2.2201	\$2.2201	\$2.1477	-3.26%	-3.26%	-3.26%	(\$0.0724)
Total Cost of Gas	\$6.2611	\$6.0226	\$5.5989	\$6.2464	-0.23%	3.72%	11.56%	\$0.6475
Average Annual Usage (Dk)	100	100	100	100				
Average Annual Total Cost of Gas	\$626.11	\$602.26	\$559.89	\$624.64	-0.23%	3.72%	11.56%	\$64.75
Average Annual Total Demand Cost of Gas								\$5.65

	Last Rate Case (G008/MR-17- 591 and GR- 17-285)	Last Demand Change (G008/M-17- 533) (11/2017)	June 1, 2018	November 2018 PGA (M-18-xxx)	Change From Last Rate Case	Change From Last Demand Change	Percent Change (%) From Most Recent PGA	Change (\$) From Most Recent PGA
Commercial/Industrial Firm - A								
Commodity Cost of Gas (WACOG) (4)	\$3.2426	\$3.0003	\$2.5792	\$3.2426	0.00%	8.08%	25.72%	\$0.6634
Demand Cost of Gas (1)	\$0.7984	\$0.8022	\$0.7996	\$0.8561	7.23%	6.72%	7.07%	\$0.0565
Commodity Margin (2) (3) (5)	\$2.2211	\$2.2211	\$2.2211	\$2.1649	-2.53%	-2.53%	-2.53%	(\$0.0562)
Total Cost of Gas	\$6.2621	\$6.0236	\$5.5999	\$6.2636	0.02%	3.98%	11.85%	\$0.6637
Average Annual Usage (Dk)	80	80	80	80				
Average Annual Total Cost of Gas	\$500.97	\$481.89	\$447.99	\$501.09	0.02%	3.98%	11.85%	\$53.10
Average Annual Total Demand Cost of Gas								\$4.52

	Last Rate Case (G008/MR-17- 591 and GR- 17-285)	Last Demand Change (G008/M-17- 533) (11/2017)	June 1, 2018	November 2018 PGA (M-18-xxx)	Change From Last Rate Case	Change From Last Demand Change	Percent Change (%) From Most Recent PGA	Change (\$) From Most Recent PGA
Commercial/Industrial Firm - B								
Commodity Cost of Gas (WACOG) (4)	\$3.2426	\$3.0003	\$2.5792	\$3.2426	0.00%	8.08%	25.72%	\$0.6634
Demand Cost of Gas (1)	\$0.7984	\$0.8022	\$0.7996	\$0.8561	7.23%	6.72%	7.07%	\$0.0565
Commodity Margin (2) (3) (5)	\$1.8293	\$1.8293	\$1.8293	\$1.7529	-4.18%	-4.18%	-4.18%	(\$0.0764)
Total Cost of Gas	\$5.8703	\$5.6318	\$5.2081	\$5.8516	-0.32%	3.90%	12.36%	\$0.6435
Average Annual Usage (Dk)	2,860	2,860	2,860	2,860				
Average Annual Total Cost of Gas	\$16,789.06	\$16,106.95	\$14,895.17	\$16,735.58	-0.32%	3.90%	12.36%	\$1,840.41
Average Annual Total Demand Cost of Gas								\$161.59

	Last Rate Case (G008/MR-17- 591 and GR- 17-285)	Last Demand Change (G008/M-17- 533) (11/2017)	June 1, 2018	November 2018 PGA (M-18-xxx)	Change From Last Rate Case	Change From Last Demand Change	Percent Change (%) From Most Recent PGA	Change (\$) From Most Recent PGA
Commercial/Industrial Firm - C								
Commodity Cost of Gas (WACOG) (4)	\$3.2426	\$3.0003	\$2.5792	\$3.2426	0.00%	8.08%	25.72%	\$0.6634
Demand Cost of Gas (1)	\$0.7984	\$0.8022	\$0.7996	\$0.8561	7.23%	6.72%	7.07%	\$0.0565
Commodity Margin (2) (3) (5)	\$1.6982	\$1.6982	\$1.6982	\$1.5795	-6.99%	-6.99%	-6.99%	(\$0.1187)
Total Cost of Gas	\$5.7392	\$5.5007	\$5.0770	\$5.6782	-1.06%	3.23%	11.84%	\$0.6012
Average Annual Usage (Dk)	14,300	14,300	14,300	14,300				
Average Annual Total Cost of Gas	\$82,070.56	\$78,660.01	\$72,601.10	\$81,198.26	-1.06%	3.23%	11.84%	\$8,597.16
Average Annual Total Demand Cost of Gas								\$807.95

	Commodity Change (\$/Dk)	Commodity Change (Percent)	Demand Change (\$/Dk)	Demand Change (Percent)	Total Change (\$/Dk)	Total Change (Percent)
Summary						
Change from most recent PGA						
Customer Class						
Residential	\$0.6634	25.72%	\$0.0565	7.07%	\$64.75	11.56%
Commercial/Industrial Firm A	\$0.6634	25.72%	\$0.0565	7.07%	\$53.10	11.85%
Commercial/Industrial Firm B	\$0.6634	25.72%	\$0.0565	7.07%	\$1,840.41	12.36%
Commercial/Industrial Firm C	\$0.6634	25.72%	\$0.0565	7.07%	\$8,597.16	11.84%

(1) Does not include Demand Smoothing Adjustment

(2) Does not reflect Decoupling, GAP, Interim or GCR Factors.

(3) 2015 Rate Case - tariff value for Last Rate Case and Last Demand Change. Reflect base rate plus CCRA (\$0.1553/DT)

(4) Actual WACOG for historical timeframes / 2017 Rate Case Base value in Settlement for Nov. 2018

(5) Actual Billed for historical (Base+CCRA) / 2017 Rate Case Base settled tariff value and proposed CCRA (\$0.0441/DT)- Nov 2018

Date	Firm Throughput	Temperature	Firm Customer	UPC	HDD	HDDs^2	Nov	Dec	Feb	Mar
11/01/12	307,225	35.9	811,114	0.379	29.1	847	1	0	0	0
11/02/12	323,801	37.5	811,114	0.399	27.5	756	1	0	0	0
11/03/12	309,667	37.5	811,114	0.382	27.5	756	1	0	0	0
11/04/12	286,563	41.4	811,114	0.353	23.6	557	1	0	0	0
11/05/12	293,718	41.3	811,114	0.362	23.7	562	1	0	0	0
11/06/12	300,748	39.8	811,114	0.371	25.2	635	1	0	0	0
11/07/12	287,479	39.9	811,114	0.354	25.1	630	1	0	0	0
11/08/12	249,963	43.3	811,114	0.308	21.7	471	1	0	0	0
11/09/12	224,816	47.3	811,114	0.277	17.7	313	1	0	0	0
11/10/12	174,624	53.8	811,114	0.215	11.2	125	1	0	0	0
11/11/12	449,010	24.9	811,114	0.554	40.1	1608	1	0	0	0
11/12/12	524,323	22.4	811,114	0.646	42.6	1815	1	0	0	0
11/13/12	349,460	36.9	811,114	0.431	28.1	790	1	0	0	0
11/14/12	263,688	43.6	811,114	0.325	21.4	458	1	0	0	0
11/15/12	330,197	35.9	811,114	0.407	29.1	847	1	0	0	0
11/16/12	329,654	36.8	811,114	0.406	28.2	795	1	0	0	0
11/17/12	219,662	49.0	811,114	0.271	16.0	256	1	0	0	0
11/18/12	196,452	50.4	811,114	0.242	14.6	213	1	0	0	0
11/19/12	215,001	46.3	811,114	0.265	18.7	350	1	0	0	0
11/20/12	247,642	45.0	811,114	0.305	20.0	400	1	0	0	0
11/21/12	161,947	56.5	811,114	0.200	8.5	72	1	0	0	0
11/22/12	360,375	31.7	811,114	0.444	33.3	1109	1	0	0	0
11/23/12	551,707	18.5	811,114	0.680	46.5	2162	1	0	0	0
11/24/12	478,911	27.3	811,114	0.590	37.7	1421	1	0	0	0
11/25/12	498,388	23.1	811,114	0.614	41.9	1756	1	0	0	0
11/26/12	569,345	18.1	811,114	0.702	46.9	2200	1	0	0	0
11/27/12	474,521	29.3	811,114	0.585	35.7	1274	1	0	0	0
11/28/12	417,455	30.7	811,114	0.515	34.3	1176	1	0	0	0
11/29/12	395,313	34.5	811,114	0.487	30.5	930	1	0	0	0
11/30/12	383,381	35.3	811,114	0.473	29.7	882	1	0	0	0
12/01/12	322,331	39.3	812,553	0.397	25.7	660	0	1	0	0
12/02/12	327,142	40.9	812,553	0.403	24.1	581	0	1	0	0
12/03/12	281,835	44.3	812,553	0.347	20.7	428	0	1	0	0
12/04/12	462,568	25.3	812,553	0.569	39.7	1576	0	1	0	0
12/05/12	406,844	37.8	812,553	0.501	27.2	740	0	1	0	0
12/06/12	367,630	33.4	812,553	0.452	31.6	999	0	1	0	0
12/07/12	444,670	28.0	812,553	0.547	37.0	1369	0	1	0	0
12/08/12	409,188	30.8	812,553	0.504	34.2	1170	0	1	0	0
12/09/12	505,871	22.9	812,553	0.623	42.1	1772	0	1	0	0
12/10/12	624,225	9.3	812,553	0.768	55.7	3102	0	1	0	0
12/11/12	607,940	17.0	812,553	0.748	48.0	2304	0	1	0	0
12/12/12	417,427	37.4	812,553	0.514	27.6	762	0	1	0	0
12/13/12	455,817	27.5	812,553	0.561	37.5	1406	0	1	0	0
12/14/12	395,568	33.5	812,553	0.487	31.5	992	0	1	0	0
12/15/12	380,605	34.7	812,553	0.468	30.3	918	0	1	0	0
12/16/12	516,676	21.7	812,553	0.636	43.3	1875	0	1	0	0
12/17/12	507,739	23.8	812,553	0.625	41.2	1697	0	1	0	0
12/18/12	471,763	27.8	812,553	0.581	37.2	1384	0	1	0	0
12/19/12	460,079	27.0	812,553	0.566	38.0	1444	0	1	0	0
12/20/12	620,644	16.8	812,553	0.764	48.2	2323	0	1	0	0
12/21/12	625,145	13.7	812,553	0.769	51.3	2632	0	1	0	0
12/22/12	561,124	19.1	812,553	0.691	45.9	2107	0	1	0	0
12/23/12	599,746	16.4	812,553	0.738	48.6	2362	0	1	0	0
12/24/12	668,095	9.0	812,553	0.822	56.0	3136	0	1	0	0
12/25/12	715,967	7.2	812,553	0.881	57.8	3341	0	1	0	0
12/26/12	673,635	12.5	812,553	0.829	52.5	2756	0	1	0	0
12/27/12	606,782	18.8	812,553	0.747	46.2	2134	0	1	0	0
12/28/12	559,126	19.4	812,553	0.688	45.6	2079	0	1	0	0
12/29/12	664,060	8.6	812,553	0.817	56.4	3181	0	1	0	0
12/30/12	621,446	16.9	812,553	0.765	48.1	2314	0	1	0	0
12/31/12	730,350	4.0	812,553	0.899	61.0	3721	0	1	0	0
01/01/13	688,935	13.7	813,605	0.847	51.3	2632	0	0	0	0
01/02/13	617,490	16.8	813,605	0.759	48.2	2323	0	0	0	0
01/03/13	639,791	15.3	813,605	0.786	49.7	2470	0	0	0	0
01/04/13	545,654	20.3	813,605	0.671	44.7	1998	0	0	0	0

Date	Firm Throughput	Temperature	Firm Customer	UPC	HDD	HDDs^2	Nov	Dec	Feb	Mar
01/05/13	572,764	18.3	813,605	0.704	46.7	2181	0	0	0	0
01/06/13	570,148	21.5	813,605	0.701	43.5	1892	0	0	0	0
01/07/13	476,479	27.2	813,605	0.586	37.8	1429	0	0	0	0
01/08/13	462,921	31.3	813,605	0.569	33.7	1136	0	0	0	0
01/09/13	444,889	29.5	813,605	0.547	35.5	1260	0	0	0	0
01/10/13	397,847	35.5	813,605	0.489	29.5	870	0	0	0	0
01/11/13	413,862	32.4	813,605	0.509	32.6	1063	0	0	0	0
01/12/13	705,978	7.4	813,605	0.868	57.6	3318	0	0	0	0
01/13/13	777,312	6.0	813,605	0.955	59.0	3481	0	0	0	0
01/14/13	710,666	11.7	813,605	0.873	53.3	2841	0	0	0	0
01/15/13	550,828	26.3	813,605	0.677	38.7	1498	0	0	0	0
01/16/13	594,587	19.8	813,605	0.731	45.2	2043	0	0	0	0
01/17/13	631,806	17.4	813,605	0.777	47.6	2266	0	0	0	0
01/18/13	434,528	33.7	813,605	0.534	31.3	980	0	0	0	0
01/19/13	676,182	12.8	813,605	0.831	52.2	2725	0	0	0	0
01/20/13	852,848	(0.1)	813,605	1.048	65.1	4238	0	0	0	0
01/21/13	961,134	(6.9)	813,605	1.181	71.9	5170	0	0	0	0
01/22/13	841,471	3.0	813,605	1.034	62.0	3844	0	0	0	0
01/23/13	839,349	1.9	813,605	1.032	63.1	3982	0	0	0	0
01/24/13	801,212	10.1	813,605	0.985	54.9	3014	0	0	0	0
01/25/13	737,493	10.2	813,605	0.906	54.8	3003	0	0	0	0
01/26/13	630,692	22.2	813,605	0.775	42.8	1832	0	0	0	0
01/27/13	486,825	31.2	813,605	0.598	33.8	1142	0	0	0	0
01/28/13	435,624	31.0	813,605	0.535	34.0	1156	0	0	0	0
01/29/13	483,077	27.1	813,605	0.594	37.9	1436	0	0	0	0
01/30/13	730,758	9.1	813,605	0.898	55.9	3125	0	0	0	0
01/31/13	919,219	(5.9)	813,605	1.130	70.9	5027	0	0	0	0
02/01/13	816,844	0.3	814,223	1.003	64.7	4186	0	0	1	0
02/02/13	708,072	7.2	814,223	0.870	57.8	3341	0	0	1	0
02/03/13	692,681	9.7	814,223	0.851	55.3	3058	0	0	1	0
02/04/13	647,045	15.3	814,223	0.795	49.7	2470	0	0	1	0
02/05/13	603,769	15.3	814,223	0.742	49.7	2470	0	0	1	0
02/06/13	582,564	21.1	814,223	0.715	43.9	1927	0	0	1	0
02/07/13	556,766	22.0	814,223	0.684	43.0	1849	0	0	1	0
02/08/13	525,703	21.3	814,223	0.646	43.7	1910	0	0	1	0
02/09/13	493,459	26.0	814,223	0.606	39.0	1521	0	0	1	0
02/10/13	485,604	30.8	814,223	0.596	34.2	1170	0	0	1	0
02/11/13	571,707	21.8	814,223	0.702	43.2	1866	0	0	1	0
02/12/13	484,926	26.5	814,223	0.596	38.5	1482	0	0	1	0
02/13/13	427,336	32.5	814,223	0.525	32.5	1056	0	0	1	0
02/14/13	554,503	19.2	814,223	0.681	45.8	2098	0	0	1	0
02/15/13	661,122	9.9	814,223	0.812	55.1	3036	0	0	1	0
02/16/13	631,804	12.5	814,223	0.776	52.5	2756	0	0	1	0
02/17/13	508,693	27.9	814,223	0.625	37.1	1376	0	0	1	0
02/18/13	674,176	14.9	814,223	0.828	50.1	2510	0	0	1	0
02/19/13	808,222	2.8	814,223	0.993	62.2	3869	0	0	1	0
02/20/13	706,152	12.0	814,223	0.867	53.0	2809	0	0	1	0
02/21/13	602,844	20.6	814,223	0.740	44.4	1971	0	0	1	0
02/22/13	524,048	24.0	814,223	0.644	41.0	1681	0	0	1	0
02/23/13	520,587	21.6	814,223	0.639	43.4	1884	0	0	1	0
02/24/13	476,977	28.3	814,223	0.586	36.7	1347	0	0	1	0
02/25/13	472,546	27.5	814,223	0.580	37.5	1406	0	0	1	0
02/26/13	464,870	32.3	814,223	0.571	32.7	1069	0	0	1	0
02/27/13	431,229	32.2	814,223	0.530	32.8	1076	0	0	1	0
02/28/13	515,657	26.9	814,223	0.633	38.1	1452	0	0	1	0
03/01/13	533,662	22.0	814,551	0.655	43.0	1849	0	0	0	1
03/02/13	484,756	23.6	814,551	0.595	41.4	1714	0	0	0	1
03/03/13	470,739	28.2	814,551	0.578	36.8	1354	0	0	0	1
03/04/13	535,288	25.5	814,551	0.657	39.5	1560	0	0	0	1
03/05/13	504,327	25.4	814,551	0.619	39.6	1568	0	0	0	1
03/06/13	545,786	20.0	814,551	0.670	45.0	2025	0	0	0	1
03/07/13	486,969	24.7	814,551	0.598	40.3	1624	0	0	0	1
03/08/13	387,185	35.0	814,551	0.475	30.0	900	0	0	0	1
03/09/13	393,953	36.1	814,551	0.484	28.9	835	0	0	0	1
03/10/13	482,549	31.7	814,551	0.592	33.3	1109	0	0	0	1

Date	Firm Throughput	Temperature	Firm Customer	UPC	HDD	HDDs^2	Nov	Dec	Feb	Mar
03/11/13	507,328	26.6	814,551	0.623	38.4	1475	0	0	0	1
03/12/13	539,477	23.2	814,551	0.662	41.8	1747	0	0	0	1
03/13/13	468,207	26.8	814,551	0.575	38.2	1459	0	0	0	1
03/14/13	371,041	33.8	814,551	0.456	31.2	973	0	0	0	1
03/15/13	471,024	28.1	814,551	0.578	36.9	1362	0	0	0	1
03/16/13	547,044	18.0	814,551	0.672	47.0	2209	0	0	0	1
03/17/13	523,983	25.8	814,551	0.643	39.2	1537	0	0	0	1
03/18/13	643,074	15.3	814,551	0.789	49.7	2470	0	0	0	1
03/19/13	658,246	13.4	814,551	0.808	51.6	2663	0	0	0	1
03/20/13	644,459	14.0	814,551	0.791	51.0	2601	0	0	0	1
03/21/13	545,252	21.0	814,551	0.669	44.0	1936	0	0	0	1
03/22/13	441,787	27.9	814,551	0.542	37.1	1376	0	0	0	1
03/23/13	411,784	32.1	814,551	0.506	32.9	1082	0	0	0	1
03/24/13	466,804	29.6	814,551	0.573	35.4	1253	0	0	0	1
03/25/13	407,250	32.2	814,551	0.500	32.8	1076	0	0	0	1
03/26/13	408,283	31.6	814,551	0.501	33.4	1116	0	0	0	1
03/27/13	366,039	34.3	814,551	0.449	30.7	942	0	0	0	1
03/28/13	329,700	37.1	814,551	0.405	27.9	778	0	0	0	1
03/29/13	280,746	42.8	814,551	0.345	22.2	493	0	0	0	1
03/30/13	278,436	42.6	814,551	0.342	22.4	502	0	0	0	1
03/31/13	435,064	29.8	814,551	0.534	35.2	1239	0	0	0	1
11/01/13	260,159	42.3	818,523	0.318	22.7	515	1	0	0	0
11/02/13	289,097	42.3	818,523	0.353	22.7	515	1	0	0	0
11/03/13	236,978	49.2	818,523	0.290	15.8	250	1	0	0	0
11/04/13	314,108	39.9	818,523	0.384	25.1	630	1	0	0	0
11/05/13	352,238	36.6	818,523	0.430	28.4	807	1	0	0	0
11/06/13	370,632	32.9	818,523	0.453	32.1	1030	1	0	0	0
11/07/13	422,025	29.7	818,523	0.516	35.3	1246	1	0	0	0
11/08/13	340,633	42.8	818,523	0.416	22.2	493	1	0	0	0
11/09/13	346,247	38.6	818,523	0.423	26.4	697	1	0	0	0
11/10/13	355,609	35.8	818,523	0.434	29.2	853	1	0	0	0
11/11/13	558,987	19.0	818,523	0.683	46.0	2116	1	0	0	0
11/12/13	519,267	24.8	818,523	0.634	40.2	1616	1	0	0	0
11/13/13	320,820	42.1	818,523	0.392	22.9	524	1	0	0	0
11/14/13	316,502	40.3	818,523	0.387	24.7	610	1	0	0	0
11/15/13	249,500	47.0	818,523	0.305	18.0	324	1	0	0	0
11/16/13	265,288	45.3	818,523	0.324	19.7	388	1	0	0	0
11/17/13	380,344	36.0	818,523	0.465	29.0	841	1	0	0	0
11/18/13	452,662	28.9	818,523	0.553	36.1	1303	1	0	0	0
11/19/13	343,053	43.2	818,523	0.419	21.8	475	1	0	0	0
11/20/13	332,804	38.8	818,523	0.407	26.2	686	1	0	0	0
11/21/13	509,198	25.3	818,523	0.622	39.7	1576	1	0	0	0
11/22/13	574,041	19.3	818,523	0.701	45.7	2088	1	0	0	0
11/23/13	663,634	12.7	818,523	0.811	52.3	2735	1	0	0	0
11/24/13	531,897	28.3	818,523	0.650	36.7	1347	1	0	0	0
11/25/13	461,092	31.8	818,523	0.563	33.2	1102	1	0	0	0
11/26/13	632,752	16.5	818,523	0.773	48.5	2352	1	0	0	0
11/27/13	565,510	22.4	818,523	0.691	42.6	1815	1	0	0	0
11/28/13	565,579	20.2	818,523	0.691	44.8	2007	1	0	0	0
11/29/13	505,603	28.4	818,523	0.618	36.6	1340	1	0	0	0
11/30/13	427,827	31.7	818,523	0.523	33.3	1109	1	0	0	0
12/01/13	451,675	30.5	820,313	0.551	34.5	1190	0	1	0	0
12/02/13	410,717	35.1	820,313	0.501	29.9	894	0	1	0	0
12/03/13	422,560	32.9	820,313	0.515	32.1	1030	0	1	0	0
12/04/13	569,447	19.6	820,313	0.694	45.4	2061	0	1	0	0
12/05/13	786,137	2.0	820,313	0.958	63.0	3969	0	1	0	0
12/06/13	865,403	(3.7)	820,313	1.055	68.7	4720	0	1	0	0
12/07/13	850,293	(0.4)	820,313	1.037	65.4	4277	0	1	0	0
12/08/13	745,786	8.3	820,313	0.909	56.7	3215	0	1	0	0
12/09/13	826,831	1.8	820,313	1.008	63.2	3994	0	1	0	0
12/10/13	804,486	3.2	820,313	0.981	61.8	3819	0	1	0	0
12/11/13	847,431	1.3	820,313	1.033	63.7	4058	0	1	0	0
12/12/13	658,704	16.3	820,313	0.803	48.7	2372	0	1	0	0
12/13/13	695,246	12.8	820,313	0.848	52.2	2725	0	1	0	0
12/14/13	747,492	5.8	820,313	0.911	59.2	3505	0	1	0	0

Date	Firm Throughput	Temperature	Firm Customer	UPC	HDD	HDDs^2	Nov	Dec	Feb	Mar
12/15/13	798,126	2.4	820,313	0.973	62.6	3919	0	1	0	0
12/16/13	669,197	20.2	820,313	0.816	44.8	2007	0	1	0	0
12/17/13	626,442	17.4	820,313	0.764	47.6	2266	0	1	0	0
12/18/13	525,856	27.1	820,313	0.641	37.9	1436	0	1	0	0
12/19/13	653,216	17.3	820,313	0.796	47.7	2275	0	1	0	0
12/20/13	615,169	18.4	820,313	0.750	46.6	2172	0	1	0	0
12/21/13	602,408	19.0	820,313	0.734	46.0	2116	0	1	0	0
12/22/13	718,679	9.0	820,313	0.876	56.0	3136	0	1	0	0
12/23/13	904,190	(4.4)	820,313	1.102	69.4	4816	0	1	0	0
12/24/13	770,114	9.3	820,313	0.939	55.7	3102	0	1	0	0
12/25/13	615,169	16.8	820,313	0.750	48.2	2323	0	1	0	0
12/26/13	571,937	21.7	820,313	0.697	43.3	1875	0	1	0	0
12/27/13	460,757	31.3	820,313	0.562	33.7	1136	0	1	0	0
12/28/13	516,400	24.5	820,313	0.630	40.5	1640	0	1	0	0
12/29/13	893,763	(7.0)	820,313	1.090	72.0	5184	0	1	0	0
12/30/13	903,236	(2.7)	820,313	1.101	67.7	4583	0	1	0	0
12/31/13	926,621	(5.0)	820,313	1.130	70.0	4900	0	1	0	0
01/01/14	892,852	(1.9)	821,220	1.087	66.9	4476	0	0	0	0
01/02/14	902,940	(2.7)	821,220	1.100	67.7	4583	0	0	0	0
01/03/14	674,191	22.5	821,220	0.821	42.5	1806	0	0	0	0
01/04/14	783,780	2.8	821,220	0.954	62.2	3869	0	0	0	0
01/05/14	1,045,732	(14.5)	821,220	1.273	79.5	6320	0	0	0	0
01/06/14	1,086,330	(13.8)	821,220	1.323	78.8	6209	0	0	0	0
01/07/14	909,815	(2.6)	821,220	1.108	67.6	4570	0	0	0	0
01/08/14	898,060	(1.4)	821,220	1.094	66.4	4409	0	0	0	0
01/09/14	695,186	17.4	821,220	0.847	47.6	2266	0	0	0	0
01/10/14	528,248	28.3	821,220	0.643	36.7	1347	0	0	0	0
01/11/14	520,417	27.3	821,220	0.634	37.7	1421	0	0	0	0
01/12/14	444,652	34.8	821,220	0.541	30.2	912	0	0	0	0
01/13/14	484,290	26.9	821,220	0.590	38.1	1452	0	0	0	0
01/14/14	687,622	10.8	821,220	0.837	54.2	2938	0	0	0	0
01/15/14	629,869	21.8	821,220	0.767	43.2	1866	0	0	0	0
01/16/14	755,215	9.0	821,220	0.920	56.0	3136	0	0	0	0
01/17/14	710,491	9.9	821,220	0.865	55.1	3036	0	0	0	0
01/18/14	593,127	20.3	821,220	0.722	44.7	1998	0	0	0	0
01/19/14	458,959	31.6	821,220	0.559	33.4	1116	0	0	0	0
01/20/14	807,551	0.9	821,220	0.983	64.1	4109	0	0	0	0
01/21/14	859,867	1.5	821,220	1.047	63.5	4032	0	0	0	0
01/22/14	939,132	(5.8)	821,220	1.144	70.8	5013	0	0	0	0
01/23/14	903,346	1.7	821,220	1.100	63.3	4007	0	0	0	0
01/24/14	623,215	21.9	821,220	0.759	43.1	1858	0	0	0	0
01/25/14	740,592	6.3	821,220	0.902	58.7	3446	0	0	0	0
01/26/14	896,955	(1.8)	821,220	1.092	66.8	4462	0	0	0	0
01/27/14	1,013,460	(11.3)	821,220	1.234	76.3	5822	0	0	0	0
01/28/14	934,603	(3.5)	821,220	1.138	68.5	4692	0	0	0	0
01/29/14	622,124	23.8	821,220	0.758	41.2	1697	0	0	0	0
01/30/14	765,957	3.2	821,220	0.933	61.8	3819	0	0	0	0
01/31/14	767,161	4.3	821,220	0.934	60.7	3684	0	0	0	0
02/01/14	742,210	6.2	821,951	0.903	58.8	3457	0	0	1	0
02/02/14	767,201	4.6	821,951	0.933	60.4	3648	0	0	1	0
02/03/14	747,100	7.8	821,951	0.909	57.2	3272	0	0	1	0
02/04/14	813,285	3.5	821,951	0.989	61.5	3782	0	0	1	0
02/05/14	903,288	(2.6)	821,951	1.099	67.6	4570	0	0	1	0
02/06/14	875,965	(0.8)	821,951	1.066	65.8	4330	0	0	1	0
02/07/14	802,105	5.0	821,951	0.976	60.0	3600	0	0	1	0
02/08/14	762,332	7.4	821,951	0.927	57.6	3318	0	0	1	0
02/09/14	863,250	(2.7)	821,951	1.050	67.7	4583	0	0	1	0
02/10/14	878,879	(2.0)	821,951	1.069	67.0	4489	0	0	1	0
02/11/14	747,125	11.3	821,951	0.909	53.7	2884	0	0	1	0
02/12/14	599,842	20.4	821,951	0.730	44.6	1989	0	0	1	0
02/13/14	713,019	10.6	821,951	0.867	54.4	2959	0	0	1	0
02/14/14	726,273	7.5	821,951	0.884	57.5	3306	0	0	1	0
02/15/14	680,208	14.8	821,951	0.828	50.2	2520	0	0	1	0
02/16/14	621,395	19.0	821,951	0.756	46.0	2116	0	0	1	0
02/17/14	552,739	22.9	821,951	0.672	42.1	1772	0	0	1	0

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02/18/14	438,311	31.5	821,951	0.533	33.5	1122	0	0	1	0
02/19/14	407,689	34.4	821,951	0.496	30.6	936	0	0	1	0
02/20/14	551,513	21.8	821,951	0.671	43.2	1866	0	0	1	0
02/21/14	682,078	11.0	821,951	0.830	54.0	2916	0	0	1	0
02/22/14	691,246	8.6	821,951	0.841	56.4	3181	0	0	1	0
02/23/14	716,126	8.3	821,951	0.871	56.7	3215	0	0	1	0
02/24/14	763,209	5.0	821,951	0.929	60.0	3600	0	0	1	0
02/25/14	861,631	(2.4)	821,951	1.048	67.4	4543	0	0	1	0
02/26/14	857,478	(3.2)	821,951	1.043	68.2	4651	0	0	1	0
02/27/14	883,960	(5.0)	821,951	1.075	70.0	4900	0	0	1	0
02/28/14	797,741	6.5	821,951	0.971	58.5	3422	0	0	1	0
03/01/14	931,911	(6.3)	822,177	1.133	71.3	5084	0	0	0	1
03/02/14	893,144	(3.8)	822,177	1.086	68.8	4733	0	0	0	1
03/03/14	793,372	6.7	822,177	0.965	58.3	3399	0	0	0	1
03/04/14	654,645	16.0	822,177	0.796	49.0	2401	0	0	0	1
03/05/14	598,914	18.0	822,177	0.728	47.0	2209	0	0	0	1
03/06/14	564,977	24.3	822,177	0.687	40.7	1656	0	0	0	1
03/07/14	540,896	25.2	822,177	0.658	39.8	1584	0	0	0	1
03/08/14	500,163	22.9	822,177	0.608	42.1	1772	0	0	0	1
03/09/14	393,788	38.0	822,177	0.479	27.0	729	0	0	0	1
03/10/14	291,729	44.0	822,177	0.355	21.0	441	0	0	0	1
03/11/14	431,105	32.3	822,177	0.524	32.7	1069	0	0	0	1
03/12/14	483,403	24.8	822,177	0.588	40.2	1616	0	0	0	1
03/13/14	307,016	42.7	822,177	0.373	22.3	497	0	0	0	1
03/14/14	418,521	31.3	822,177	0.509	33.7	1136	0	0	0	1
03/15/14	526,833	22.5	822,177	0.641	42.5	1806	0	0	0	1
03/16/14	531,181	22.6	822,177	0.646	42.4	1798	0	0	0	1
03/17/14	450,154	31.5	822,177	0.548	33.5	1122	0	0	0	1
03/18/14	454,709	30.7	822,177	0.553	34.3	1176	0	0	0	1
03/19/14	463,131	29.8	822,177	0.563	35.2	1239	0	0	0	1
03/20/14	351,375	35.7	822,177	0.427	29.3	858	0	0	0	1
03/21/14	495,618	27.0	822,177	0.603	38.0	1444	0	0	0	1
03/22/14	621,205	15.1	822,177	0.756	49.9	2490	0	0	0	1
03/23/14	577,846	21.0	822,177	0.703	44.0	1936	0	0	0	1
03/24/14	573,786	21.6	822,177	0.698	43.4	1884	0	0	0	1
03/25/14	602,373	18.6	822,177	0.733	46.4	2153	0	0	0	1
03/26/14	414,848	36.9	822,177	0.505	28.1	790	0	0	0	1
03/27/14	439,292	32.6	822,177	0.534	32.4	1050	0	0	0	1
03/28/14	429,334	30.5	822,177	0.522	34.5	1190	0	0	0	1
03/29/14	334,433	38.4	822,177	0.407	26.6	708	0	0	0	1
03/30/14	225,216	50.6	822,177	0.274	14.4	207	0	0	0	1
03/31/14	327,421	39.3	822,177	0.398	25.7	660	0	0	0	1
11/01/14	367,563	36.5	827,395	0.444	28.5	812	1	0	0	0
11/02/14	231,159	47.9	827,395	0.279	17.1	292	1	0	0	0
11/03/14	233,899	47.7	827,395	0.283	17.3	299	1	0	0	0
11/04/14	268,421	41.9	827,395	0.324	23.1	534	1	0	0	0
11/05/14	326,320	36.8	827,395	0.394	28.2	795	1	0	0	0
11/06/14	340,678	35.8	827,395	0.412	29.2	853	1	0	0	0
11/07/14	335,309	40.5	827,395	0.405	24.5	600	1	0	0	0
11/08/14	322,365	38.5	827,395	0.390	26.5	702	1	0	0	0
11/09/14	393,884	32.0	827,395	0.476	33.0	1089	1	0	0	0
11/10/14	508,087	26.0	827,395	0.614	39.0	1521	1	0	0	0
11/11/14	553,993	20.3	827,395	0.670	44.7	1998	1	0	0	0
11/12/14	560,707	21.0	827,395	0.678	44.0	1936	1	0	0	0
11/13/14	585,474	17.2	827,395	0.708	47.8	2285	1	0	0	0
11/14/14	613,431	13.3	827,395	0.741	51.7	2673	1	0	0	0
11/15/14	585,907	18.0	827,395	0.708	47.0	2209	1	0	0	0
11/16/14	659,920	10.8	827,395	0.798	54.2	2938	1	0	0	0
11/17/14	714,806	10.5	827,395	0.864	54.5	2970	1	0	0	0
11/18/14	644,371	16.5	827,395	0.779	48.5	2352	1	0	0	0
11/19/14	626,852	17.6	827,395	0.758	47.4	2247	1	0	0	0
11/20/14	681,400	10.6	827,395	0.824	54.4	2959	1	0	0	0
11/21/14	517,790	30.3	827,395	0.626	34.7	1204	1	0	0	0
11/22/14	372,244	40.0	827,395	0.450	25.0	625	1	0	0	0
11/23/14	384,723	35.6	827,395	0.465	29.4	864	1	0	0	0

Date	Firm Throughput	Temperature	Firm Customer	UPC	HDD	HDDs^2	Nov	Dec	Feb	Mar
11/24/14	651,368	15.9	827,395	0.787	49.1	2411	1	0	0	0
11/25/14	573,152	22.3	827,395	0.693	42.7	1823	1	0	0	0
11/26/14	632,391	14.1	827,395	0.764	50.9	2591	1	0	0	0
11/27/14	691,455	7.9	827,395	0.836	57.1	3260	1	0	0	0
11/28/14	576,838	21.9	827,395	0.697	43.1	1858	1	0	0	0
11/29/14	495,652	24.8	827,395	0.599	40.2	1616	1	0	0	0
11/30/14	759,517	6.8	827,395	0.918	58.2	3387	1	0	0	0
12/01/14	790,337	6.0	829,243	0.953	59.0	3481	0	1	0	0
12/02/14	667,030	17.8	829,243	0.804	47.2	2228	0	1	0	0
12/03/14	624,334	17.8	829,243	0.753	47.2	2228	0	1	0	0
12/04/14	499,938	29.0	829,243	0.603	36.0	1296	0	1	0	0
12/05/14	498,939	26.8	829,243	0.602	38.2	1459	0	1	0	0
12/06/14	500,326	26.3	829,243	0.603	38.7	1498	0	1	0	0
12/07/14	458,325	33.6	829,243	0.553	31.4	986	0	1	0	0
12/08/14	557,999	23.2	829,243	0.673	41.8	1747	0	1	0	0
12/09/14	577,744	21.3	829,243	0.697	43.7	1910	0	1	0	0
12/10/14	518,127	26.9	829,243	0.625	38.1	1452	0	1	0	0
12/11/14	467,898	31.1	829,243	0.564	33.9	1149	0	1	0	0
12/12/14	400,232	35.9	829,243	0.483	29.1	847	0	1	0	0
12/13/14	284,196	45.8	829,243	0.343	19.2	369	0	1	0	0
12/14/14	258,361	48.3	829,243	0.312	16.7	279	0	1	0	0
12/15/14	405,457	33.9	829,243	0.489	31.1	967	0	1	0	0
12/16/14	638,372	16.4	829,243	0.770	48.6	2362	0	1	0	0
12/17/14	652,468	15.5	829,243	0.787	49.5	2450	0	1	0	0
12/18/14	596,151	20.5	829,243	0.719	44.5	1980	0	1	0	0
12/19/14	501,724	28.4	829,243	0.605	36.6	1340	0	1	0	0
12/20/14	459,592	31.6	829,243	0.554	33.4	1116	0	1	0	0
12/21/14	410,299	36.5	829,243	0.495	28.5	812	0	1	0	0
12/22/14	406,959	35.3	829,243	0.491	29.7	882	0	1	0	0
12/23/14	412,973	34.9	829,243	0.498	30.1	906	0	1	0	0
12/24/14	412,651	32.5	829,243	0.498	32.5	1056	0	1	0	0
12/25/14	414,740	32.7	829,243	0.500	32.3	1043	0	1	0	0
12/26/14	481,652	28.3	829,243	0.581	36.7	1347	0	1	0	0
12/27/14	590,972	15.2	829,243	0.713	49.8	2480	0	1	0	0
12/28/14	663,340	12.7	829,243	0.800	52.3	2735	0	1	0	0
12/29/14	854,543	0.7	829,243	1.031	64.3	4134	0	1	0	0
12/30/14	940,053	(2.4)	829,243	1.134	67.4	4543	0	1	0	0
12/31/14	776,560	11.7	829,243	0.936	53.3	2841	0	1	0	0
01/01/15	618,564	18.6	821,220	0.753	46.4	2153	0	0	0	0
01/02/15	586,734	24.1	830,376	0.707	40.9	1673	0	0	0	0
01/03/15	663,484	15.6	830,376	0.799	49.4	2440	0	0	0	0
01/04/15	950,644	(5.9)	830,376	1.145	70.9	5027	0	0	0	0
01/05/15	944,214	(2.8)	830,376	1.137	67.8	4597	0	0	0	0
01/06/15	939,937	(0.4)	830,376	1.132	65.4	4277	0	0	0	0
01/07/15	949,471	(2.4)	830,376	1.143	67.4	4543	0	0	0	0
01/08/15	879,746	5.1	830,376	1.059	59.9	3588	0	0	0	0
01/09/15	876,851	0.7	830,376	1.056	64.3	4134	0	0	0	0
01/10/15	772,023	9.8	830,376	0.930	55.2	3047	0	0	0	0
01/11/15	783,629	6.7	830,376	0.944	58.3	3399	0	0	0	0
01/12/15	911,739	(2.5)	830,376	1.098	67.5	4556	0	0	0	0
01/13/15	756,958	13.4	830,376	0.912	51.6	2663	0	0	0	0
01/14/15	590,481	22.5	830,376	0.711	42.5	1806	0	0	0	0
01/15/15	507,661	29.2	830,376	0.611	35.8	1282	0	0	0	0
01/16/15	514,955	28.1	830,376	0.620	36.9	1362	0	0	0	0
01/17/15	466,621	32.9	830,376	0.562	32.1	1030	0	0	0	0
01/18/15	454,265	30.5	830,376	0.547	34.5	1190	0	0	0	0
01/19/15	441,767	32.4	830,376	0.532	32.6	1063	0	0	0	0
01/20/15	491,225	29.0	830,376	0.592	36.0	1296	0	0	0	0
01/21/15	525,076	26.6	830,376	0.632	38.4	1475	0	0	0	0
01/22/15	541,206	26.7	830,376	0.652	38.3	1467	0	0	0	0
01/23/15	427,079	32.6	830,376	0.514	32.4	1050	0	0	0	0
01/24/15	402,152	33.5	830,376	0.484	31.5	992	0	0	0	0
01/25/15	521,749	24.6	830,376	0.628	40.4	1632	0	0	0	0
01/26/15	395,529	37.1	830,376	0.476	27.9	778	0	0	0	0
01/27/15	456,665	30.9	830,376	0.550	34.1	1163	0	0	0	0

Date	Firm Throughput	Temperature	Firm Customer	UPC	HDD	HDDs^2	Nov	Dec	Feb	Mar
01/28/15	485,348	30.6	830,376	0.584	34.4	1183	0	0	0	0
01/29/15	611,743	19.9	830,376	0.737	45.1	2034	0	0	0	0
01/30/15	560,072	23.0	830,376	0.674	42.0	1764	0	0	0	0
01/31/15	593,192	22.4	830,376	0.714	42.6	1815	0	0	0	0
02/01/15	762,696	8.6	831,145	0.918	56.4	3181	0	0	1	0
02/02/15	749,680	9.5	831,145	0.902	55.5	3080	0	0	1	0
02/03/15	702,139	13.5	831,145	0.845	51.5	2652	0	0	1	0
02/04/15	795,294	3.7	831,145	0.957	61.3	3758	0	0	1	0
02/05/15	701,447	14.8	831,145	0.844	50.2	2520	0	0	1	0
02/06/15	531,220	23.8	831,145	0.639	41.2	1697	0	0	1	0
02/07/15	456,349	30.8	831,145	0.549	34.2	1170	0	0	1	0
02/08/15	537,857	25.2	831,145	0.647	39.8	1584	0	0	1	0
02/09/15	500,250	25.6	831,145	0.602	39.4	1552	0	0	1	0
02/10/15	581,851	24.5	831,145	0.700	40.5	1640	0	0	1	0
02/11/15	772,821	6.5	831,145	0.930	58.5	3422	0	0	1	0
02/12/15	768,543	8.4	831,145	0.925	56.6	3204	0	0	1	0
02/13/15	691,486	14.8	831,145	0.832	50.2	2520	0	0	1	0
02/14/15	840,306	1.3	831,145	1.011	63.7	4058	0	0	1	0
02/15/15	807,592	7.5	831,145	0.972	57.5	3306	0	0	1	0
02/16/15	747,739	11.0	831,145	0.900	54.0	2916	0	0	1	0
02/17/15	872,945	0.8	831,145	1.050	64.2	4122	0	0	1	0
02/18/15	959,990	(4.5)	831,145	1.155	69.5	4830	0	0	1	0
02/19/15	800,579	5.5	831,145	0.963	59.5	3540	0	0	1	0
02/20/15	638,483	20.8	831,145	0.768	44.2	1954	0	0	1	0
02/21/15	763,072	5.8	831,145	0.918	59.2	3505	0	0	1	0
02/22/15	945,749	(6.0)	831,145	1.138	71.0	5041	0	0	1	0
02/23/15	708,701	20.0	831,145	0.853	45.0	2025	0	0	1	0
02/24/15	620,386	18.7	831,145	0.746	46.3	2144	0	0	1	0
02/25/15	783,255	7.1	831,145	0.942	57.9	3352	0	0	1	0
02/26/15	830,745	2.8	831,145	1.000	62.2	3869	0	0	1	0
02/27/15	774,493	6.7	831,145	0.932	58.3	3399	0	0	1	0
02/28/15	685,372	15.5	831,145	0.825	49.5	2450	0	0	1	0
03/01/15	627,674	19.5	831,261	0.755	45.5	2070	0	0	0	1
03/02/15	570,691	22.1	831,261	0.687	42.9	1840	0	0	0	1
03/03/15	691,313	12.7	831,261	0.832	52.3	2735	0	0	0	1
03/04/15	842,930	1.8	831,261	1.014	63.2	3994	0	0	0	1
03/05/15	725,944	10.7	831,261	0.873	54.3	2948	0	0	0	1
03/06/15	470,830	31.8	831,261	0.566	33.2	1102	0	0	0	1
03/07/15	381,236	35.9	831,261	0.459	29.1	847	0	0	0	1
03/08/15	355,291	39.5	831,261	0.427	25.5	650	0	0	0	1
03/09/15	298,854	46.8	831,261	0.360	18.2	331	0	0	0	1
03/10/15	262,695	46.4	831,261	0.316	18.6	346	0	0	0	1
03/11/15	252,506	46.0	831,261	0.304	19.0	361	0	0	0	1
03/12/15	212,362	53.5	831,261	0.255	11.5	132	0	0	0	1
03/13/15	231,551	46.7	831,261	0.279	18.3	335	0	0	0	1
03/14/15	219,062	50.3	831,261	0.264	14.7	216	0	0	0	1
03/15/15	173,085	58.2	831,261	0.208	6.8	46	0	0	0	1
03/16/15	291,740	42.7	831,261	0.351	22.3	497	0	0	0	1
03/17/15	355,797	37.0	831,261	0.428	28.0	784	0	0	0	1
03/18/15	354,330	40.0	831,261	0.426	25.0	625	0	0	0	1
03/19/15	312,948	42.3	831,261	0.376	22.7	515	0	0	0	1
03/20/15	300,948	41.1	831,261	0.362	23.9	571	0	0	0	1
03/21/15	395,428	33.2	831,261	0.476	31.8	1011	0	0	0	1
03/22/15	457,962	31.0	831,261	0.551	34.0	1156	0	0	0	1
03/23/15	451,317	28.5	831,261	0.543	36.5	1332	0	0	0	1
03/24/15	419,337	33.0	831,261	0.504	32.0	1024	0	0	0	1
03/25/15	459,571	33.5	831,261	0.553	31.5	992	0	0	0	1
03/26/15	489,174	28.1	831,261	0.588	36.9	1362	0	0	0	1
03/27/15	436,770	27.8	831,261	0.525	37.2	1384	0	0	0	1
03/28/15	359,926	36.7	831,261	0.433	28.3	801	0	0	0	1
03/29/15	321,955	44.0	831,261	0.387	21.0	441	0	0	0	1
03/30/15	270,307	44.5	831,261	0.325	20.5	420	0	0	0	1
03/31/15	180,486	54.0	831,261	0.217	11.0	121	0	0	0	1
11/01/15	186,784	50.7	835,774	0.223	14.3	204	1	0	0	0
11/02/15	138,970	56.5	835,774	0.166	8.5	72	1	0	0	0

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11/03/15	109,063	57.6	835,774	0.130	7.4	55	1	0	0	0
11/04/15	115,379	60.4	835,774	0.138	4.6	21	1	0	0	0
11/05/15	183,702	48.6	835,774	0.220	16.4	269	1	0	0	0
11/06/15	276,913	40.7	835,774	0.331	24.3	590	1	0	0	0
11/07/15	259,975	44.8	835,774	0.311	20.2	408	1	0	0	0
11/08/15	203,064	51.0	835,774	0.243	14.0	196	1	0	0	0
11/09/15	184,526	49.3	835,774	0.221	15.7	246	1	0	0	0
11/10/15	182,491	50.5	835,774	0.218	14.5	210	1	0	0	0
11/11/15	241,315	46.1	835,774	0.289	18.9	357	1	0	0	0
11/12/15	350,921	37.4	835,774	0.420	27.6	762	1	0	0	0
11/13/15	325,752	37.6	835,774	0.390	27.4	751	1	0	0	0
11/14/15	239,847	47.4	835,774	0.287	17.6	310	1	0	0	0
11/15/15	173,240	53.7	835,774	0.207	11.3	128	1	0	0	0
11/16/15	219,808	48.8	835,774	0.263	16.2	262	1	0	0	0
11/17/15	182,261	53.7	835,774	0.218	11.3	128	1	0	0	0
11/18/15	299,903	40.3	835,774	0.359	24.7	610	1	0	0	0
11/19/15	483,830	30.3	835,774	0.579	34.7	1204	1	0	0	0
11/20/15	508,067	24.5	835,774	0.608	40.5	1640	1	0	0	0
11/21/15	512,731	22.3	835,774	0.613	42.7	1823	1	0	0	0
11/22/15	460,295	28.6	835,774	0.551	36.4	1325	1	0	0	0
11/23/15	376,597	35.5	835,774	0.451	29.5	870	1	0	0	0
11/24/15	349,079	39.3	835,774	0.418	25.7	660	1	0	0	0
11/25/15	312,036	41.6	835,774	0.373	23.4	548	1	0	0	0
11/26/15	479,519	25.6	835,774	0.574	39.4	1552	1	0	0	0
11/27/15	552,812	20.1	835,774	0.661	44.9	2016	1	0	0	0
11/28/15	508,314	24.0	835,774	0.608	41.0	1681	1	0	0	0
11/29/15	451,483	30.7	835,774	0.540	34.3	1176	1	0	0	0
11/30/15	437,944	33.0	835,774	0.524	32.0	1024	1	0	0	0
12/01/15	442,535	29.5	837,760	0.528	35.5	1260	0	1	0	0
12/02/15	447,920	30.4	837,760	0.535	34.6	1197	0	1	0	0
12/03/15	472,297	28.2	837,760	0.564	36.8	1354	0	1	0	0
12/04/15	368,165	39.1	837,760	0.439	25.9	671	0	1	0	0
12/05/15	328,862	41.1	837,760	0.393	23.9	571	0	1	0	0
12/06/15	403,379	33.8	837,760	0.481	31.2	973	0	1	0	0
12/07/15	374,391	37.3	837,760	0.447	27.7	767	0	1	0	0
12/08/15	381,841	36.8	837,760	0.456	28.2	795	0	1	0	0
12/09/15	327,136	42.7	837,760	0.390	22.3	497	0	1	0	0
12/10/15	334,222	41.0	837,760	0.399	24.0	576	0	1	0	0
12/11/15	363,681	36.8	837,760	0.434	28.2	795	0	1	0	0
12/12/15	343,595	39.6	837,760	0.410	25.4	645	0	1	0	0
12/13/15	368,992	38.5	837,760	0.440	26.5	702	0	1	0	0
12/14/15	437,799	33.2	837,760	0.523	31.8	1011	0	1	0	0
12/15/15	436,476	34.2	837,760	0.521	30.8	949	0	1	0	0
12/16/15	488,553	29.6	837,760	0.583	35.4	1253	0	1	0	0
12/17/15	603,595	20.8	837,760	0.720	44.2	1954	0	1	0	0
12/18/15	698,006	13.1	837,760	0.833	51.9	2694	0	1	0	0
12/19/15	566,103	25.3	837,760	0.676	39.7	1576	0	1	0	0
12/20/15	434,205	34.4	837,760	0.518	30.6	936	0	1	0	0
12/21/15	458,336	31.3	837,760	0.547	33.7	1136	0	1	0	0
12/22/15	447,446	33.7	837,760	0.534	31.3	980	0	1	0	0
12/23/15	471,586	29.4	837,760	0.563	35.6	1267	0	1	0	0
12/24/15	512,214	25.7	837,760	0.611	39.3	1544	0	1	0	0
12/25/15	475,231	28.4	837,760	0.567	36.6	1340	0	1	0	0
12/26/15	508,144	27.1	837,760	0.607	37.9	1436	0	1	0	0
12/27/15	640,955	15.6	837,760	0.765	49.4	2440	0	1	0	0
12/28/15	638,266	21.7	837,760	0.762	43.3	1875	0	1	0	0
12/29/15	564,844	22.7	837,760	0.674	42.3	1789	0	1	0	0
12/30/15	595,136	18.7	837,760	0.710	46.3	2144	0	1	0	0
12/31/15	642,391	16.6	837,760	0.767	48.4	2343	0	1	0	0
01/01/16	572,008	21.3	839,290	0.682	43.7	1910	0	0	0	0
01/02/16	523,491	26.5	839,290	0.624	38.5	1482	0	0	0	0
01/03/16	576,480	21.3	839,290	0.687	43.7	1910	0	0	0	0
01/04/16	599,468	20.9	839,290	0.714	44.1	1945	0	0	0	0
01/05/16	528,614	26.4	839,290	0.630	38.6	1490	0	0	0	0
01/06/16	476,750	30.8	839,290	0.568	34.2	1170	0	0	0	0

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01/07/16	444,228	32.6	839,290	0.529	32.4	1050	0	0	0	0
01/08/16	546,913	22.8	839,290	0.652	42.2	1781	0	0	0	0
01/09/16	871,416	(2.3)	839,290	1.038	67.3	4529	0	0	0	0
01/10/16	921,350	(5.3)	839,290	1.098	70.3	4942	0	0	0	0
01/11/16	873,927	0.9	839,290	1.041	64.1	4109	0	0	0	0
01/12/16	888,242	(1.4)	839,290	1.058	66.4	4409	0	0	0	0
01/13/16	670,113	17.6	839,290	0.798	47.4	2247	0	0	0	0
01/14/16	586,633	23.5	839,290	0.699	41.5	1722	0	0	0	0
01/15/16	707,301	12.6	839,290	0.843	52.4	2746	0	0	0	0
01/16/16	955,546	(6.7)	839,290	1.139	71.7	5141	0	0	0	0
01/17/16	994,146	(8.2)	839,290	1.185	73.2	5358	0	0	0	0
01/18/16	958,427	(2.8)	839,290	1.142	67.8	4597	0	0	0	0
01/19/16	824,586	7.2	839,290	0.982	57.8	3341	0	0	0	0
01/20/16	647,507	20.3	839,290	0.771	44.7	1998	0	0	0	0
01/21/16	620,688	20.9	839,290	0.740	44.1	1945	0	0	0	0
01/22/16	617,111	20.6	839,290	0.735	44.4	1971	0	0	0	0
01/23/16	593,340	22.8	839,290	0.707	42.2	1781	0	0	0	0
01/24/16	508,263	28.5	839,290	0.606	36.5	1332	0	0	0	0
01/25/16	535,877	26.9	839,290	0.638	38.1	1452	0	0	0	0
01/26/16	595,250	22.1	839,290	0.709	42.9	1840	0	0	0	0
01/27/16	485,934	36.0	839,290	0.579	29.0	841	0	0	0	0
01/28/16	547,422	24.7	839,290	0.652	40.3	1624	0	0	0	0
01/29/16	481,943	31.0	839,290	0.574	34.0	1156	0	0	0	0
01/30/16	408,721	36.7	839,290	0.487	28.3	801	0	0	0	0
01/31/16	435,251	31.9	839,290	0.519	33.1	1096	0	0	0	0
02/01/16	490,305	29.7	839,679	0.584	35.3	1246	0	0	1	0
02/02/16	579,907	24.7	839,679	0.691	40.3	1624	0	0	1	0
02/03/16	630,886	15.3	839,679	0.751	49.7	2470	0	0	1	0
02/04/16	653,631	16.4	839,679	0.778	48.6	2362	0	0	1	0
02/05/16	571,112	24.8	839,679	0.680	40.2	1616	0	0	1	0
02/06/16	453,128	34.3	839,679	0.540	30.7	942	0	0	1	0
02/07/16	563,434	24.3	839,679	0.671	40.7	1656	0	0	1	0
02/08/16	754,508	11.9	839,679	0.899	53.1	2820	0	0	1	0
02/09/16	758,905	9.7	839,679	0.904	55.3	3058	0	0	1	0
02/10/16	776,442	8.5	839,679	0.925	56.5	3192	0	0	1	0
02/11/16	719,315	13.0	839,679	0.857	52.0	2704	0	0	1	0
02/12/16	834,719	2.5	839,679	0.994	62.5	3906	0	0	1	0
02/13/16	763,627	7.8	839,679	0.909	57.2	3272	0	0	1	0
02/14/16	672,416	18.0	839,679	0.801	47.0	2209	0	0	1	0
02/15/16	486,405	30.3	839,679	0.579	34.7	1204	0	0	1	0
02/16/16	541,235	24.4	839,679	0.645	40.6	1648	0	0	1	0
02/17/16	538,297	26.9	839,679	0.641	38.1	1452	0	0	1	0
02/18/16	435,593	37.4	839,679	0.519	27.6	762	0	0	1	0
02/19/16	382,817	40.3	839,679	0.456	24.7	610	0	0	1	0
02/20/16	427,988	33.4	839,679	0.510	31.6	999	0	0	1	0
02/21/16	460,019	31.7	839,679	0.548	33.3	1109	0	0	1	0
02/22/16	444,186	33.0	839,679	0.529	32.0	1024	0	0	1	0
02/23/16	433,803	35.7	839,679	0.517	29.3	858	0	0	1	0
02/24/16	456,317	32.7	839,679	0.543	32.3	1043	0	0	1	0
02/25/16	487,889	28.7	839,679	0.581	36.3	1318	0	0	1	0
02/26/16	383,094	36.2	839,679	0.456	28.8	829	0	0	1	0
02/27/16	261,306	47.0	839,679	0.311	18.0	324	0	0	1	0
02/28/16	469,162	32.8	839,679	0.559	32.2	1037	0	0	1	0
02/29/16	571,942	20.6	839,679	0.681	44.4	1971	0	0	1	0
03/01/16	604,214	18.7	839,821	0.719	46.3	2144	0	0	0	1
03/02/16	503,024	26.4	839,821	0.599	38.6	1490	0	0	0	1
03/03/16	473,071	30.9	839,821	0.563	34.1	1163	0	0	0	1
03/04/16	462,937	33.1	839,821	0.551	31.9	1018	0	0	0	1
03/05/16	421,111	33.2	839,821	0.501	31.8	1011	0	0	0	1
03/06/16	263,251	48.0	839,821	0.313	17.0	289	0	0	0	1
03/07/16	162,870	58.2	839,821	0.194	6.8	46	0	0	0	1
03/08/16	209,168	49.3	839,821	0.249	15.7	246	0	0	0	1
03/09/16	366,032	37.5	839,821	0.436	27.5	756	0	0	0	1
03/10/16	351,183	39.2	839,821	0.418	25.8	666	0	0	0	1
03/11/16	184,191	55.8	839,821	0.219	9.2	85	0	0	0	1

Date	Firm Throughput	Temperature	Firm Customer	UPC	HDD	HDDs^2	Nov	Dec	Feb	Mar
03/12/16	138,386	56.8	839,821	0.165	8.2	67	0	0	0	1
03/13/16	211,457	51.4	839,821	0.252	13.6	185	0	0	0	1
03/14/16	176,403	53.6	839,821	0.210	11.4	130	0	0	0	1
03/15/16	240,550	48.1	839,821	0.286	16.9	286	0	0	0	1
03/16/16	343,811	41.0	839,821	0.409	24.0	576	0	0	0	1
03/17/16	395,690	36.0	839,821	0.471	29.0	841	0	0	0	1
03/18/16	437,428	32.0	839,821	0.521	33.0	1089	0	0	0	1
03/19/16	416,289	33.7	839,821	0.496	31.3	980	0	0	0	1
03/20/16	386,858	35.3	839,821	0.461	29.7	882	0	0	0	1
03/21/16	302,660	44.3	839,821	0.360	20.7	428	0	0	0	1
03/22/16	305,767	41.8	839,821	0.364	23.2	538	0	0	0	1
03/23/16	468,691	30.7	839,821	0.558	34.3	1176	0	0	0	1
03/24/16	366,263	36.2	839,821	0.436	28.8	829	0	0	0	1
03/25/16	305,318	42.4	839,821	0.364	22.6	511	0	0	0	1
03/26/16	295,649	44.3	839,821	0.352	20.7	428	0	0	0	1
03/27/16	371,481	36.2	839,821	0.442	28.8	829	0	0	0	1
03/28/16	235,553	48.1	839,821	0.280	16.9	286	0	0	0	1
03/29/16	196,464	52.5	839,821	0.234	12.5	156	0	0	0	1
03/30/16	281,201	44.3	839,821	0.335	20.7	428	0	0	0	1
03/31/16	288,851	42.5	839,821	0.344	22.5	506	0	0	0	1
11/01/16	175,112	51.1	844,030	0.207	13.9	193	1	0	0	0
11/02/16	186,457	52.1	844,030	0.221	12.9	166	1	0	0	0
11/03/16	172,606	52.3	844,030	0.205	12.7	161	1	0	0	0
11/04/16	156,495	55.0	844,030	0.185	10.0	100	1	0	0	0
11/05/16	136,107	57.5	844,030	0.161	7.5	56	1	0	0	0
11/06/16	132,000	56.2	844,030	0.156	8.8	77	1	0	0	0
11/07/16	162,791	54.3	844,030	0.193	10.7	114	1	0	0	0
11/08/16	215,220	47.0	844,030	0.255	18.0	324	1	0	0	0
11/09/16	190,901	51.7	844,030	0.226	13.3	177	1	0	0	0
11/10/16	174,519	53.0	844,030	0.207	12.0	144	1	0	0	0
11/11/16	276,877	40.8	844,030	0.328	24.2	586	1	0	0	0
11/12/16	241,979	46.9	844,030	0.287	18.1	328	1	0	0	0
11/13/16	194,288	50.8	844,030	0.230	14.2	202	1	0	0	0
11/14/16	270,644	43.8	844,030	0.321	21.2	449	1	0	0	0
11/15/16	243,154	52.8	844,030	0.288	12.2	149	1	0	0	0
11/16/16	189,559	49.1	844,030	0.225	15.9	253	1	0	0	0
11/17/16	213,639	50.8	844,030	0.253	14.2	202	1	0	0	0
11/18/16	415,754	34.0	844,030	0.493	31.0	961	1	0	0	0
11/19/16	478,629	22.6	844,030	0.567	42.4	1798	1	0	0	0
11/20/16	491,226	23.2	844,030	0.582	41.8	1747	1	0	0	0
11/21/16	418,800	34.5	844,030	0.496	30.5	930	1	0	0	0
11/22/16	430,520	34.7	844,030	0.510	30.3	918	1	0	0	0
11/23/16	399,971	34.5	844,030	0.474	30.5	930	1	0	0	0
11/24/16	379,035	34.7	844,030	0.449	30.3	918	1	0	0	0
11/25/16	416,991	33.2	844,030	0.494	31.8	1011	1	0	0	0
11/26/16	367,075	36.7	844,030	0.435	28.3	801	1	0	0	0
11/27/16	353,286	42.6	844,030	0.419	22.4	502	1	0	0	0
11/28/16	307,191	43.1	844,030	0.364	21.9	480	1	0	0	0
11/29/16	383,639	36.5	844,030	0.455	28.5	812	1	0	0	0
11/30/16	378,645	36.8	844,030	0.449	28.2	795	1	0	0	0
12/01/16	412,205	34.3	846,190	0.487	30.7	942	0	1	0	0
12/02/16	449,261	31.0	846,190	0.531	34.0	1156	0	1	0	0
12/03/16	431,996	31.1	846,190	0.511	33.9	1149	0	1	0	0
12/04/16	433,045	33.7	846,190	0.512	31.3	980	0	1	0	0
12/05/16	443,207	34.7	846,190	0.524	30.3	918	0	1	0	0
12/06/16	649,187	19.8	846,190	0.767	45.2	2043	0	1	0	0
12/07/16	692,149	17.7	846,190	0.818	47.3	2237	0	1	0	0
12/08/16	667,661	19.2	846,190	0.789	45.8	2098	0	1	0	0
12/09/16	722,310	11.5	846,190	0.854	53.5	2862	0	1	0	0
12/10/16	747,781	12.7	846,190	0.884	52.3	2735	0	1	0	0
12/11/16	675,130	14.0	846,190	0.798	51.0	2601	0	1	0	0
12/12/16	810,749	0.8	846,190	0.958	64.2	4122	0	1	0	0
12/13/16	816,375	6.7	846,190	0.965	58.3	3399	0	1	0	0
12/14/16	906,821	(0.7)	846,190	1.072	65.7	4316	0	1	0	0
12/15/16	858,236	2.4	846,190	1.014	62.6	3919	0	1	0	0

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12/16/16	748,004	10.3	846,190	0.884	54.7	2992	0	1	0	0
12/17/16	924,144	(5.5)	846,190	1.092	70.5	4970	0	1	0	0
12/18/16	949,490	(3.5)	846,190	1.122	68.5	4692	0	1	0	0
12/19/16	653,564	22.9	846,190	0.772	42.1	1772	0	1	0	0
12/20/16	504,791	30.2	846,190	0.597	34.8	1211	0	1	0	0
12/21/16	481,764	32.1	846,190	0.569	32.9	1082	0	1	0	0
12/22/16	469,187	33.0	846,190	0.554	32.0	1024	0	1	0	0
12/23/16	441,706	34.0	846,190	0.522	31.0	961	0	1	0	0
12/24/16	433,442	33.5	846,190	0.512	31.5	992	0	1	0	0
12/25/16	479,853	34.0	846,190	0.567	31.0	961	0	1	0	0
12/26/16	675,647	19.3	846,190	0.798	45.7	2088	0	1	0	0
12/27/16	600,180	21.7	846,190	0.709	43.3	1875	0	1	0	0
12/28/16	492,010	31.6	846,190	0.581	33.4	1116	0	1	0	0
12/29/16	573,787	25.6	846,190	0.678	39.4	1552	0	1	0	0
12/30/16	542,298	27.7	846,190	0.641	37.3	1391	0	1	0	0
12/31/16	549,247	24.0	846,190	0.649	41.0	1681	0	1	0	0
01/01/17	508,549	28.5	847,652	0.600	36.5	1332	0	0	0	0
01/02/17	511,975	30.8	847,652	0.604	34.2	1170	0	0	0	0
01/03/17	846,397	5.0	847,652	0.999	60.0	3600	0	0	0	0
01/04/17	940,088	(1.0)	847,652	1.109	66.0	4356	0	0	0	0
01/05/17	978,992	(4.5)	847,652	1.155	69.5	4830	0	0	0	0
01/06/17	909,219	0.7	847,652	1.073	64.3	4134	0	0	0	0
01/07/17	890,812	2.0	847,652	1.051	63.0	3969	0	0	0	0
01/08/17	774,840	13.8	847,652	0.914	51.2	2621	0	0	0	0
01/09/17	632,193	24.7	847,652	0.746	40.3	1624	0	0	0	0
01/10/17	754,989	11.4	847,652	0.891	53.6	2873	0	0	0	0
01/11/17	807,324	6.4	847,652	0.952	58.6	3434	0	0	0	0
01/12/17	885,827	1.2	847,652	1.045	63.8	4070	0	0	0	0
01/13/17	854,130	5.0	847,652	1.008	60.0	3600	0	0	0	0
01/14/17	720,174	12.5	847,652	0.850	52.5	2756	0	0	0	0
01/15/17	615,127	21.5	847,652	0.726	43.5	1892	0	0	0	0
01/16/17	545,308	21.5	847,652	0.643	43.5	1892	0	0	0	0
01/17/17	506,063	31.0	847,652	0.597	34.0	1156	0	0	0	0
01/18/17	428,538	34.4	847,652	0.506	30.6	936	0	0	0	0
01/19/17	394,181	35.5	847,652	0.465	29.5	870	0	0	0	0
01/20/17	413,798	35.3	847,652	0.488	29.7	882	0	0	0	0
01/21/17	402,944	36.3	847,652	0.475	28.7	824	0	0	0	0
01/22/17	416,013	36.1	847,652	0.491	28.9	835	0	0	0	0
01/23/17	456,659	33.4	847,652	0.539	31.6	999	0	0	0	0
01/24/17	482,833	31.8	847,652	0.570	33.2	1102	0	0	0	0
01/25/17	528,128	29.2	847,652	0.623	35.8	1282	0	0	0	0
01/26/17	572,306	24.6	847,652	0.675	40.4	1632	0	0	0	0
01/27/17	542,634	25.6	847,652	0.640	39.4	1552	0	0	0	0
01/28/17	565,296	25.8	847,652	0.667	39.2	1537	0	0	0	0
01/29/17	573,423	22.5	847,652	0.676	42.5	1806	0	0	0	0
01/30/17	464,225	39.3	847,652	0.548	25.7	660	0	0	0	0
01/31/17	500,505	30.8	847,652	0.590	34.2	1170	0	0	0	0
02/01/17	721,539	12.8	848,051	0.851	52.2	2725	0	0	1	0
02/02/17	763,685	11.8	848,051	0.901	53.2	2830	0	0	1	0
02/03/17	669,541	18.3	848,051	0.790	46.7	2181	0	0	1	0
02/04/17	539,715	29.4	848,051	0.636	35.6	1267	0	0	1	0
02/05/17	585,156	21.7	848,051	0.690	43.3	1875	0	0	1	0
02/06/17	517,575	30.1	848,051	0.610	34.9	1218	0	0	1	0
02/07/17	709,681	15.3	848,051	0.837	49.7	2470	0	0	1	0
02/08/17	800,453	7.8	848,051	0.944	57.2	3272	0	0	1	0
02/09/17	666,837	18.3	848,051	0.786	46.7	2181	0	0	1	0
02/10/17	388,460	39.8	848,051	0.458	25.2	635	0	0	1	0
02/11/17	383,677	38.1	848,051	0.452	26.9	724	0	0	1	0
02/12/17	459,685	33.1	848,051	0.542	31.9	1018	0	0	1	0
02/13/17	391,559	38.6	848,051	0.462	26.4	697	0	0	1	0
02/14/17	470,812	31.3	848,051	0.555	33.7	1136	0	0	1	0
02/15/17	467,071	29.8	848,051	0.551	35.2	1239	0	0	1	0
02/16/17	408,163	34.6	848,051	0.481	30.4	924	0	0	1	0
02/17/17	261,660	47.3	848,051	0.309	17.7	313	0	0	1	0
02/18/17	276,223	45.1	848,051	0.326	19.9	396	0	0	1	0

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02/19/17	227,757	51.6	848,051	0.269	13.4	180	0	0	1	0
02/20/17	299,261	45.5	848,051	0.353	19.5	380	0	0	1	0
02/21/17	250,255	48.5	848,051	0.295	16.5	272	0	0	1	0
02/22/17	301,485	43.5	848,051	0.356	21.5	462	0	0	1	0
02/23/17	480,684	30.7	848,051	0.567	34.3	1176	0	0	1	0
02/24/17	613,915	21.8	848,051	0.724	43.2	1866	0	0	1	0
02/25/17	527,030	26.7	848,051	0.621	38.3	1467	0	0	1	0
02/26/17	475,282	30.2	848,051	0.560	34.8	1211	0	0	1	0
02/27/17	391,770	38.6	848,051	0.462	26.4	697	0	0	1	0
02/28/17	415,622	35.7	848,051	0.490	29.3	858	0	0	1	0
03/01/17	528,965	26.7	848,081	0.624	38.3	1467	0	0	0	1
03/02/17	579,692	21.5	848,081	0.684	43.5	1892	0	0	0	1
03/03/17	532,827	26.0	848,081	0.628	39.0	1521	0	0	0	1
03/04/17	400,350	37.4	848,081	0.472	27.6	762	0	0	0	1
03/05/17	231,850	51.9	848,081	0.273	13.1	172	0	0	0	1
03/06/17	289,212	46.9	848,081	0.341	18.1	328	0	0	0	1
03/07/17	453,101	37.4	848,081	0.534	27.6	762	0	0	0	1
03/08/17	510,583	28.2	848,081	0.602	36.8	1354	0	0	0	1
03/09/17	621,838	20.0	848,081	0.733	45.0	2025	0	0	0	1
03/10/17	698,918	12.6	848,081	0.824	52.4	2746	0	0	0	1
03/11/17	645,254	16.0	848,081	0.761	49.0	2401	0	0	0	1
03/12/17	677,954	18.6	848,081	0.799	46.4	2153	0	0	0	1
03/13/17	620,783	18.4	848,081	0.732	46.6	2172	0	0	0	1
03/14/17	589,024	20.1	848,081	0.695	44.9	2016	0	0	0	1
03/15/17	516,866	24.5	848,081	0.609	40.5	1640	0	0	0	1
03/16/17	434,161	34.7	848,081	0.512	30.3	918	0	0	0	1
03/17/17	440,258	36.2	848,081	0.519	28.8	829	0	0	0	1
03/18/17	404,543	34.1	848,081	0.477	30.9	955	0	0	0	1
03/19/17	325,956	44.3	848,081	0.384	20.7	428	0	0	0	1
03/20/17	314,144	43.7	848,081	0.370	21.3	454	0	0	0	1
03/21/17	461,027	28.7	848,081	0.544	36.3	1318	0	0	0	1
03/22/17	422,408	35.8	848,081	0.498	29.2	853	0	0	0	1
03/23/17	398,536	38.7	848,081	0.470	26.3	692	0	0	0	1
03/24/17	363,440	40.1	848,081	0.429	24.9	620	0	0	0	1
03/25/17	363,158	39.3	848,081	0.428	25.7	660	0	0	0	1
03/26/17	354,334	39.9	848,081	0.418	25.1	630	0	0	0	1
03/27/17	245,911	46.4	848,081	0.290	18.6	346	0	0	0	1
03/28/17	204,380	52.4	848,081	0.241	12.6	159	0	0	0	1
03/29/17	291,246	44.6	848,081	0.343	20.4	416	0	0	0	1
03/30/17	324,302	42.1	848,081	0.382	22.9	524	0	0	0	1
03/31/17	256,875	45.9	848,081	0.303	19.1	365	0	0	0	1
11/01/17	428,597	34.8	855,050	0.501	30.2	912	1	0	0	0
11/02/17	418,399	35.5	855,050	0.489	29.5	870	1	0	0	0
11/03/17	433,449	33.3	855,050	0.507	31.7	1005	1	0	0	0
11/04/17	368,746	40.1	855,050	0.431	24.9	620	1	0	0	0
11/05/17	495,995	28.0	855,050	0.580	37.0	1369	1	0	0	0
11/06/17	489,445	29.7	855,050	0.572	35.3	1246	1	0	0	0
11/07/17	467,421	30.3	855,050	0.547	34.7	1204	1	0	0	0
11/08/17	449,583	32.0	855,050	0.526	33.0	1089	1	0	0	0
11/09/17	669,935	15.8	855,050	0.784	49.2	2421	1	0	0	0
11/10/17	624,991	24.5	855,050	0.731	40.5	1640	1	0	0	0
11/11/17	436,294	33.6	855,050	0.510	31.4	986	1	0	0	0
11/12/17	485,793	30.4	855,050	0.568	34.6	1197	1	0	0	0
11/13/17	384,127	40.3	855,050	0.449	24.7	610	1	0	0	0
11/14/17	337,252	43.4	855,050	0.394	21.6	467	1	0	0	0
11/15/17	498,824	30.3	855,050	0.583	34.7	1204	1	0	0	0
11/16/17	486,085	33.2	855,050	0.568	31.8	1011	1	0	0	0
11/17/17	407,557	36.4	855,050	0.477	28.6	818	1	0	0	0
11/18/17	522,775	25.7	855,050	0.611	39.3	1544	1	0	0	0
11/19/17	457,568	33.7	855,050	0.535	31.3	980	1	0	0	0
11/20/17	429,713	39.2	855,050	0.503	25.8	666	1	0	0	0
11/21/17	597,454	21.4	855,050	0.699	43.6	1901	1	0	0	0
11/22/17	558,880	26.7	855,050	0.654	38.3	1467	1	0	0	0
11/23/17	340,811	43.3	855,050	0.399	21.7	471	1	0	0	0
11/24/17	307,989	45.4	855,050	0.360	19.6	384	1	0	0	0

Date	Firm Throughput	Temperature	Firm Customer	UPC	HDD	HDDs^2	Nov	Dec	Feb	Mar
11/25/17	431,187	32.7	855,050	0.504	32.3	1043	1	0	0	0
11/26/17	370,194	40.8	855,050	0.433	24.2	586	1	0	0	0
11/27/17	265,442	51.9	855,050	0.310	13.1	172	1	0	0	0
11/28/17	387,768	39.2	855,050	0.454	25.8	666	1	0	0	0
11/29/17	386,018	41.0	855,050	0.451	24.0	576	1	0	0	0
11/30/17	390,279	37.7	855,050	0.456	27.3	745	1	0	0	0
12/01/17	382,372	40.6	856,876	0.446	24.4	595	0	1	0	0
12/02/17	388,443	36.7	856,876	0.453	28.3	801	0	1	0	0
12/03/17	307,255	48.0	856,876	0.359	17.0	289	0	1	0	0
12/04/17	398,602	37.3	856,876	0.465	27.7	767	0	1	0	0
12/05/17	660,869	18.5	856,876	0.771	46.5	2162	0	1	0	0
12/06/17	705,302	15.5	856,876	0.823	49.5	2450	0	1	0	0
12/07/17	648,376	18.5	856,876	0.757	46.5	2162	0	1	0	0
12/08/17	551,970	26.6	856,876	0.644	38.4	1475	0	1	0	0
12/09/17	582,148	22.0	856,876	0.679	43.0	1849	0	1	0	0
12/10/17	530,736	27.0	856,876	0.619	38.0	1444	0	1	0	0
12/11/17	617,570	20.7	856,876	0.721	44.3	1962	0	1	0	0
12/12/17	603,958	22.1	856,876	0.705	42.9	1840	0	1	0	0
12/13/17	620,320	21.4	856,876	0.724	43.6	1901	0	1	0	0
12/14/17	612,968	22.3	856,876	0.715	42.7	1823	0	1	0	0
12/15/17	517,128	27.3	856,876	0.604	37.7	1421	0	1	0	0
12/16/17	527,550	27.8	856,876	0.616	37.2	1384	0	1	0	0
12/17/17	525,645	27.0	856,876	0.613	38.0	1444	0	1	0	0
12/18/17	441,579	36.5	856,876	0.515	28.5	812	0	1	0	0
12/19/17	520,642	27.0	856,876	0.608	38.0	1444	0	1	0	0
12/20/17	646,688	19.3	856,876	0.755	45.7	2088	0	1	0	0
12/21/17	632,128	21.2	856,876	0.738	43.8	1918	0	1	0	0
12/22/17	623,734	18.5	856,876	0.728	46.5	2162	0	1	0	0
12/23/17	637,218	17.8	856,876	0.744	47.2	2228	0	1	0	0
12/24/17	726,520	11.3	856,876	0.848	53.7	2884	0	1	0	0
12/25/17	947,340	(4.3)	856,876	1.106	69.3	4802	0	1	0	0
12/26/17	1,001,324	(4.0)	856,876	1.169	69.0	4761	0	1	0	0
12/27/17	908,634	2.4	856,876	1.060	62.6	3919	0	1	0	0
12/28/17	867,583	6.2	856,876	1.012	58.8	3457	0	1	0	0
12/29/17	981,199	(3.5)	856,876	1.145	68.5	4692	0	1	0	0
12/30/17	1,050,356	(9.3)	856,876	1.226	74.3	5520	0	1	0	0
12/31/17	1,069,678	(10.6)	856,876	1.248	75.6	5715	0	1	0	0
01/01/18	1,017,366	(6.1)	858,061	1.186	71.1	5055	0	0	0	0
01/02/18	892,468	7.4	858,061	1.040	57.6	3318	0	0	0	0
01/03/18	914,926	0.3	858,061	1.066	64.7	4186	0	0	0	0
01/04/18	977,462	(3.5)	858,061	1.139	68.5	4692	0	0	0	0
01/05/18	988,962	(4.2)	858,061	1.153	69.2	4789	0	0	0	0
01/06/18	841,628	9.2	858,061	0.981	55.8	3114	0	0	0	0
01/07/18	600,410	26.3	858,061	0.700	38.7	1498	0	0	0	0
01/08/18	515,050	30.3	858,061	0.600	34.7	1204	0	0	0	0
01/09/18	450,965	37.0	858,061	0.526	28.0	784	0	0	0	0
01/10/18	501,264	32.4	858,061	0.584	32.6	1063	0	0	0	0
01/11/18	918,470	2.7	858,061	1.070	62.3	3881	0	0	0	0
01/12/18	973,045	(4.0)	858,061	1.134	69.0	4761	0	0	0	0
01/13/18	961,403	(2.4)	858,061	1.120	67.4	4543	0	0	0	0
01/14/18	843,461	10.7	858,061	0.983	54.3	2948	0	0	0	0
01/15/18	936,841	2.1	858,061	1.092	62.9	3956	0	0	0	0
01/16/18	895,714	2.5	858,061	1.044	62.5	3906	0	0	0	0
01/17/18	665,777	22.8	858,061	0.776	42.2	1781	0	0	0	0
01/18/18	490,168	33.5	858,061	0.571	31.5	992	0	0	0	0
01/19/18	445,276	34.9	858,061	0.519	30.1	906	0	0	0	0
01/20/18	428,985	35.7	858,061	0.500	29.3	858	0	0	0	0
01/21/18	462,826	35.5	858,061	0.539	29.5	870	0	0	0	0
01/22/18	593,688	23.5	858,061	0.692	41.5	1722	0	0	0	0
01/23/18	597,524	19.8	858,061	0.696	45.2	2043	0	0	0	0
01/24/18	588,941	24.4	858,061	0.686	40.6	1648	0	0	0	0
01/25/18	561,082	28.1	858,061	0.654	36.9	1362	0	0	0	0
01/26/18	443,951	36.5	858,061	0.517	28.5	812	0	0	0	0
01/27/18	572,644	24.0	858,061	0.667	41.0	1681	0	0	0	0
01/28/18	729,437	14.0	858,061	0.850	51.0	2601	0	0	0	0

Date	Firm Throughput	Temperature	Firm Customer	UPC	HDD	HDDs^2	Nov	Dec	Feb	Mar
01/29/18	784,298	8.8	858,061	0.914	56.2	3158	0	0	0	0
01/30/18	669,658	23.8	858,061	0.780	41.2	1697	0	0	0	0
01/31/18	684,177	15.2	858,061	0.797	49.8	2480	0	0	0	0
02/01/18	924,503	(0.8)	858,899	1.076	65.8	4330	0	0	1	0
02/02/18	795,858	9.2	858,899	0.927	55.8	3114	0	0	1	0
02/03/18	791,799	9.4	858,899	0.922	55.6	3091	0	0	1	0
02/04/18	904,104	(0.9)	858,899	1.053	65.9	4343	0	0	1	0
02/05/18	873,296	4.4	858,899	1.017	60.6	3672	0	0	1	0
02/06/18	831,065	5.4	858,899	0.968	59.6	3552	0	0	1	0
02/07/18	783,792	8.8	858,899	0.913	56.2	3158	0	0	1	0
02/08/18	773,103	10.3	858,899	0.900	54.7	2992	0	0	1	0
02/09/18	810,309	6.0	858,899	0.943	59.0	3481	0	0	1	0
02/10/18	809,382	5.0	858,899	0.942	60.0	3600	0	0	1	0
02/11/18	787,931	9.4	858,899	0.917	55.6	3091	0	0	1	0
02/12/18	814,313	8.4	858,899	0.948	56.6	3204	0	0	1	0
02/13/18	638,828	24.0	858,899	0.744	41.0	1681	0	0	1	0
02/14/18	453,784	34.6	858,899	0.528	30.4	924	0	0	1	0
02/15/18	626,134	21.6	858,899	0.729	43.4	1884	0	0	1	0
02/16/18	682,067	17.4	858,899	0.794	47.6	2266	0	0	1	0
02/17/18	562,836	26.6	858,899	0.655	38.4	1475	0	0	1	0
02/18/18	543,577	31.8	858,899	0.633	33.2	1102	0	0	1	0
02/19/18	682,355	21.3	858,899	0.794	43.7	1910	0	0	1	0
02/20/18	751,568	12.5	858,899	0.875	52.5	2756	0	0	1	0
02/21/18	735,885	13.1	858,899	0.857	51.9	2694	0	0	1	0
02/22/18	604,466	26.0	858,899	0.704	39.0	1521	0	0	1	0
02/23/18	586,230	20.8	858,899	0.683	44.2	1954	0	0	1	0
02/24/18	615,694	22.8	858,899	0.717	42.2	1781	0	0	1	0
02/25/18	584,096	21.8	858,899	0.680	43.2	1866	0	0	1	0
02/26/18	458,431	33.1	858,899	0.534	31.9	1018	0	0	1	0
02/27/18	431,689	36.8	858,899	0.503	28.2	795	0	0	1	0
02/28/18	419,102	36.3	858,899	0.488	28.7	824	0	0	1	0
03/01/18	478,463	29.4	859,491	0.557	35.6	1267	0	0	0	1
03/02/18	447,032	35.1	859,491	0.520	29.9	894	0	0	0	1
03/03/18	377,607	39.8	859,491	0.439	25.2	635	0	0	0	1
03/04/18	433,688	37.8	859,491	0.505	27.2	740	0	0	0	1
03/05/18	553,936	30.8	859,491	0.644	34.2	1170	0	0	0	1
03/06/18	570,471	24.9	859,491	0.664	40.1	1608	0	0	0	1
03/07/18	590,839	20.6	859,491	0.687	44.4	1971	0	0	0	1
03/08/18	543,573	23.3	859,491	0.632	41.7	1739	0	0	0	1
03/09/18	475,311	27.4	859,491	0.553	37.6	1414	0	0	0	1
03/10/18	446,403	32.3	859,491	0.519	32.7	1069	0	0	0	1
03/11/18	496,528	31.4	859,491	0.578	33.6	1129	0	0	0	1
03/12/18	464,853	31.6	859,491	0.541	33.4	1116	0	0	0	1
03/13/18	472,171	29.6	859,491	0.549	35.4	1253	0	0	0	1
03/14/18	396,192	36.0	859,491	0.461	29.0	841	0	0	0	1
03/15/18	454,229	31.1	859,491	0.528	33.9	1149	0	0	0	1
03/16/18	445,927	32.9	859,491	0.519	32.1	1030	0	0	0	1
03/17/18	365,217	38.1	859,491	0.425	26.9	724	0	0	0	1
03/18/18	399,080	38.3	859,491	0.464	26.7	713	0	0	0	1
03/19/18	416,885	36.0	859,491	0.485	29.0	841	0	0	0	1
03/20/18	510,583	27.1	859,491	0.594	37.9	1436	0	0	0	1
03/21/18	432,152	34.1	859,491	0.503	30.9	955	0	0	0	1
03/22/18	419,388	35.6	859,491	0.488	29.4	864	0	0	0	1
03/23/18	436,289	37.2	859,491	0.508	27.8	773	0	0	0	1
03/24/18	443,657	33.7	859,491	0.516	31.3	980	0	0	0	1
03/25/18	388,072	37.9	859,491	0.452	27.1	734	0	0	0	1
03/26/18	452,500	34.4	859,491	0.526	30.6	936	0	0	0	1
03/27/18	373,151	37.2	859,491	0.434	27.8	773	0	0	0	1
03/28/18	390,628	37.8	859,491	0.454	27.2	740	0	0	0	1
03/29/18	432,204	32.4	859,491	0.503	32.6	1063	0	0	0	1
03/30/18	443,890	33.8	859,491	0.516	31.2	973	0	0	0	1
03/31/18	591,270	19.0	859,491	0.688	46.0	2116	0	0	0	1

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
11/01/12	2,287	5,719	13,318	8,006	14,665	21,324	35.9	29.1	847
11/02/12	2,187	5,383	12,415	7,570	13,778	19,985	37.5	27.5	756
11/03/12	2,066	4,991	10,943	7,057	12,529	18,000	37.5	27.5	756
11/04/12	1,945	4,970	10,928	6,915	12,379	17,843	41.4	23.6	557
11/05/12	2,127	5,415	12,602	7,542	13,843	20,144	41.3	23.7	562
11/06/12	2,193	5,554	12,994	7,747	14,244	20,741	39.8	25.2	635
11/07/12	2,166	5,469	12,967	7,635	14,119	20,602	39.9	25.1	630
11/08/12	1,965	4,995	11,671	6,960	12,796	18,631	43.3	21.7	471
11/09/12	1,683	4,286	10,008	5,969	10,973	15,977	47.3	17.7	313
11/10/12	1,379	3,512	7,318	4,891	8,550	12,209	53.8	11.2	125
11/11/12	2,787	6,914	14,282	9,701	16,842	23,983	24.9	40.1	1608
11/12/12	3,293	8,405	18,401	11,698	20,899	30,099	22.4	42.6	1815
11/13/12	2,380	6,428	14,401	8,808	16,009	23,209	36.9	28.1	790
11/14/12	1,904	5,224	11,944	7,128	13,100	19,072	43.6	21.4	458
11/15/12	2,368	5,992	14,039	8,360	15,380	22,399	35.9	29.1	847
11/16/12	2,210	5,466	12,695	7,676	14,024	20,371	36.8	28.2	795
11/17/12	1,572	3,877	8,908	5,449	9,903	14,357	49.0	16.0	256
11/18/12	1,498	3,914	9,078	5,412	9,951	14,490	50.4	14.6	213
11/19/12	1,762	4,542	10,853	6,304	11,731	17,157	46.3	18.7	350
11/20/12	1,904	4,682	11,422	6,586	12,297	18,008	45.0	20.0	400
11/21/12	1,293	3,200	7,544	4,493	8,265	12,037	56.5	8.5	72
11/22/12	2,304	5,345	11,049	7,649	13,174	18,698	31.7	33.3	1109
11/23/12	3,242	7,926	16,150	11,168	19,243	27,318	18.5	46.5	2162
11/24/12	2,929	6,866	14,393	9,795	16,992	24,188	27.3	37.7	1421
11/25/12	3,199	7,978	16,409	11,177	19,382	27,586	23.1	41.9	1756
11/26/12	3,702	9,339	19,899	13,041	22,991	32,940	18.1	46.9	2200
11/27/12	3,095	8,053	17,316	11,148	19,806	28,464	29.3	35.7	1274
11/28/12	2,890	7,390	16,359	10,280	18,460	26,639	30.7	34.3	1176
11/29/12	2,662	6,962	15,237	9,624	17,243	24,861	34.5	30.5	930
11/30/12	2,541	6,503	14,238	9,044	16,163	23,282	35.3	29.7	882
12/01/12	2,092	5,401	11,436	7,493	13,211	18,929	39.3	25.7	660
12/02/12	2,154	5,690	11,989	7,844	13,839	19,833	40.9	24.1	581
12/03/12	2,060	5,588	12,969	7,648	14,133	20,617	44.3	20.7	428
12/04/12	3,046	8,074	17,598	11,120	19,919	28,718	25.3	39.7	1576
12/05/12	2,644	7,099	15,417	9,743	17,452	25,160	37.8	27.2	740
12/06/12	2,494	6,857	15,308	9,351	17,005	24,659	33.4	31.6	999
12/07/12	2,839	7,227	15,866	10,066	17,999	25,932	28.0	37.0	1369
12/08/12	2,559	6,516	13,651	9,075	15,901	22,726	30.8	34.2	1170
12/09/12	3,081	8,204	16,338	11,285	19,454	27,623	22.9	42.1	1772
12/10/12	4,077	10,646	22,001	14,723	25,724	36,724	9.3	55.7	3102
12/11/12	3,804	10,270	20,937	14,074	24,543	35,011	17.0	48.0	2304
12/12/12	2,832	7,962	16,208	10,794	18,898	27,002	37.4	27.6	762
12/13/12	3,172	8,297	17,270	11,469	20,104	28,739	27.5	37.5	1406
12/14/12	2,700	6,924	14,480	9,624	16,864	24,104	33.5	31.5	992
12/15/12	2,588	6,385	12,970	8,973	15,458	21,943	34.7	30.3	918
12/16/12	3,385	8,439	17,221	11,824	20,435	29,045	21.7	43.3	1875
12/17/12	3,393	8,735	18,509	12,128	21,383	30,637	23.8	41.2	1697
12/18/12	3,182	8,265	17,368	11,447	20,131	28,815	27.8	37.2	1384
12/19/12	3,118	8,130	17,044	11,248	19,770	28,292	27.0	38.0	1444
12/20/12	4,008	10,182	20,490	14,190	24,435	34,680	16.8	48.2	2323
12/21/12	3,895	9,818	19,889	13,713	23,658	33,602	13.7	51.3	2632
12/22/12	3,391	8,579	16,753	11,970	20,347	28,723	19.1	45.9	2107
12/23/12	3,573	9,201	17,589	12,774	21,569	30,363	16.4	48.6	2362
12/24/12	3,895	9,995	18,511	13,890	23,146	32,401	9.0	56.0	3136
12/25/12	4,174	10,740	20,023	14,914	24,926	34,937	7.2	57.8	3341
12/26/12	4,249	10,993	22,024	15,242	26,254	37,266	12.5	52.5	2756
12/27/12	3,859	10,219	20,247	14,078	24,202	34,325	18.8	46.2	2134
12/28/12	3,544	9,317	18,840	12,861	22,281	31,701	19.4	45.6	2079
12/29/12	3,975	10,073	19,895	14,048	23,996	33,943	8.6	56.4	3181
12/30/12	3,711	9,585	18,532	13,296	22,562	31,828	16.9	48.1	2314
12/31/12	4,248	11,061	21,512	15,309	26,065	36,821	4.0	61.0	3721
01/01/13	3,997	10,636	20,285	14,633	24,776	34,918	13.7	51.3	2632
01/02/13	3,939	10,639	21,057	14,578	25,107	35,635	16.8	48.2	2323
01/03/13	4,120	10,787	21,512	14,907	25,663	36,419	15.3	49.7	2470
01/04/13	3,477	9,112	18,348	12,589	21,763	30,937	20.3	44.7	1998

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
01/05/13	3,472	8,966	17,279	12,438	21,078	29,717	18.3	46.7	2181
01/06/13	3,468	9,205	17,926	12,673	21,636	30,599	21.5	43.5	1892
01/07/13	3,165	8,535	17,948	11,700	20,674	29,648	27.2	37.8	1429
01/08/13	2,948	8,103	17,273	11,051	19,688	28,324	31.3	33.7	1136
01/09/13	3,011	7,942	17,069	10,953	19,488	28,022	29.5	35.5	1260
01/10/13	2,768	7,176	15,478	9,944	17,683	25,422	35.5	29.5	870
01/11/13	2,736	6,926	14,940	9,662	17,132	24,602	32.4	32.6	1063
01/12/13	4,168	10,270	20,374	14,438	24,625	34,812	7.4	57.6	3318
01/13/13	4,610	11,834	22,615	16,444	27,752	39,059	6.0	59.0	3481
01/14/13	4,547	11,733	23,372	16,280	27,966	39,652	11.7	53.3	2841
01/15/13	3,630	9,456	19,433	13,086	22,803	32,519	26.3	38.7	1498
01/16/13	3,892	10,060	20,808	13,952	24,356	34,760	19.8	45.2	2043
01/17/13	3,945	10,409	21,115	14,354	24,912	35,469	17.4	47.6	2266
01/18/13	2,779	7,398	15,453	10,177	17,904	25,630	33.7	31.3	980
01/19/13	4,036	10,210	19,964	14,246	24,228	34,210	12.8	52.2	2725
01/20/13	4,992	12,873	24,722	17,865	30,226	42,587	(0.1)	65.1	4238
01/21/13	5,815	14,843	29,461	20,658	35,389	50,119	(6.9)	71.9	5170
01/22/13	5,248	13,508	27,022	18,756	32,267	45,778	3.0	62.0	3844
01/23/13	5,282	13,481	27,045	18,763	32,286	45,808	1.9	63.1	3982
01/24/13	4,993	12,607	25,165	17,600	30,183	42,765	10.1	54.9	3014
01/25/13	4,651	11,517	23,273	16,168	27,805	39,441	10.2	54.8	3003
01/26/13	3,674	9,343	18,115	13,017	22,075	31,132	22.2	42.8	1832
01/27/13	3,039	8,152	15,954	11,191	19,168	27,145	31.2	33.8	1142
01/28/13	2,970	7,895	16,817	10,865	19,274	27,682	31.0	34.0	1156
01/29/13	3,333	8,703	18,059	12,036	21,066	30,095	27.1	37.9	1436
01/30/13	4,658	11,625	24,051	16,283	28,309	40,334	9.1	55.9	3125
01/31/13	5,700	14,220	28,403	19,920	34,122	48,323	(5.9)	70.9	5027
02/01/13	5,146	12,901	25,395	18,047	30,745	43,442	0.3	64.7	4186
02/02/13	4,308	11,258	21,426	15,566	26,279	36,992	7.2	57.8	3341
02/03/13	4,312	11,244	21,321	15,556	26,217	36,877	9.7	55.3	3058
02/04/13	4,132	10,842	22,026	14,974	25,987	37,000	15.3	49.7	2470
02/05/13	3,975	10,252	21,237	14,227	24,846	35,464	15.3	49.7	2470
02/06/13	3,744	9,627	19,844	13,371	23,293	33,215	21.1	43.9	1927
02/07/13	3,600	9,249	19,335	12,849	22,517	32,184	22.0	43.0	1849
02/08/13	3,378	8,351	17,914	11,729	20,686	29,643	21.3	43.7	1910
02/09/13	3,006	7,636	15,358	10,642	18,321	26,000	26.0	39.0	1521
02/10/13	3,091	8,131	16,065	11,222	19,255	27,287	30.8	34.2	1170
02/11/13	3,782	9,725	19,902	13,507	23,458	33,409	21.8	43.2	1866
02/12/13	3,318	8,577	18,343	11,895	21,067	30,238	26.5	38.5	1482
02/13/13	2,946	7,760	16,610	10,706	19,011	27,316	32.5	32.5	1056
02/14/13	3,812	9,570	19,932	13,382	23,348	33,314	19.2	45.8	2098
02/15/13	4,209	10,638	21,654	14,847	25,674	36,501	9.9	55.1	3036
02/16/13	3,845	9,819	19,134	13,664	23,231	32,798	12.5	52.5	2756
02/17/13	3,210	8,413	16,572	11,623	19,909	28,195	27.9	37.1	1376
02/18/13	4,280	10,955	22,595	15,235	26,533	37,830	14.9	50.1	2510
02/19/13	5,123	13,056	26,417	18,179	31,388	44,596	2.8	62.2	3869
02/20/13	4,435	11,665	23,662	16,100	27,931	39,762	12.0	53.0	2809
02/21/13	3,827	10,122	20,736	13,949	24,317	34,685	20.6	44.4	1971
02/22/13	3,287	8,710	18,304	11,997	21,149	30,301	24.0	41.0	1681
02/23/13	3,107	8,250	16,726	11,357	19,720	28,083	21.6	43.4	1884
02/24/13	2,824	7,823	15,861	10,647	18,578	26,508	28.3	36.7	1347
02/25/13	3,060	8,273	18,177	11,333	20,422	29,510	27.5	37.5	1406
02/26/13	2,958	8,007	17,289	10,965	19,610	28,254	32.3	32.7	1069
02/27/13	2,866	7,789	16,824	10,655	19,067	27,479	32.2	32.8	1076
02/28/13	3,292	8,633	18,215	11,925	21,033	30,140	26.9	38.1	1452
03/01/13	3,357	8,629	18,298	11,986	21,135	30,284	22.0	43.0	1849
03/02/13	2,984	7,736	15,806	10,720	18,623	26,526	23.6	41.4	1714
03/03/13	2,969	8,048	15,937	11,017	18,986	26,954	28.2	36.8	1354
03/04/13	3,365	9,162	19,112	12,527	22,083	31,639	25.5	39.5	1560
03/05/13	3,288	9,113	18,969	12,401	21,886	31,370	25.4	39.6	1568
03/06/13	3,491	9,548	19,682	13,039	22,880	32,721	20.0	45.0	2025
03/07/13	3,266	8,724	18,090	11,990	21,035	30,080	24.7	40.3	1624
03/08/13	2,644	6,776	14,663	9,420	16,752	24,083	35.0	30.0	900
03/09/13	2,404	6,269	12,868	8,673	15,107	21,541	36.1	28.9	835
03/10/13	2,960	7,886	15,612	10,846	18,652	26,458	31.7	33.3	1109

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
03/11/13	3,377	8,904	18,708	12,281	21,635	30,989	26.6	38.4	1475
03/12/13	3,572	9,263	19,690	12,835	22,680	32,525	23.2	41.8	1747
03/13/13	3,253	8,433	18,194	11,686	20,783	29,880	26.8	38.2	1459
03/14/13	2,739	7,082	15,846	9,821	17,744	25,667	33.8	31.2	973
03/15/13	3,072	7,692	16,746	10,764	19,137	27,510	28.1	36.9	1362
03/16/13	3,383	8,439	17,376	11,822	20,510	29,198	18.0	47.0	2209
03/17/13	3,214	8,405	16,803	11,619	20,021	28,422	25.8	39.2	1537
03/18/13	4,051	10,704	22,366	14,755	25,938	37,121	15.3	49.7	2470
03/19/13	4,001	10,976	22,729	14,977	26,342	37,706	13.4	51.6	2663
03/20/13	3,985	10,822	22,583	14,807	26,099	37,390	14.0	51.0	2601
03/21/13	3,595	9,547	19,963	13,142	23,124	33,105	21.0	44.0	1936
03/22/13	3,057	7,608	16,499	10,665	18,915	27,164	27.9	37.1	1376
03/23/13	2,563	6,713	13,862	9,276	16,207	23,138	32.1	32.9	1082
03/24/13	2,856	7,792	15,684	10,648	18,490	26,332	29.6	35.4	1253
03/25/13	2,670	7,662	16,852	10,332	18,758	27,184	32.2	32.8	1076
03/26/13	2,599	7,395	16,587	9,994	18,288	26,581	31.6	33.4	1116
03/27/13	2,478	6,860	15,529	9,338	17,103	24,867	34.3	30.7	942
03/28/13	2,221	6,016	13,969	8,237	15,222	22,206	37.1	27.9	778
03/29/13	1,811	4,960	11,535	6,771	12,539	18,306	42.8	22.2	493
03/30/13	1,784	4,845	10,354	6,629	11,806	16,983	42.6	22.4	502
03/31/13	2,595	7,037	14,392	9,632	16,828	24,024	29.8	35.2	1239
11/01/13	1,874	4,745	11,053	6,619	12,146	17,672	42.3	22.7	515
11/02/13	1,807	4,751	10,439	6,558	11,778	16,997	42.3	22.7	515
11/03/13	1,566	4,394	9,458	5,960	10,689	15,418	49.2	15.8	250
11/04/13	2,101	5,598	12,972	7,699	14,185	20,671	39.9	25.1	630
11/05/13	2,411	6,245	14,322	8,656	15,817	22,978	36.6	28.4	807
11/06/13	2,603	6,747	14,796	9,350	16,748	24,146	32.9	32.1	1030
11/07/13	2,752	7,126	15,798	9,878	17,777	25,676	29.7	35.3	1246
11/08/13	2,232	5,462	12,525	7,694	13,957	20,219	42.8	22.2	493
11/09/13	2,182	5,380	11,763	7,562	13,444	19,325	38.6	26.4	697
11/10/13	2,351	6,041	12,838	8,392	14,811	21,230	35.8	29.2	853
11/11/13	3,504	9,130	19,421	12,634	22,345	32,055	19.0	46.0	2116
11/12/13	3,260	8,612	17,924	11,872	20,834	29,796	24.8	40.2	1616
11/13/13	2,290	6,182	13,794	8,472	15,369	22,266	42.1	22.9	524
11/14/13	2,175	6,291	13,352	8,466	15,142	21,818	40.3	24.7	610
11/15/13	1,770	4,735	10,854	6,505	11,932	17,359	47.0	18.0	324
11/16/13	1,767	4,597	9,969	6,364	11,349	16,333	45.3	19.7	388
11/17/13	2,368	6,356	13,141	8,724	15,295	21,865	36.0	29.0	841
11/18/13	3,000	7,711	16,865	10,711	19,144	27,576	28.9	36.1	1303
11/19/13	2,303	6,147	13,800	8,450	15,350	22,250	43.2	21.8	475
11/20/13	2,259	6,278	13,911	8,537	15,493	22,448	38.8	26.2	686
11/21/13	3,178	8,347	18,043	11,525	20,547	29,568	25.3	39.7	1576
11/22/13	3,578	8,641	18,894	12,219	21,666	31,113	19.3	45.7	2088
11/23/13	3,803	9,421	19,431	13,224	22,940	32,655	12.7	52.3	2735
11/24/13	3,179	8,453	16,708	11,632	19,986	28,340	28.3	36.7	1347
11/25/13	3,060	8,117	16,793	11,177	19,574	27,970	31.8	33.2	1102
11/26/13	4,070	10,244	21,160	14,314	24,894	35,474	16.5	48.5	2352
11/27/13	3,480	8,741	17,960	12,221	21,201	30,181	22.4	42.6	1815
11/28/13	3,240	8,239	16,363	11,479	19,661	27,842	20.2	44.8	2007
11/29/13	2,974	7,627	15,701	10,601	18,452	26,302	28.4	36.6	1340
11/30/13	2,673	6,735	13,546	9,408	16,181	22,954	31.7	33.3	1109
12/01/13	2,788	7,440	15,294	10,228	17,875	25,522	30.5	34.5	1190
12/02/13	2,788	7,401	16,225	10,189	18,302	26,414	35.1	29.9	894
12/03/13	2,795	7,729	16,521	10,524	18,785	27,045	32.9	32.1	1030
12/04/13	3,671	9,649	20,041	13,320	23,341	33,361	19.6	45.4	2061
12/05/13	4,892	12,620	25,142	17,512	30,083	42,654	2.0	63.0	3969
12/06/13	5,127	12,902	26,001	18,029	31,030	44,030	(3.7)	68.7	4720
12/07/13	4,771	12,262	24,023	17,033	29,045	41,056	(0.4)	65.4	4277
12/08/13	4,486	11,706	22,662	16,192	27,523	38,854	8.3	56.7	3215
12/09/13	5,119	13,283	26,738	18,402	31,771	45,140	1.8	63.2	3994
12/10/13	5,017	13,078	26,499	18,095	31,345	44,594	3.2	61.8	3819
12/11/13	5,164	13,610	27,436	18,774	32,492	46,210	1.3	63.7	4058
12/12/13	4,156	11,056	22,774	15,212	26,599	37,986	16.3	48.7	2372
12/13/13	4,222	11,023	22,563	15,245	26,527	37,808	12.8	52.2	2725
12/14/13	4,317	11,026	22,277	15,343	26,482	37,620	5.8	59.2	3505

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
12/15/13	4,651	12,212	24,171	16,863	28,949	41,034	2.4	62.6	3919
12/16/13	4,009	10,893	22,465	14,902	26,135	37,367	20.2	44.8	2007
12/17/13	3,967	10,528	21,820	14,495	25,405	36,315	17.4	47.6	2266
12/18/13	3,382	9,103	19,103	12,485	22,037	31,588	27.1	37.9	1436
12/19/13	4,064	10,793	21,704	14,857	25,709	36,561	17.3	47.7	2275
12/20/13	3,790	9,709	20,290	13,499	23,644	33,789	18.4	46.6	2172
12/21/13	3,604	9,120	18,307	12,724	21,878	31,031	19.0	46.0	2116
12/22/13	4,263	10,863	21,489	15,126	25,871	36,615	9.0	56.0	3136
12/23/13	5,177	13,119	25,966	18,296	31,279	44,262	(4.4)	69.4	4816
12/24/13	4,165	11,086	20,709	15,251	25,606	35,960	9.3	55.7	3102
12/25/13	3,601	9,583	18,401	13,184	22,385	31,585	16.8	48.2	2323
12/26/13	3,664	9,456	19,542	13,120	22,891	32,662	21.7	43.3	1875
12/27/13	3,020	7,750	15,990	10,770	18,765	26,760	31.3	33.7	1136
12/28/13	3,217	8,202	16,405	11,419	19,622	27,824	24.5	40.5	1640
12/29/13	5,029	12,905	24,868	17,934	30,368	42,802	(7.0)	72.0	5184
12/30/13	5,166	13,186	26,327	18,352	31,516	44,679	(2.7)	67.7	4583
12/31/13	5,059	13,123	25,672	18,182	31,018	43,854	(5.0)	70.0	4900
01/01/14	4,996	13,094	25,392	18,090	30,786	43,482	(1.9)	66.9	4476
01/02/14	5,280	14,013	27,800	19,293	33,193	47,093	(2.7)	67.7	4583
01/03/14	4,116	10,625	21,509	14,741	25,496	36,250	22.5	42.5	1806
01/04/14	4,598	11,667	22,909	16,265	27,720	39,174	2.8	62.2	3869
01/05/14	5,651	14,703	27,729	20,354	34,219	48,083	(14.5)	79.5	6320
01/06/14	6,013	15,700	29,923	21,713	36,675	51,636	(13.8)	78.8	6209
01/07/14	5,506	13,896	27,991	19,402	33,398	47,393	(2.6)	67.6	4570
01/08/14	5,389	13,952	27,903	19,341	33,293	47,244	(1.4)	66.4	4409
01/09/14	4,334	11,265	22,837	15,599	27,018	38,436	17.4	47.6	2266
01/10/14	3,332	8,753	18,312	12,085	21,241	30,397	28.3	36.7	1347
01/11/14	3,074	8,259	16,763	11,333	19,715	28,096	27.3	37.7	1421
01/12/14	2,732	7,704	15,704	10,436	18,288	26,140	34.8	30.2	912
01/13/14	3,284	8,657	18,857	11,941	21,370	30,798	26.9	38.1	1452
01/14/14	4,263	11,124	23,077	15,387	26,926	38,464	10.8	54.2	2938
01/15/14	3,859	10,430	21,769	14,289	25,174	36,058	21.8	43.2	1866
01/16/14	4,651	12,078	24,888	16,729	29,173	41,617	9.0	56.0	3136
01/17/14	4,321	10,958	22,951	15,279	26,755	38,230	9.9	55.1	3036
01/18/14	3,494	9,025	18,375	12,519	21,707	30,894	20.3	44.7	1998
01/19/14	2,942	8,000	16,400	10,942	19,142	27,342	31.6	33.4	1116
01/20/14	4,940	12,708	26,547	17,648	30,922	44,195	0.9	64.1	4109
01/21/14	5,153	13,434	27,008	18,587	32,091	45,595	1.5	63.5	4032
01/22/14	5,591	13,998	29,105	19,589	34,142	48,694	(5.8)	70.8	5013
01/23/14	5,356	13,451	28,130	18,807	32,872	46,937	1.7	63.3	4007
01/24/14	3,887	10,089	21,021	13,976	24,487	34,997	21.9	43.1	1858
01/25/14	4,369	11,185	22,575	15,554	26,842	38,129	6.3	58.7	3446
01/26/14	5,143	13,106	25,490	18,249	30,994	43,739	(1.8)	66.8	4462
01/27/14	5,770	15,059	28,794	20,829	35,226	49,623	(11.3)	76.3	5822
01/28/14	5,508	14,602	27,792	20,110	34,006	47,902	(3.5)	68.5	4692
01/29/14	3,978	10,577	21,939	14,555	25,525	36,494	23.8	41.2	1697
01/30/14	4,796	12,302	25,449	17,098	29,823	42,547	3.2	61.8	3819
01/31/14	4,603	11,769	24,679	16,372	28,712	41,051	4.3	60.7	3684
02/01/14	4,292	11,075	22,489	15,367	26,612	37,856	6.2	58.8	3457
02/02/14	4,422	11,760	23,217	16,182	27,791	39,399	4.6	60.4	3648
02/03/14	4,527	12,134	24,619	16,661	28,971	41,280	7.8	57.2	3272
02/04/14	4,883	12,971	26,316	17,854	31,012	44,170	3.5	61.5	3782
02/05/14	5,269	14,064	28,243	19,333	33,455	47,576	(2.6)	67.6	4570
02/06/14	5,335	13,852	27,734	19,187	33,054	46,921	(0.8)	65.8	4330
02/07/14	4,783	12,267	24,974	17,050	29,537	42,024	5.0	60.0	3600
02/08/14	4,307	11,154	22,330	15,461	26,626	37,791	7.4	57.6	3318
02/09/14	5,022	13,089	25,249	18,111	30,736	43,360	(2.7)	67.7	4583
02/10/14	5,276	13,937	27,191	19,213	32,809	46,404	(2.0)	67.0	4489
02/11/14	4,550	12,137	24,327	16,687	28,851	41,014	11.3	53.7	2884
02/12/14	3,841	10,345	21,307	14,186	24,840	35,493	20.4	44.6	1989
02/13/14	4,463	11,839	23,857	16,302	28,231	40,159	10.6	54.4	2959
02/14/14	4,505	11,586	23,673	16,091	27,928	39,764	7.5	57.5	3306
02/15/14	3,920	10,411	20,482	14,331	24,572	34,813	14.8	50.2	2520
02/16/14	3,733	10,151	19,829	13,884	23,799	33,713	19.0	46.0	2116
02/17/14	3,483	9,683	20,054	13,166	23,193	33,220	22.9	42.1	1772

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
02/18/14	2,916	8,533	17,507	11,449	20,203	28,956	31.5	33.5	1122
02/19/14	2,771	7,915	16,613	10,686	18,993	27,299	34.4	30.6	936
02/20/14	3,432	9,493	19,050	12,925	22,450	31,975	21.8	43.2	1866
02/21/14	4,047	10,840	21,827	14,887	25,801	36,714	11.0	54.0	2916
02/22/14	3,955	10,586	20,880	14,541	24,981	35,421	8.6	56.4	3181
02/23/14	4,190	11,363	22,060	15,553	26,583	37,613	8.3	56.7	3215
02/24/14	4,713	12,642	25,069	17,355	29,890	42,424	5.0	60.0	3600
02/25/14	5,178	13,827	27,381	19,005	32,696	46,386	(2.4)	67.4	4543
02/26/14	5,049	13,688	27,129	18,737	32,302	45,866	(3.2)	68.2	4651
02/27/14	5,384	14,052	27,996	19,436	33,434	47,432	(5.0)	70.0	4900
02/28/14	4,809	12,390	24,535	17,199	29,467	41,734	6.5	58.5	3422
03/01/14	5,079	13,015	26,245	18,094	31,217	44,339	(6.3)	71.3	5084
03/02/14	4,975	13,130	26,362	18,105	31,286	44,467	(3.8)	68.8	4733
03/03/14	4,744	12,752	25,872	17,496	30,432	43,368	6.7	58.3	3399
03/04/14	4,089	11,113	23,458	15,202	26,931	38,660	16.0	49.0	2401
03/05/14	3,866	10,310	22,113	14,176	25,233	36,289	18.0	47.0	2209
03/06/14	3,590	9,141	19,871	12,731	22,667	32,602	24.3	40.7	1656
03/07/14	3,354	8,824	17,880	12,178	21,118	30,058	25.2	39.8	1584
03/08/14	3,019	8,166	16,069	11,185	19,220	27,254	22.9	42.1	1772
03/09/14	2,425	6,956	14,180	9,381	16,471	23,561	38.0	27.0	729
03/10/14	2,127	6,004	13,645	8,131	14,954	21,776	44.0	21.0	441
03/11/14	2,804	7,629	16,799	10,433	18,833	27,232	32.3	32.7	1069
03/12/14	3,145	8,498	18,639	11,643	20,963	30,282	24.8	40.2	1616
03/13/14	2,198	6,083	13,851	8,281	15,207	22,132	42.7	22.3	497
03/14/14	2,712	7,105	15,771	9,817	17,703	25,588	31.3	33.7	1136
03/15/14	3,051	7,951	16,604	11,002	19,304	27,606	22.5	42.5	1806
03/16/14	3,157	8,448	17,422	11,605	20,316	29,027	22.6	42.4	1798
03/17/14	2,975	7,906	17,186	10,881	19,474	28,067	31.5	33.5	1122
03/18/14	2,938	7,857	17,609	10,795	19,600	28,404	30.7	34.3	1176
03/19/14	2,938	7,952	17,688	10,890	19,734	28,578	29.8	35.2	1239
03/20/14	2,466	6,631	15,179	9,097	16,687	24,276	35.7	29.3	858
03/21/14	3,032	7,758	17,105	10,790	19,343	27,895	27.0	38.0	1444
03/22/14	3,521	9,166	18,898	12,687	22,136	31,585	15.1	49.9	2490
03/23/14	3,289	9,043	18,230	12,332	21,447	30,562	21.0	44.0	1936
03/24/14	3,373	9,486	20,324	12,859	23,021	33,183	21.6	43.4	1884
03/25/14	3,573	9,990	21,342	13,563	24,234	34,905	18.6	46.4	2153
03/26/14	2,787	7,400	16,252	10,187	18,313	26,439	36.9	28.1	790
03/27/14	2,865	7,588	16,522	10,453	18,714	26,975	32.6	32.4	1050
03/28/14	2,756	7,363	15,912	10,119	18,075	26,031	30.5	34.5	1190
03/29/14	2,200	5,898	12,311	8,098	14,254	20,409	38.4	26.6	708
03/30/14	1,605	4,620	10,269	6,225	11,360	16,494	50.6	14.4	207
03/31/14	2,308	6,078	13,928	8,386	15,350	22,314	39.3	25.7	660
11/01/14	2,031	5,164	11,709	7,195	13,050	18,904	36.5	28.5	812
11/02/14	1,583	4,181	9,461	5,764	10,495	15,225	47.9	17.1	292
11/03/14	1,799	4,417	10,854	6,216	11,643	17,070	47.7	17.3	299
11/04/14	1,998	4,970	12,279	6,968	13,108	19,247	41.9	23.1	534
11/05/14	2,208	5,532	13,357	7,740	14,419	21,097	36.8	28.2	795
11/06/14	2,422	5,878	13,895	8,300	15,248	22,195	35.8	29.2	853
11/07/14	2,190	5,175	12,410	7,365	13,570	19,775	40.5	24.5	600
11/08/14	2,095	4,838	11,282	6,933	12,574	18,215	38.5	26.5	702
11/09/14	2,494	6,184	13,421	8,678	15,389	22,099	32.0	33.0	1089
11/10/14	3,266	8,741	17,628	12,007	20,821	29,635	26.0	39.0	1521
11/11/14	3,472	9,157	19,318	12,629	22,288	31,947	20.3	44.7	1998
11/12/14	3,581	9,193	19,579	12,774	22,564	32,353	21.0	44.0	1936
11/13/14	3,773	9,634	20,547	13,407	23,681	33,954	17.2	47.8	2285
11/14/14	3,905	9,504	20,200	13,409	23,509	33,609	13.3	51.7	2673
11/15/14	3,522	8,513	17,527	12,035	20,799	29,562	18.0	47.0	2209
11/16/14	3,974	10,077	20,448	14,051	24,275	34,499	10.8	54.2	2938
11/17/14	4,509	11,418	23,399	15,927	27,627	39,326	10.5	54.5	2970
11/18/14	4,188	10,503	21,796	14,691	25,589	36,487	16.5	48.5	2352
11/19/14	4,111	10,375	21,468	14,486	25,220	35,954	17.6	47.4	2247
11/20/14	4,420	11,048	22,516	15,468	26,726	37,984	10.6	54.4	2959
11/21/14	3,332	8,224	17,051	11,556	20,082	28,607	30.3	34.7	1204
11/22/14	2,389	5,897	12,456	8,286	14,514	20,742	40.0	25.0	625
11/23/14	2,567	6,674	13,975	9,241	16,229	23,216	35.6	29.4	864

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
11/24/14	4,214	10,472	21,236	14,686	25,304	35,922	15.9	49.1	2411
11/25/14	3,762	9,558	19,741	13,320	23,191	33,061	22.3	42.7	1823
11/26/14	3,848	9,651	20,190	13,499	23,594	33,689	14.1	50.9	2591
11/27/14	4,035	9,910	19,701	13,945	23,796	33,646	7.9	57.1	3260
11/28/14	3,482	8,733	17,600	12,215	21,015	29,815	21.9	43.1	1858
11/29/14	3,052	7,647	15,534	10,699	18,466	26,233	24.8	40.2	1616
11/30/14	4,381	11,254	21,894	15,635	26,582	37,529	6.8	58.2	3387
12/01/14	4,834	12,426	24,739	17,260	29,630	41,999	6.0	59.0	3481
12/02/14	4,145	10,844	21,988	14,989	25,983	36,977	17.8	47.2	2228
12/03/14	4,048	10,273	21,211	14,321	24,927	35,532	17.8	47.2	2228
12/04/14	3,315	8,670	18,144	11,985	21,057	30,129	29.0	36.0	1296
12/05/14	3,158	8,040	17,175	11,198	19,786	28,373	26.8	38.2	1459
12/06/14	3,020	7,602	15,680	10,622	18,462	26,302	26.3	38.7	1498
12/07/14	2,823	7,429	15,234	10,252	17,869	25,486	33.6	31.4	986
12/08/14	3,650	9,298	19,344	12,948	22,620	32,292	23.2	41.8	1747
12/09/14	3,753	9,514	19,871	13,267	23,203	33,138	21.3	43.7	1910
12/10/14	3,354	8,679	18,344	12,033	21,205	30,377	26.9	38.1	1452
12/11/14	3,063	7,951	16,939	11,014	19,484	27,953	31.1	33.9	1149
12/12/14	2,579	6,728	14,304	9,307	16,459	23,611	35.9	29.1	847
12/13/14	1,832	4,714	10,321	6,546	11,707	16,867	45.8	19.2	369
12/14/14	1,783	4,698	10,413	6,481	11,688	16,894	48.3	16.7	279
12/15/14	2,709	7,174	15,639	9,883	17,703	25,522	33.9	31.1	967
12/16/14	3,893	10,267	20,889	14,160	24,605	35,049	16.4	48.6	2362
12/17/14	4,001	10,570	21,275	14,571	25,209	35,846	15.5	49.5	2450
12/18/14	3,705	9,739	19,831	13,444	23,360	33,275	20.5	44.5	1980
12/19/14	3,178	8,096	16,992	11,274	19,770	28,266	28.4	36.6	1340
12/20/14	2,802	7,120	14,685	9,922	17,265	24,607	31.6	33.4	1116
12/21/14	2,567	7,030	14,181	9,597	16,688	23,778	36.5	28.5	812
12/22/14	2,750	7,433	15,577	10,183	17,972	25,760	35.3	29.7	882
12/23/14	2,716	7,265	15,041	9,981	17,502	25,022	34.9	30.1	906
12/24/14	2,491	6,640	13,178	9,131	15,720	22,309	32.5	32.5	1056
12/25/14	2,503	6,518	12,820	9,021	15,431	21,841	32.7	32.3	1043
12/26/14	2,972	7,486	15,637	10,458	18,277	26,095	28.3	36.7	1347
12/27/14	3,569	8,740	17,989	12,309	21,304	30,298	15.2	49.8	2480
12/28/14	3,967	10,080	20,048	14,047	24,071	34,095	12.7	52.3	2735
12/29/14	4,917	12,743	25,260	17,660	30,290	42,920	0.7	64.3	4134
12/30/14	5,301	13,557	26,592	18,858	32,154	45,450	(2.4)	67.4	4543
12/31/14	4,526	11,405	22,071	15,931	26,967	38,002	11.7	53.3	2841
01/01/15	3,811	9,624	18,603	13,435	22,737	32,038	18.6	46.4	2153
01/02/15	3,602	8,884	18,412	12,486	21,692	30,898	24.1	40.9	1673
01/03/15	3,847	9,545	19,200	13,392	22,992	32,592	15.6	49.4	2440
01/04/15	5,353	13,651	26,338	19,004	32,173	45,342	(5.9)	70.9	5027
01/05/15	5,596	14,342	28,775	19,938	34,326	48,713	(2.8)	67.8	4597
01/06/15	5,495	14,358	28,380	19,853	34,043	48,233	(0.4)	65.4	4277
01/07/15	5,589	14,646	28,848	20,235	34,659	49,083	(2.4)	67.4	4543
01/08/15	5,199	13,718	26,916	18,917	32,375	45,833	5.1	59.9	3588
01/09/15	5,142	13,259	26,432	18,401	31,617	44,833	0.7	64.3	4134
01/10/15	4,399	11,265	22,086	15,664	26,707	37,750	9.8	55.2	3047
01/11/15	4,623	11,888	23,038	16,511	28,030	39,549	6.7	58.3	3399
01/12/15	5,338	14,185	28,059	19,523	33,553	47,582	(2.5)	67.5	4556
01/13/15	4,600	12,174	24,210	16,774	28,879	40,984	13.4	51.6	2663
01/14/15	3,673	10,101	20,485	13,774	24,017	34,259	22.5	42.5	1806
01/15/15	3,290	8,766	17,867	12,056	20,990	29,923	29.2	35.8	1282
01/16/15	3,239	8,393	16,951	11,632	20,108	28,583	28.1	36.9	1362
01/17/15	2,750	7,353	14,517	10,103	17,362	24,620	32.9	32.1	1030
01/18/15	2,854	7,677	15,264	10,531	18,163	25,795	30.5	34.5	1190
01/19/15	2,991	7,897	16,275	10,888	19,026	27,163	32.4	32.6	1063
01/20/15	3,157	8,355	17,836	11,512	20,430	29,348	29.0	36.0	1296
01/21/15	3,326	8,834	18,670	12,160	21,495	30,830	26.6	38.4	1475
01/22/15	3,442	8,986	19,003	12,428	21,930	31,431	26.7	38.3	1467
01/23/15	2,809	7,235	15,703	10,044	17,896	25,747	32.6	32.4	1050
01/24/15	2,606	6,484	13,811	9,090	15,996	22,901	33.5	31.5	992
01/25/15	3,228	8,214	16,984	11,442	19,934	28,426	24.6	40.4	1632
01/26/15	2,658	7,059	15,407	9,717	17,421	25,124	37.1	27.9	778
01/27/15	3,021	7,807	16,935	10,828	19,296	27,763	30.9	34.1	1163

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
01/28/15	3,062	8,225	17,423	11,287	19,999	28,710	30.6	34.4	1183
01/29/15	3,810	9,892	20,526	13,702	23,965	34,228	19.9	45.1	2034
01/30/15	3,443	8,785	18,558	12,228	21,507	30,786	23.0	42.0	1764
01/31/15	3,490	8,590	17,449	12,080	20,805	29,529	22.4	42.6	1815
02/01/15	4,424	11,395	22,526	15,819	27,082	38,345	8.6	56.4	3181
02/02/15	4,531	12,052	24,380	16,583	28,773	40,963	9.5	55.5	3080
02/03/15	4,296	11,460	23,288	15,756	27,400	39,044	13.5	51.5	2652
02/04/15	4,822	12,836	25,734	17,658	30,525	43,392	3.7	61.3	3758
02/05/15	4,326	11,469	23,062	15,795	27,326	38,857	14.8	50.2	2520
02/06/15	3,467	8,977	18,192	12,444	21,540	30,636	23.8	41.2	1697
02/07/15	2,874	7,339	14,720	10,213	17,573	24,933	30.8	34.2	1170
02/08/15	3,312	8,769	17,194	12,081	20,678	29,275	25.2	39.8	1584
02/09/15	3,273	8,806	18,491	12,079	21,325	30,570	25.6	39.4	1552
02/10/15	3,583	9,656	19,606	13,239	23,042	32,845	24.5	40.5	1640
02/11/15	4,637	12,454	24,759	17,091	29,471	41,850	6.5	58.5	3422
02/12/15	4,606	12,343	24,418	16,949	29,158	41,367	8.4	56.6	3204
02/13/15	4,100	10,719	21,444	14,819	25,541	36,263	14.8	50.2	2520
02/14/15	4,741	12,172	23,623	16,913	28,725	40,536	1.3	63.7	4058
02/15/15	4,638	12,094	23,196	16,732	28,330	39,928	7.5	57.5	3306
02/16/15	4,595	12,094	24,309	16,689	28,844	40,998	11.0	54.0	2916
02/17/15	5,213	13,898	27,215	19,111	32,719	46,326	0.8	64.2	4122
02/18/15	5,630	14,948	29,484	20,578	35,320	50,062	(4.5)	69.5	4830
02/19/15	4,906	12,996	25,868	17,902	30,836	43,770	5.5	59.5	3540
02/20/15	3,883	10,136	20,212	14,019	24,125	34,231	20.8	44.2	1954
02/21/15	4,372	11,258	22,300	15,630	26,780	37,930	5.8	59.2	3505
02/22/15	5,418	13,851	26,733	19,269	32,636	46,002	(6.0)	71.0	5041
02/23/15	4,216	11,443	22,858	15,659	27,088	38,517	20.0	45.0	2025
02/24/15	3,969	10,852	21,736	14,821	25,689	36,557	18.7	46.3	2144
02/25/15	4,652	12,731	25,099	17,383	29,933	42,482	7.1	57.9	3352
02/26/15	4,913	13,269	26,508	18,182	31,436	44,690	2.8	62.2	3869
02/27/15	4,508	11,835	23,649	16,343	28,168	39,992	6.7	58.3	3399
02/28/15	3,970	10,186	19,804	14,156	24,058	33,960	15.5	49.5	2450
03/01/15	3,728	10,118	19,337	13,846	23,515	33,183	19.5	45.5	2070
03/02/15	3,599	9,745	20,094	13,344	23,391	33,438	22.1	42.9	1840
03/03/15	4,065	11,434	22,873	15,499	26,936	38,372	12.7	52.3	2735
03/04/15	4,900	13,307	26,209	18,207	31,312	44,416	1.8	63.2	3994
03/05/15	4,353	11,830	23,666	16,183	28,016	39,849	10.7	54.3	2948
03/06/15	3,029	8,012	16,746	11,041	19,414	27,787	31.8	33.2	1102
03/07/15	2,444	6,303	13,136	8,747	15,315	21,883	35.9	29.1	847
03/08/15	2,340	6,233	13,327	8,573	15,237	21,900	39.5	25.5	650
03/09/15	2,039	5,656	13,128	7,695	14,259	20,823	46.8	18.2	331
03/10/15	1,895	5,161	11,903	7,056	13,008	18,959	46.4	18.6	346
03/11/15	1,841	4,928	11,454	6,769	12,496	18,223	46.0	19.0	361
03/12/15	1,624	4,373	10,385	5,997	11,190	16,382	53.5	11.5	132
03/13/15	1,773	4,345	10,409	6,118	11,323	16,527	46.7	18.3	335
03/14/15	1,480	3,698	8,583	5,178	9,470	13,761	50.3	14.7	216
03/15/15	1,256	3,303	7,773	4,559	8,446	12,332	58.2	6.8	46
03/16/15	1,978	5,277	12,327	7,255	13,419	19,582	42.7	22.3	497
03/17/15	2,382	6,074	14,130	8,456	15,521	22,586	37.0	28.0	784
03/18/15	2,284	5,730	13,768	8,014	14,898	21,782	40.0	25.0	625
03/19/15	2,192	5,541	13,032	7,733	14,249	20,765	42.3	22.7	515
03/20/15	2,063	4,980	11,793	7,043	12,940	18,836	41.1	23.9	571
03/21/15	2,397	5,565	12,243	7,962	14,084	20,205	33.2	31.8	1011
03/22/15	2,552	6,839	14,007	9,391	16,395	23,398	31.0	34.0	1156
03/23/15	2,681	7,436	16,316	10,117	18,275	26,433	28.5	36.5	1332
03/24/15	2,537	7,242	16,007	9,779	17,783	25,786	33.0	32.0	1024
03/25/15	2,739	7,586	16,361	10,325	18,506	26,686	33.5	31.5	992
03/26/15	2,955	7,984	17,349	10,939	19,614	28,288	28.1	36.9	1362
03/27/15	2,701	6,927	15,758	9,628	17,507	25,386	27.8	37.2	1384
03/28/15	2,231	5,426	11,874	7,657	13,594	19,531	36.7	28.3	801
03/29/15	2,059	5,289	11,276	7,348	12,986	18,624	44.0	21.0	441
03/30/15	1,883	5,253	12,123	7,136	13,198	19,259	44.5	20.5	420
03/31/15	1,486	4,092	9,991	5,578	10,574	15,569	54.0	11.0	121
11/01/15	1,457	3,412	7,882	4,869	8,810	12,751	50.7	14.3	204
11/02/15	1,366	3,272	8,717	4,638	8,997	13,355	56.5	8.5	72

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
11/03/15	1,228	2,999	8,053	4,227	8,254	12,280	57.6	7.4	55
11/04/15	1,275	2,941	7,865	4,216	8,149	12,081	60.4	4.6	21
11/05/15	1,663	3,870	9,948	5,533	10,507	15,481	48.6	16.4	269
11/06/15	1,972	4,228	10,837	6,200	11,619	17,037	40.7	24.3	590
11/07/15	1,722	3,733	9,166	5,455	10,038	14,621	44.8	20.2	408
11/08/15	1,537	3,679	8,779	5,216	9,606	13,995	51.0	14.0	196
11/09/15	1,638	3,937	9,988	5,575	10,569	15,563	49.3	15.7	246
11/10/15	1,605	3,845	9,793	5,450	10,347	15,243	50.5	14.5	210
11/11/15	1,858	4,468	11,175	6,326	11,914	17,501	46.1	18.9	357
11/12/15	2,456	5,629	13,809	8,085	14,990	21,894	37.4	27.6	762
11/13/15	2,328	5,107	12,279	7,435	13,575	19,714	37.6	27.4	751
11/14/15	1,663	3,724	8,337	5,387	9,556	13,724	47.4	17.6	310
11/15/15	1,396	3,561	7,744	4,957	8,829	12,701	53.7	11.3	128
11/16/15	1,757	4,371	10,910	6,128	11,583	17,038	48.8	16.2	262
11/17/15	1,532	4,073	9,771	5,605	10,491	15,376	53.7	11.3	128
11/18/15	2,249	5,416	12,600	7,665	13,965	20,265	40.3	24.7	610
11/19/15	3,129	7,421	16,836	10,550	18,968	27,386	30.3	34.7	1204
11/20/15	3,377	7,603	17,167	10,980	19,564	28,147	24.5	40.5	1640
11/21/15	3,213	7,269	15,932	10,482	18,448	26,414	22.3	42.7	1823
11/22/15	2,965	7,119	14,884	10,084	17,526	24,968	28.6	36.4	1325
11/23/15	2,679	6,565	14,693	9,244	16,591	23,937	35.5	29.5	870
11/24/15	2,499	6,242	13,522	8,741	15,502	22,263	39.3	25.7	660
11/25/15	2,219	5,205	11,248	7,424	13,048	18,672	41.6	23.4	548
11/26/15	3,086	6,869	13,668	9,955	16,789	23,623	25.6	39.4	1552
11/27/15	3,435	7,631	16,332	11,066	19,232	27,398	20.1	44.9	2016
11/28/15	3,069	7,073	14,919	10,142	17,602	25,061	24.0	41.0	1681
11/29/15	2,845	6,887	14,267	9,732	16,866	23,999	30.7	34.3	1176
11/30/15	2,979	7,376	16,077	10,355	18,394	26,432	33.0	32.0	1024
12/01/15	3,084	7,600	16,716	10,684	19,042	27,400	29.5	35.5	1260
12/02/15	3,053	7,487	16,481	10,540	18,781	27,021	30.4	34.6	1197
12/03/15	3,230	7,757	17,065	10,987	19,520	28,052	28.2	36.8	1354
12/04/15	2,533	5,900	13,254	8,433	15,060	21,687	39.1	25.9	671
12/05/15	2,218	5,133	11,245	7,351	12,974	18,596	41.1	23.9	571
12/06/15	2,719	6,496	13,780	9,215	16,105	22,995	33.8	31.2	973
12/07/15	2,680	6,441	15,232	9,121	16,737	24,353	37.3	27.7	767
12/08/15	2,683	6,585	14,878	9,268	16,707	24,146	36.8	28.2	795
12/09/15	2,348	5,861	13,129	8,209	14,774	21,338	42.7	22.3	497
12/10/15	2,365	6,015	13,483	8,380	15,122	21,863	41.0	24.0	576
12/11/15	2,495	6,001	13,101	8,496	15,047	21,597	36.8	28.2	795
12/12/15	2,219	5,370	10,793	7,589	12,986	18,382	39.6	25.4	645
12/13/15	2,457	6,013	12,325	8,470	14,633	20,795	38.5	26.5	702
12/14/15	2,971	7,327	16,226	10,298	18,411	26,524	33.2	31.8	1011
12/15/15	2,877	7,304	15,914	10,181	18,138	26,095	34.2	30.8	949
12/16/15	3,128	7,930	17,069	11,058	19,593	28,127	29.6	35.4	1253
12/17/15	3,765	9,363	19,932	13,128	23,094	33,060	20.8	44.2	1954
12/18/15	4,202	10,234	21,298	14,436	25,085	35,734	13.1	51.9	2694
12/19/15	3,321	8,055	16,360	11,376	19,556	27,736	25.3	39.7	1576
12/20/15	2,861	7,042	14,372	9,903	17,089	24,275	34.4	30.6	936
12/21/15	3,157	7,651	16,564	10,808	19,090	27,372	31.3	33.7	1136
12/22/15	3,119	7,466	15,990	10,585	18,580	26,575	33.7	31.3	980
12/23/15	3,161	7,484	15,715	10,645	18,503	26,360	29.4	35.6	1267
12/24/15	3,096	7,354	14,588	10,450	17,744	25,038	25.7	39.3	1544
12/25/15	2,831	6,765	13,279	9,596	16,236	22,875	28.4	36.6	1340
12/26/15	3,070	7,265	14,649	10,335	17,660	24,984	27.1	37.9	1436
12/27/15	3,930	9,469	18,960	13,399	22,879	32,359	15.6	49.4	2440
12/28/15	4,157	9,851	20,201	14,008	24,109	34,209	21.7	43.3	1875
12/29/15	3,776	9,118	18,910	12,894	22,349	31,804	22.7	42.3	1789
12/30/15	4,003	9,355	19,417	13,358	23,067	32,775	18.7	46.3	2144
12/31/15	4,114	9,429	18,525	13,543	22,806	32,068	16.6	48.4	2343
01/01/16	3,554	8,426	16,319	11,980	20,140	28,299	21.3	43.7	1910
01/02/16	3,190	7,785	15,438	10,975	18,694	26,413	26.5	38.5	1482
01/03/16	3,591	8,892	17,365	12,483	21,166	29,848	21.3	43.7	1910
01/04/16	3,868	9,684	20,167	13,552	23,636	33,719	20.9	44.1	1945
01/05/16	3,602	8,635	18,470	12,237	21,472	30,707	26.4	38.6	1490
01/06/16	3,269	7,843	17,049	11,112	19,637	28,161	30.8	34.2	1170

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
01/07/16	3,080	7,501	16,255	10,581	18,709	26,836	32.6	32.4	1050
01/08/16	3,607	8,395	17,595	12,002	20,800	29,597	22.8	42.2	1781
01/09/16	5,106	11,720	23,203	16,826	28,428	40,029	(2.3)	67.3	4529
01/10/16	5,437	13,064	25,224	18,501	31,113	43,725	(5.3)	70.3	4942
01/11/16	5,591	13,491	27,036	19,082	32,600	46,118	0.9	64.1	4109
01/12/16	5,619	13,929	27,699	19,548	33,398	47,247	(1.4)	66.4	4409
01/13/16	4,410	10,983	22,218	15,393	26,502	37,611	17.6	47.4	2247
01/14/16	3,931	9,849	20,245	13,780	23,903	34,025	23.5	41.5	1722
01/15/16	4,499	10,722	21,964	15,221	26,203	37,185	12.6	52.4	2746
01/16/16	5,528	13,166	25,522	18,694	31,455	44,216	(6.7)	71.7	5141
01/17/16	5,771	14,356	27,404	20,127	33,829	47,531	(8.2)	73.2	5358
01/18/16	5,877	14,657	29,005	20,534	35,037	49,539	(2.8)	67.8	4597
01/19/16	5,183	12,867	26,177	18,050	31,139	44,227	7.2	57.8	3341
01/20/16	4,194	10,578	21,923	14,772	25,734	36,695	20.3	44.7	1998
01/21/16	4,062	10,114	21,121	14,176	24,737	35,297	20.9	44.1	1945
01/22/16	3,878	9,401	19,829	13,279	23,194	33,108	20.6	44.4	1971
01/23/16	3,625	8,671	17,514	12,296	21,053	29,810	22.8	42.2	1781
01/24/16	3,322	8,149	16,467	11,471	19,705	27,938	28.5	36.5	1332
01/25/16	3,654	8,804	19,178	12,458	22,047	31,636	26.9	38.1	1452
01/26/16	3,896	9,541	20,341	13,437	23,608	33,778	22.1	42.9	1840
01/27/16	3,193	7,999	16,848	11,192	19,616	28,040	36.0	29.0	841
01/28/16	3,625	8,893	19,000	12,518	22,018	31,518	24.7	40.3	1624
01/29/16	3,207	7,601	16,656	10,808	19,136	27,464	31.0	34.0	1156
01/30/16	2,595	6,245	13,129	8,840	15,405	21,969	36.7	28.3	801
01/31/16	2,867	7,074	14,596	9,941	17,239	24,537	31.9	33.1	1096
02/01/16	3,380	8,093	17,661	11,473	20,304	29,134	29.7	35.3	1246
02/02/16	3,752	9,388	19,269	13,140	22,775	32,409	24.7	40.3	1624
02/03/16	4,125	10,344	21,631	14,469	25,285	36,100	15.3	49.7	2470
02/04/16	4,226	10,361	21,412	14,587	25,293	35,999	16.4	48.6	2362
02/05/16	3,667	8,819	18,096	12,486	21,534	30,582	24.8	40.2	1616
02/06/16	2,880	7,044	13,892	9,924	16,870	23,816	34.3	30.7	942
02/07/16	3,564	8,893	17,147	12,457	21,031	29,604	24.3	40.7	1656
02/08/16	4,753	11,833	23,794	16,586	28,483	40,380	11.9	53.1	2820
02/09/16	4,905	12,150	24,373	17,055	29,242	41,428	9.7	55.3	3058
02/10/16	4,923	12,317	24,589	17,240	29,535	41,829	8.5	56.5	3192
02/11/16	4,682	11,383	23,247	16,065	27,689	39,312	13.0	52.0	2704
02/12/16	5,295	12,370	24,862	17,665	30,096	42,527	2.5	62.5	3906
02/13/16	4,712	10,991	21,454	15,703	26,430	37,157	7.8	57.2	3272
02/14/16	4,213	10,318	20,022	14,531	24,542	34,553	18.0	47.0	2209
02/15/16	3,431	8,293	17,817	11,724	20,633	29,541	30.3	34.7	1204
02/16/16	3,632	8,838	19,107	12,470	22,024	31,577	24.4	40.6	1648
02/17/16	3,542	8,564	18,493	12,106	21,353	30,599	26.9	38.1	1452
02/18/16	2,936	7,198	15,768	10,134	18,018	25,902	37.4	27.6	762
02/19/16	2,633	6,200	13,464	8,833	15,565	22,297	40.3	24.7	610
02/20/16	2,729	6,466	13,122	9,195	15,756	22,317	33.4	31.6	999
02/21/16	2,956	7,173	14,559	10,129	17,409	24,688	31.7	33.3	1109
02/22/16	3,014	7,437	16,416	10,451	18,659	26,867	33.0	32.0	1024
02/23/16	2,856	7,298	15,891	10,154	18,100	26,045	35.7	29.3	858
02/24/16	3,084	7,697	16,550	10,781	19,056	27,331	32.7	32.3	1043
02/25/16	3,327	8,350	17,667	11,677	20,511	29,344	28.7	36.3	1318
02/26/16	2,588	6,422	13,945	9,010	15,983	22,955	36.2	28.8	829
02/27/16	1,800	4,622	9,515	6,422	11,180	15,937	47.0	18.0	324
02/28/16	2,854	7,141	14,447	9,995	17,219	24,442	32.8	32.2	1037
02/29/16	3,855	9,471	20,073	13,326	23,363	33,399	20.6	44.4	1971
03/01/16	3,990	9,966	20,902	13,956	24,407	34,858	18.7	46.3	2144
03/02/16	3,435	8,459	18,676	11,894	21,232	30,570	26.4	38.6	1490
03/03/16	3,112	7,658	17,148	10,770	19,344	27,918	30.9	34.1	1163
03/04/16	3,004	7,126	15,275	10,130	17,768	25,405	33.1	31.9	1018
03/05/16	2,594	6,378	13,042	8,972	15,493	22,014	33.2	31.8	1011
03/06/16	1,803	4,697	9,731	6,500	11,366	16,231	48.0	17.0	289
03/07/16	1,428	3,736	9,066	5,164	9,697	14,230	58.2	6.8	46
03/08/16	1,817	4,517	10,931	6,334	11,800	17,265	49.3	15.7	246
03/09/16	2,494	6,049	13,688	8,543	15,387	22,231	37.5	27.5	756
03/10/16	2,525	6,129	13,826	8,654	15,567	22,480	39.2	25.8	666
03/11/16	1,574	3,652	8,546	5,226	9,499	13,772	55.8	9.2	85

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
03/12/16	1,161	2,849	6,158	4,010	7,089	10,168	56.8	8.2	67
03/13/16	1,478	3,789	8,064	5,267	9,299	13,331	51.4	13.6	185
03/14/16	1,551	3,775	9,297	5,326	9,975	14,623	53.6	11.4	130
03/15/16	1,910	4,603	10,915	6,513	11,971	17,428	48.1	16.9	286
03/16/16	2,426	5,820	13,363	8,246	14,928	21,609	41.0	24.0	576
03/17/16	2,773	6,425	14,793	9,198	16,595	23,991	36.0	29.0	841
03/18/16	2,934	6,463	14,481	9,397	16,638	23,878	32.0	33.0	1089
03/19/16	2,575	5,941	12,599	8,516	14,816	21,115	33.7	31.3	980
03/20/16	2,415	6,105	12,851	8,520	14,946	21,371	35.3	29.7	882
03/21/16	2,061	5,492	12,610	7,553	13,858	20,163	44.3	20.7	428
03/22/16	2,146	5,703	13,149	7,849	14,424	20,998	41.8	23.2	538
03/23/16	3,000	7,631	16,566	10,631	18,914	27,197	30.7	34.3	1176
03/24/16	2,590	6,452	14,238	9,042	16,161	23,280	36.2	28.8	829
03/25/16	2,133	5,074	10,715	7,207	12,565	17,922	42.4	22.6	511
03/26/16	1,906	4,605	9,312	6,511	11,167	15,823	44.3	20.7	428
03/27/16	2,336	5,898	11,624	8,234	14,046	19,858	36.2	28.8	829
03/28/16	1,905	4,832	10,891	6,737	12,183	17,628	48.1	16.9	286
03/29/16	1,658	4,270	9,957	5,928	10,907	15,885	52.5	12.5	156
03/30/16	2,086	5,218	11,787	7,304	13,198	19,091	44.3	20.7	428
03/31/16	2,249	5,415	12,130	7,664	13,729	19,794	42.5	22.5	506
11/01/16	1,514	3,678	9,555	5,192	9,970	14,747	51.1	13.9	193
11/02/16	1,391	3,702	9,589	5,093	9,888	14,682	52.1	12.9	166
11/03/16	1,304	3,631	9,152	4,935	9,511	14,087	52.3	12.7	161
11/04/16	1,208	2,939	7,680	4,147	7,987	11,827	55.0	10.0	100
11/05/16	1,044	2,582	6,618	3,626	6,935	10,244	57.5	7.5	56
11/06/16	1,079	2,841	7,226	3,920	7,533	11,146	56.2	8.8	77
11/07/16	1,389	3,480	9,260	4,869	9,499	14,129	54.3	10.7	114
11/08/16	1,597	4,098	10,477	5,695	10,934	16,172	47.0	18.0	324
11/09/16	1,497	3,794	9,650	5,291	10,116	14,941	51.7	13.3	177
11/10/16	1,442	3,653	9,352	5,095	9,771	14,447	53.0	12.0	144
11/11/16	1,928	4,358	10,972	6,286	11,772	17,258	40.8	24.2	586
11/12/16	1,606	3,645	8,524	5,251	9,513	13,775	46.9	18.1	328
11/13/16	1,483	3,553	8,196	5,036	9,134	13,232	50.8	14.2	202
11/14/16	2,003	4,627	11,702	6,630	12,481	18,332	43.8	21.2	449
11/15/16	1,939	4,420	11,060	6,359	11,889	17,419	52.8	12.2	149
11/16/16	1,531	3,844	9,709	5,375	10,230	15,084	49.1	15.9	253
11/17/16	1,653	4,066	10,186	5,719	10,812	15,905	50.8	14.2	202
11/18/16	2,680	6,047	13,825	8,727	15,640	22,552	34.0	31.0	961
11/19/16	2,917	6,664	14,577	9,581	16,870	24,158	22.6	42.4	1798
11/20/16	3,096	7,313	15,590	10,409	18,204	25,999	23.2	41.8	1747
11/21/16	2,973	7,007	15,478	9,980	17,719	25,458	34.5	30.5	930
11/22/16	3,101	7,101	15,740	10,202	18,072	25,942	34.7	30.3	918
11/23/16	2,619	6,314	13,661	8,933	15,764	22,594	34.5	30.5	930
11/24/16	2,413	5,712	11,690	8,125	13,970	19,815	34.7	30.3	918
11/25/16	2,678	6,210	13,122	8,888	15,449	22,010	33.2	31.8	1011
11/26/16	2,254	5,544	11,606	7,798	13,601	19,404	36.7	28.3	801
11/27/16	2,268	5,539	11,509	7,807	13,562	19,316	42.6	22.4	502
11/28/16	2,332	5,706	12,851	8,038	14,464	20,889	43.1	21.9	480
11/29/16	2,714	6,535	14,639	9,249	16,569	23,888	36.5	28.5	812
11/30/16	2,770	6,461	14,390	9,231	16,426	23,621	36.8	28.2	795
12/01/16	2,849	6,770	15,048	9,619	17,143	24,667	34.3	30.7	942
12/02/16	2,930	6,890	15,285	9,820	17,463	25,105	31.0	34.0	1156
12/03/16	2,693	6,433	13,636	9,126	15,944	22,762	31.1	33.9	1149
12/04/16	2,785	6,850	14,268	9,635	16,769	23,903	33.7	31.3	980
12/05/16	3,018	7,351	16,119	10,369	18,429	26,488	34.7	30.3	918
12/06/16	4,058	9,898	21,017	13,956	24,465	34,973	19.8	45.2	2043
12/07/16	4,234	10,527	22,124	14,761	25,823	36,885	17.7	47.3	2237
12/08/16	4,218	10,202	21,574	14,420	25,207	35,994	19.2	45.8	2098
12/09/16	4,389	10,507	21,899	14,896	25,846	36,795	11.5	53.5	2862
12/10/16	4,222	9,980	20,138	14,202	24,271	34,340	12.7	52.3	2735
12/11/16	4,190	10,154	20,459	14,344	24,574	34,803	14.0	51.0	2601
12/12/16	5,051	12,540	25,618	17,591	30,400	43,209	0.8	64.2	4122
12/13/16	4,926	12,508	25,867	17,434	30,368	43,301	6.7	58.3	3399
12/14/16	5,493	13,674	28,178	19,167	33,256	47,345	(0.7)	65.7	4316
12/15/16	5,250	13,322	27,013	18,572	32,079	45,585	2.4	62.6	3919

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
12/16/16	4,873	11,473	23,554	16,346	28,123	39,900	10.3	54.7	2992
12/17/16	5,469	12,965	25,371	18,434	31,120	43,805	(5.5)	70.5	4970
12/18/16	5,411	13,487	25,997	18,898	31,897	44,895	(3.5)	68.5	4692
12/19/16	4,227	10,496	21,519	14,723	25,483	36,242	22.9	42.1	1772
12/20/16	3,381	8,650	17,956	12,031	21,009	29,987	30.2	34.8	1211
12/21/16	3,227	8,327	17,383	11,554	20,246	28,937	32.1	32.9	1082
12/22/16	3,076	8,042	16,025	11,118	19,131	27,143	33.0	32.0	1024
12/23/16	2,947	7,304	14,051	10,251	17,277	24,302	34.0	31.0	961
12/24/16	2,685	6,693	12,544	9,378	15,650	21,922	33.5	31.5	992
12/25/16	2,912	7,229	13,207	10,141	16,745	23,348	34.0	31.0	961
12/26/16	4,153	10,074	19,378	14,227	23,916	33,605	19.3	45.7	2088
12/27/16	3,870	9,676	19,912	13,546	23,502	33,458	21.7	43.3	1875
12/28/16	3,270	8,288	17,211	11,558	20,164	28,769	31.6	33.4	1116
12/29/16	3,551	8,970	18,657	12,521	21,850	31,178	25.6	39.4	1552
12/30/16	3,539	8,218	17,129	11,757	20,322	28,886	27.7	37.3	1391
12/31/16	3,311	8,148	16,219	11,459	19,569	27,678	24.0	41.0	1681
01/01/17	3,057	7,483	14,989	10,540	18,035	25,529	28.5	36.5	1332
01/02/17	3,225	8,111	16,787	11,336	19,730	28,123	30.8	34.2	1170
01/03/17	4,959	12,461	25,957	17,420	30,399	43,377	5.0	60.0	3600
01/04/17	5,530	13,898	28,496	19,428	33,676	47,924	(1.0)	66.0	4356
01/05/17	5,746	14,692	29,118	20,438	34,997	49,556	(4.5)	69.5	4830
01/06/17	5,448	13,248	26,367	18,696	31,880	45,063	0.7	64.3	4134
01/07/17	5,119	12,597	23,811	17,716	29,622	41,527	2.0	63.0	3969
01/08/17	4,626	11,394	21,769	16,020	26,905	37,789	13.8	51.2	2621
01/09/17	4,043	10,135	21,013	14,178	24,685	35,191	24.7	40.3	1624
01/10/17	4,751	11,890	24,103	16,641	28,693	40,744	11.4	53.6	2873
01/11/17	5,054	12,495	25,386	17,549	30,242	42,935	6.4	58.6	3434
01/12/17	5,400	13,510	27,025	18,910	32,423	45,935	1.2	63.8	4070
01/13/17	5,193	12,455	24,510	17,648	29,903	42,158	5.0	60.0	3600
01/14/17	4,309	10,521	20,237	14,830	24,949	35,067	12.5	52.5	2756
01/15/17	3,783	9,529	18,380	13,312	22,502	31,692	21.5	43.5	1892
01/16/17	3,571	8,940	18,383	12,511	21,703	30,894	21.5	43.5	1892
01/17/17	3,380	8,452	17,712	11,832	20,688	29,544	31.0	34.0	1156
01/18/17	2,897	7,587	15,941	10,484	18,455	26,425	34.4	30.6	936
01/19/17	2,808	7,191	15,105	9,999	17,552	25,104	35.5	29.5	870
01/20/17	2,793	6,713	14,203	9,506	16,608	23,709	35.3	29.7	882
01/21/17	2,588	6,248	12,620	8,836	15,146	21,456	36.3	28.7	824
01/22/17	2,672	6,802	13,549	9,474	16,249	23,023	36.1	28.9	835
01/23/17	3,006	7,704	15,960	10,710	18,690	26,670	33.4	31.6	999
01/24/17	3,126	7,998	16,640	11,124	19,444	27,764	31.8	33.2	1102
01/25/17	3,429	8,590	17,770	12,019	20,904	29,789	29.2	35.8	1282
01/26/17	3,657	9,120	18,907	12,777	22,231	31,684	24.6	40.4	1632
01/27/17	3,377	8,381	17,850	11,758	20,683	29,608	25.6	39.4	1552
01/28/17	3,402	8,278	16,784	11,680	20,072	28,464	25.8	39.2	1537
01/29/17	3,532	8,970	17,941	12,502	21,473	30,443	22.5	42.5	1806
01/30/17	2,979	7,837	16,756	10,816	19,194	27,572	39.3	25.7	660
01/31/17	3,210	8,407	17,840	11,617	20,537	29,457	30.8	34.2	1170
02/01/17	4,354	11,244	22,964	15,598	27,080	38,562	12.8	52.2	2725
02/02/17	4,662	11,650	23,689	16,312	28,157	40,001	11.8	53.2	2830
02/03/17	4,114	10,043	20,356	14,157	24,335	34,513	18.3	46.7	2181
02/04/17	3,300	8,016	15,722	11,316	19,177	27,038	29.4	35.6	1267
02/05/17	3,614	9,068	17,899	12,682	21,632	30,581	21.7	43.3	1875
02/06/17	3,350	8,517	18,251	11,867	20,993	30,118	30.1	34.9	1218
02/07/17	4,406	10,994	22,988	15,400	26,894	38,388	15.3	49.7	2470
02/08/17	4,893	12,293	24,946	17,186	29,659	42,132	7.8	57.2	3272
02/09/17	4,116	10,664	21,586	14,780	25,573	36,366	18.3	46.7	2181
02/10/17	2,625	6,578	14,022	9,203	16,214	23,225	39.8	25.2	635
02/11/17	2,488	6,204	12,361	8,692	14,873	21,053	38.1	26.9	724
02/12/17	2,901	7,409	15,006	10,310	17,813	25,316	33.1	31.9	1018
02/13/17	2,714	6,868	15,189	9,582	17,177	24,771	38.6	26.4	697
02/14/17	3,154	7,924	17,117	11,078	19,637	28,195	31.3	33.7	1136
02/15/17	3,069	7,894	17,055	10,963	19,491	28,018	29.8	35.2	1239
02/16/17	2,794	6,951	15,376	9,745	17,433	25,121	34.6	30.4	924
02/17/17	2,026	4,742	10,859	6,768	12,198	17,627	47.3	17.7	313
02/18/17	1,957	4,524	9,643	6,481	11,303	16,124	45.1	19.9	396

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
02/19/17	1,728	4,150	8,827	5,878	10,292	14,705	51.6	13.4	180
02/20/17	2,175	5,207	12,598	7,382	13,681	19,980	45.5	19.5	380
02/21/17	1,945	4,733	11,347	6,678	12,352	18,025	48.5	16.5	272
02/22/17	2,244	5,536	12,748	7,780	14,154	20,528	43.5	21.5	462
02/23/17	3,137	7,651	16,974	10,788	19,275	27,762	30.7	34.3	1176
02/24/17	3,799	9,025	19,108	12,824	22,378	31,932	21.8	43.2	1866
02/25/17	3,208	7,836	15,841	11,044	18,965	26,885	26.7	38.3	1467
02/26/17	3,019	7,553	15,314	10,572	18,229	25,886	30.2	34.8	1211
02/27/17	2,595	6,694	14,996	9,289	16,787	24,285	38.6	26.4	697
02/28/17	2,803	6,970	15,454	9,773	17,500	25,227	35.7	29.3	858
03/01/17	3,318	8,506	18,327	11,824	20,988	30,151	26.7	38.3	1467
03/02/17	3,734	9,325	19,607	13,059	22,863	32,666	21.5	43.5	1892
03/03/17	3,333	8,101	17,060	11,434	19,964	28,494	26.0	39.0	1521
03/04/17	2,507	6,269	12,450	8,776	15,001	21,226	37.4	27.6	762
03/05/17	1,751	4,429	9,076	6,180	10,718	15,256	51.9	13.1	172
03/06/17	2,109	5,392	12,745	7,501	13,874	20,246	46.9	18.1	328
03/07/17	2,745	7,231	15,898	9,976	17,925	25,874	37.4	27.6	762
03/08/17	3,217	8,257	18,091	11,474	20,520	29,565	28.2	36.8	1354
03/09/17	3,818	9,735	20,431	13,553	23,769	33,984	20.0	45.0	2025
03/10/17	4,076	10,325	21,341	14,401	25,072	35,742	12.6	52.4	2746
03/11/17	3,586	9,210	18,019	12,796	21,806	30,815	16.0	49.0	2401
03/12/17	3,826	10,130	19,300	13,956	23,606	33,256	18.6	46.4	2153
03/13/17	3,949	10,068	21,030	14,017	24,532	35,047	18.4	46.6	2172
03/14/17	3,594	9,748	20,194	13,342	23,439	33,536	20.1	44.9	2016
03/15/17	3,456	8,885	18,864	12,341	21,773	31,205	24.5	40.5	1640
03/16/17	2,915	7,641	16,046	10,556	18,579	26,602	34.7	30.3	918
03/17/17	2,794	7,094	14,925	9,888	17,351	24,813	36.2	28.8	829
03/18/17	2,483	6,539	13,524	9,022	15,784	22,546	34.1	30.9	955
03/19/17	1,955	5,601	11,424	7,556	13,268	18,980	44.3	20.7	428
03/20/17	2,152	5,944	13,450	8,096	14,821	21,546	43.7	21.3	454
03/21/17	2,914	7,812	17,552	10,726	19,502	28,278	28.7	36.3	1318
03/22/17	2,706	7,083	15,893	9,789	17,736	25,682	35.8	29.2	853
03/23/17	2,563	6,730	15,061	9,293	16,824	24,354	38.7	26.3	692
03/24/17	2,408	5,862	13,229	8,270	14,885	21,499	40.1	24.9	620
03/25/17	2,247	5,646	11,584	7,893	13,685	19,477	39.3	25.7	660
03/26/17	2,385	5,848	12,052	8,233	14,259	20,285	39.9	25.1	630
03/27/17	2,069	5,020	12,044	7,089	13,111	19,133	46.4	18.6	346
03/28/17	1,771	4,374	10,642	6,145	11,466	16,787	52.4	12.6	159
03/29/17	2,160	5,311	12,383	7,471	13,663	19,854	44.6	20.4	416
03/30/17	2,393	5,802	13,267	8,195	14,829	21,462	42.1	22.9	524
03/31/17	1,924	4,700	11,111	6,624	12,180	17,735	45.9	19.1	365
11/01/17	2,716	6,651	15,206	9,367	16,970	24,573	34.8	30.2	912
11/02/17	2,649	6,439	15,072	9,088	16,624	24,160	35.5	29.5	870
11/03/17	2,641	6,401	14,444	9,042	16,264	23,486	33.3	31.7	1005
11/04/17	2,278	5,404	11,582	7,682	13,473	19,264	40.1	24.9	620
11/05/17	2,864	7,110	15,264	9,974	17,606	25,238	28.0	37.0	1369
11/06/17	2,840	7,483	16,759	10,323	18,703	27,082	29.7	35.3	1246
11/07/17	2,794	7,299	16,450	10,093	18,318	26,543	30.3	34.7	1204
11/08/17	2,741	7,079	16,055	9,820	17,848	25,875	32.0	33.0	1089
11/09/17	3,736	9,431	20,694	13,167	23,514	33,861	15.8	49.2	2421
11/10/17	3,398	8,541	17,910	11,939	20,894	29,849	24.5	40.5	1640
11/11/17	2,451	6,323	12,996	8,774	15,272	21,770	33.6	31.4	986
11/12/17	2,794	7,160	15,001	9,954	17,455	24,955	30.4	34.6	1197
11/13/17	2,396	6,296	14,065	8,692	15,725	22,757	40.3	24.7	610
11/14/17	2,168	5,682	13,038	7,850	14,369	20,888	43.4	21.6	467
11/15/17	2,969	7,691	17,170	10,660	19,245	27,830	30.3	34.7	1204
11/16/17	2,952	7,349	16,337	10,301	18,470	26,638	33.2	31.8	1011
11/17/17	2,615	6,397	14,119	9,012	16,072	23,131	36.4	28.6	818
11/18/17	3,025	7,424	15,652	10,449	18,275	26,101	25.7	39.3	1544
11/19/17	2,618	6,736	14,309	9,354	16,509	23,663	33.7	31.3	980
11/20/17	2,711	6,736	15,102	9,447	16,998	24,549	39.2	25.8	666
11/21/17	3,570	9,104	19,656	12,674	22,502	32,330	21.4	43.6	1901
11/22/17	3,092	7,901	16,602	10,993	19,294	27,595	26.7	38.3	1467
11/23/17	1,858	5,093	9,870	6,951	11,886	16,821	43.3	21.7	471
11/24/17	1,806	4,951	10,282	6,757	11,898	17,039	45.4	19.6	384

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
11/25/17	2,470	6,164	12,642	8,634	14,955	21,276	32.7	32.3	1043
11/26/17	2,157	5,583	11,690	7,740	13,585	19,430	40.8	24.2	586
11/27/17	1,755	4,734	10,822	6,489	11,900	17,311	51.9	13.1	172
11/28/17	2,291	6,121	14,040	8,412	15,432	22,452	39.2	25.8	666
11/29/17	2,390	6,256	13,749	8,646	15,521	22,395	41.0	24.0	576
11/30/17	2,433	6,349	13,925	8,782	15,745	22,707	37.7	27.3	745
12/01/17	2,298	5,892	12,844	8,190	14,612	21,034	40.6	24.4	595
12/02/17	2,259	5,734	11,805	7,993	13,896	19,798	36.7	28.3	801
12/03/17	1,908	4,788	9,912	6,696	11,652	16,608	48.0	17.0	289
12/04/17	2,528	6,625	14,503	9,153	16,405	23,656	37.3	27.7	767
12/05/17	3,717	10,082	20,697	13,799	24,148	34,496	18.5	46.5	2162
12/06/17	3,940	10,786	21,830	14,726	25,641	36,556	15.5	49.5	2450
12/07/17	3,862	10,188	20,756	14,050	24,428	34,806	18.5	46.5	2162
12/08/17	3,423	8,589	17,724	12,012	20,874	29,736	26.6	38.4	1475
12/09/17	3,287	8,525	16,744	11,812	20,184	28,556	22.0	43.0	1849
12/10/17	3,141	8,018	16,333	11,159	19,326	27,492	27.0	38.0	1444
12/11/17	3,758	9,642	20,176	13,400	23,488	33,576	20.7	44.3	1962
12/12/17	3,672	9,444	19,860	13,116	23,046	32,976	22.1	42.9	1840
12/13/17	3,780	9,662	20,366	13,442	23,625	33,808	21.4	43.6	1901
12/14/17	3,698	9,604	19,939	13,302	23,272	33,241	22.3	42.7	1823
12/15/17	3,174	8,161	16,959	11,335	19,815	28,294	27.3	37.7	1421
12/16/17	3,033	7,800	15,758	10,833	18,712	26,591	27.8	37.2	1384
12/17/17	3,077	8,019	16,459	11,096	19,326	27,555	27.0	38.0	1444
12/18/17	2,841	7,287	16,092	10,128	18,174	26,220	36.5	28.5	812
12/19/17	3,269	8,488	18,180	11,757	20,847	29,937	27.0	38.0	1444
12/20/17	3,816	10,011	20,784	13,827	24,219	34,611	19.3	45.7	2088
12/21/17	3,808	9,846	19,985	13,654	23,647	33,639	21.2	43.8	1918
12/22/17	3,696	9,399	18,712	13,095	22,451	31,807	18.5	46.5	2162
12/23/17	3,582	9,228	17,273	12,810	21,447	30,083	17.8	47.2	2228
12/24/17	3,972	10,178	18,441	14,150	23,371	32,591	11.3	53.7	2884
12/25/17	4,979	12,614	23,507	17,593	29,347	41,100	(4.3)	69.3	4802
12/26/17	5,573	14,209	27,459	19,782	33,512	47,241	(4.0)	69.0	4761
12/27/17	5,229	13,435	26,681	18,664	32,005	45,345	2.4	62.6	3919
12/28/17	4,972	13,084	25,612	18,056	30,862	43,668	6.2	58.8	3457
12/29/17	5,456	13,888	26,824	19,344	32,756	46,168	(3.5)	68.5	4692
12/30/17	5,681	14,185	26,648	19,866	33,190	46,514	(9.3)	74.3	5520
12/31/17	5,629	14,315	26,328	19,944	33,108	46,272	(10.6)	75.6	5715
01/01/18	5,534	14,433	26,878	19,967	33,406	46,845	(6.1)	71.1	5055
01/02/18	5,120	13,597	26,773	18,717	32,104	45,490	7.4	57.6	3318
01/03/18	5,372	14,149	28,023	19,521	33,533	47,544	0.3	64.7	4186
01/04/18	5,582	14,592	28,580	20,174	34,464	48,754	(3.5)	68.5	4692
01/05/18	5,480	14,274	27,741	19,754	33,625	47,495	(4.2)	69.2	4789
01/06/18	4,602	11,989	22,576	16,591	27,879	39,167	9.2	55.8	3114
01/07/18	3,529	9,321	18,084	12,850	21,892	30,934	26.3	38.7	1498
01/08/18	3,203	8,585	17,714	11,788	20,645	29,502	30.3	34.7	1204
01/09/18	2,864	7,708	16,023	10,572	18,584	26,595	37.0	28.0	784
01/10/18	3,046	8,240	18,230	11,286	20,401	29,516	32.4	32.6	1063
01/11/18	4,984	13,382	26,255	18,366	31,494	44,621	2.7	62.3	3881
01/12/18	5,270	13,885	26,592	19,155	32,451	45,747	(4.0)	69.0	4761
01/13/18	5,094	13,173	24,412	18,267	30,473	42,679	(2.4)	67.4	4543
01/14/18	4,655	12,064	22,601	16,719	28,020	39,320	10.7	54.3	2948
01/15/18	5,384	13,743	27,130	19,127	32,692	46,257	2.1	62.9	3956
01/16/18	5,091	13,581	27,016	18,672	32,180	45,688	2.5	62.5	3906
01/17/18	3,973	10,691	21,547	14,664	25,438	36,211	22.8	42.2	1781
01/18/18	3,071	8,401	17,297	11,472	20,121	28,769	33.5	31.5	992
01/19/18	2,807	7,525	15,101	10,332	17,883	25,433	34.9	30.1	906
01/20/18	2,501	6,756	13,013	9,257	15,764	22,270	35.7	29.3	858
01/21/18	2,696	7,323	14,540	10,019	17,289	24,559	35.5	29.5	870
01/22/18	3,430	9,392	18,977	12,822	22,311	31,799	23.5	41.5	1722
01/23/18	3,658	9,646	20,275	13,304	23,442	33,579	19.8	45.2	2043
01/24/18	3,520	9,268	19,442	12,788	22,509	32,230	24.4	40.6	1648
01/25/18	3,336	8,880	18,508	12,216	21,470	30,724	28.1	36.9	1362
01/26/18	2,773	7,318	15,370	10,091	17,776	25,461	36.5	28.5	812
01/27/18	3,170	8,549	16,495	11,719	19,967	28,214	24.0	41.0	1681
01/28/18	4,035	10,650	20,507	14,685	24,939	35,192	14.0	51.0	2601

Date	F16	F17	T18	F1617	F161750T18	F1617100T18	Temperature	HDD	HDDs^2
01/29/18	4,574	12,091	24,543	16,665	28,937	41,208	8.8	56.2	3158
01/30/18	3,869	10,453	21,070	14,322	24,857	35,392	23.8	41.2	1697
01/31/18	3,993	11,084	22,443	15,077	26,299	37,520	15.2	49.8	2480
02/01/18	5,201	13,919	27,684	19,120	32,962	46,804	(0.8)	65.8	4330
02/02/18	4,592	11,968	23,593	16,560	28,357	40,153	9.2	55.8	3114
02/03/18	4,368	11,428	21,719	15,796	26,656	37,515	9.4	55.6	3091
02/04/18	4,962	13,053	25,447	18,015	30,739	43,462	(0.9)	65.9	4343
02/05/18	5,030	13,372	26,564	18,402	31,684	44,966	4.4	60.6	3672
02/06/18	4,840	12,903	25,888	17,743	30,687	43,631	5.4	59.6	3552
02/07/18	4,691	12,426	24,894	17,117	29,564	42,011	8.8	56.2	3158
02/08/18	4,628	12,252	24,159	16,880	28,960	41,039	10.3	54.7	2992
02/09/18	4,648	12,089	23,528	16,737	28,501	40,265	6.0	59.0	3481
02/10/18	4,516	11,708	21,826	16,224	27,137	38,050	5.0	60.0	3600
02/11/18	4,426	11,730	22,130	16,156	27,221	38,286	9.4	55.6	3091
02/12/18	4,694	12,390	24,432	17,084	29,300	41,516	8.4	56.6	3204
02/13/18	3,742	10,301	20,488	14,043	24,287	34,531	24.0	41.0	1681
02/14/18	2,878	8,032	16,835	10,910	19,328	27,745	34.6	30.4	924
02/15/18	3,726	9,976	20,277	13,702	23,841	33,979	21.6	43.4	1884
02/16/18	3,907	10,389	20,689	14,296	24,641	34,985	17.4	47.6	2266
02/17/18	3,110	8,472	16,341	11,582	19,753	27,923	26.6	38.4	1475
02/18/18	3,142	8,317	16,372	11,459	19,645	27,831	31.8	33.2	1102
02/19/18	3,989	10,520	21,629	14,509	25,324	36,138	21.3	43.7	1910
02/20/18	4,307	11,657	23,939	15,964	27,934	39,903	12.5	52.5	2756
02/21/18	4,190	11,341	23,286	15,531	27,174	38,817	13.1	51.9	2694
02/22/18	3,550	9,582	19,977	13,132	23,121	33,109	26.0	39.0	1521
02/23/18	3,558	9,438	19,278	12,996	22,635	32,274	20.8	44.2	1954
02/24/18	3,422	9,153	17,398	12,575	21,274	29,973	22.8	42.2	1781
02/25/18	3,377	9,206	18,093	12,583	21,630	30,676	21.8	43.2	1866
02/26/18	2,951	7,913	16,985	10,864	19,357	27,849	33.1	31.9	1018
02/27/18	2,713	7,408	16,138	10,121	18,190	26,259	36.8	28.2	795
02/28/18	2,639	7,219	15,940	9,858	17,828	25,798	36.3	28.7	824
03/01/18	2,929	8,075	17,241	11,004	19,625	28,245	29.4	35.6	1267
03/02/18	2,663	6,908	14,763	9,571	16,953	24,334	35.1	29.9	894
03/03/18	2,301	6,019	12,049	8,320	14,345	20,369	39.8	25.2	635
03/04/18	2,568	6,800	13,933	9,368	16,335	23,301	37.8	27.2	740
03/05/18	3,181	8,536	18,151	11,717	20,793	29,868	30.8	34.2	1170
03/06/18	3,405	9,100	19,197	12,505	22,104	31,702	24.9	40.1	1608
03/07/18	3,591	9,375	19,873	12,966	22,903	32,839	20.6	44.4	1971
03/08/18	3,390	8,910	19,060	12,300	21,830	31,360	23.3	41.7	1739
03/09/18	2,896	7,697	16,208	10,593	18,697	26,801	27.4	37.6	1414
03/10/18	2,508	6,685	13,466	9,193	15,926	22,659	32.3	32.7	1069
03/11/18	2,610	7,587	15,453	10,197	17,924	25,650	31.4	33.6	1129
03/12/18	2,657	7,811	17,091	10,468	19,014	27,559	31.6	33.4	1116
03/13/18	2,741	7,870	17,398	10,611	19,310	28,009	29.6	35.4	1253
03/14/18	2,399	6,789	15,519	9,188	16,948	24,707	36.0	29.0	841
03/15/18	2,742	7,502	16,609	10,244	18,549	26,853	31.1	33.9	1149
03/16/18	2,635	7,054	14,953	9,689	17,166	24,642	32.9	32.1	1030
03/17/18	2,148	5,880	11,765	8,028	13,911	19,793	38.1	26.9	724
03/18/18	2,336	6,168	12,851	8,504	14,930	21,355	38.3	26.7	713
03/19/18	2,664	6,869	15,542	9,533	17,304	25,075	36.0	29.0	841
03/20/18	3,023	8,013	17,755	11,036	19,914	28,791	27.1	37.9	1436
03/21/18	2,657	7,150	15,749	9,807	17,682	25,556	34.1	30.9	955
03/22/18	2,513	6,857	15,274	9,370	17,007	24,644	35.6	29.4	864
03/23/18	2,522	6,932	14,419	9,454	16,664	23,873	37.2	27.8	773
03/24/18	2,507	6,814	13,356	9,321	15,999	22,677	33.7	31.3	980
03/25/18	2,335	6,416	13,025	8,751	15,264	21,776	37.9	27.1	734
03/26/18	2,671	7,397	15,743	10,068	17,940	25,811	34.4	30.6	936
03/27/18	2,349	6,713	14,533	9,062	16,329	23,595	37.2	27.8	773
03/28/18	2,435	6,716	14,476	9,151	16,389	23,627	37.8	27.2	740
03/29/18	2,703	7,260	14,728	9,963	17,327	24,691	32.4	32.6	1063
03/30/18	2,603	6,952	13,250	9,555	16,180	22,805	33.8	31.2	973
03/31/18	3,249	8,579	15,791	11,828	19,724	27,619	19.0	46.0	2116

CenterPoint Energy Minnesota Gas
NGPL Storage Costs - Assigned to Demand

PUBLIC DATA
Trade Secret Information has been Excised
Exhibit C1

EFFECTIVE NOVEMBER 1, 2018
Proposed

Total NGPL Storage
Allocate to Firm and SVDF based on sales volume
Allocate to All customers Based on Sales Volume

[TS Data begins...
..TS Data ends]

Based on Winter Sales Volumes - RATE CASE SALES

	RC 2017 Annual	RC 2017/18 Winter	Demand	Commodity	Total
SV - Firm	110,578,301	78,840,750	[Trades Secret Data begins... 		
LV - Firm	365,385	218,081			
SV - Dual Fuel	6,857,356	4,487,270			
LV - Dual Fuel	7,156,285	3,183,532			
Total	124,957,327	86,729,633			

..Trade Secret Data ends]

RATE:

	Annual	Winter	Demand	Commodity	
SV - Firm	110,578,301	78,840,750	[Trades Secret Data begins... 		
LV - Firm (MDQ=2648.7)	365,385	218,081			
SV - Dual Fuel	6,857,356	4,487,270			
LV - Dual Fuel	7,156,285	3,183,532			
Total	124,957,327	86,729,633			

..Trade Secret Data ends]

Annual Bill Impact:	UPC-annual	UPC-Winter	Demand	Commodity	Total
Residential	89.0	64.5	[Trades Secret Data begins... 		
Com-A	81.2	62.2			
C/I-B	293.9	220.3			
C/I-C	1,697.5	1,150.0			
LV-Firm	45,673.1	27,260.1			
SV-A	4,402.6	3,174.2			
SV-B	17,702.7	11,802.7			

..Trade Secret Data ends]

Note: Updated with Final Settlement forecast - 10-Yr WN (G-008/GR-17-285)

PUBLIC VERSION

Exhibit C2 – CenterPoint Energy Competitive Bypass Analysis – not included – considered Trade Secret in its entirety.

PUBLIC VERSION

Exhibit C3 – Precedent Agreement between Northern Natural Gas Company and CenterPoint Energy Resources Corp., d/b/a/CenterPoint Energy Minnesota

– not included – considered Trade Secret in its entirety.

EXHIBIT D

July 2, 2018

Re: CenterPoint Energy's Request for Change in Demand Units

PLEASE TAKE NOTICE that on July 1, 2018, CenterPoint Energy filed its request for Change in Demand Units to be effective November 1, 2018 with the Minnesota Public Utilities Commission (MPUC). True and correct copies will be on file at the Commission offices (Metro Square, Suite 350, 121 7th Place East, St. Paul, Minnesota, 55101-2147) during regular business hours or from CenterPoint Energy by contacting Marie Doyle.

This Notice is required per Minn. Rule 7825.2910, Subp. 3. Service list consists of interveners in the Company's previous two general rate cases.

If you have any questions, please contact Marie Doyle at (612) 321-5078.

CenterPoint Energy contact information:

Mail:

Marie Doyle

CenterPoint Energy

505 Nicollet Mall

PO Box 59038

Minneapolis, MN 55459-0038

Email:

Marie.Doyle@CenterPointEnergy.com

Phone:

612-321-5078

AFFIDAVIT OF SERVICE

STATE OF MINNESOTA)

) ss.

COUNTY OF HENNEPIN)

Marie Doyle, being first duly sworn on oath, deposes and says she served via e filing or caused to be served electronically on behalf of CenterPoint Energy: its Request for Change in Demand Units for the 2018-2019 heating season on the Minnesota Public Utilities Commission; on the Department of Commerce and; on the Office of the Attorney General - Residential Utilities Division; and on those on the attached service list requesting service electronically. A notification of its Request for Change in Demand Units report as described in Minn. Rules 7825.2910, Subp. 3 was served on persons on the enclosed service list requesting paper, by delivering by hand at the respective addresses on the list or by placing in the U.S. Mail at the City of Minneapolis.

_____/s/_____

Marie Doyle
Regulatory Analyst, Regulatory Services
CenterPoint Energy

Subscribed and sworn to before me
this 2nd day of July, 2018

_____/s/ Melodee Carlson-Chang_____

Notary Public

Term expires: 01/31/2020

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
David	Aafedt	daafedt@winthrop.com	Winthrop & Weinstine, P.A.	Suite 3500, 225 South Sixth Street Minneapolis, MN 554024629	Electronic Service	No	OFF_SL_15-424_GR-15-424
Tamie A.	Aberle	tamie.aberle@mdu.com	Great Plains Natural Gas Co.	400 North Fourth Street Bismarck, ND 585014092	Electronic Service	No	OFF_SL_15-424_GR-15-424
Julia	Anderson	Julia.Anderson@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota St St. Paul, MN 551012134	Electronic Service	Yes	OFF_SL_15-424_GR-15-424
Angie	Beehler	N/A	Wal-Mart	Energy Dept. 0550 2001 SE 10th St Bentonville, AR 72716	Paper Service	No	OFF_SL_15-424_GR-15-424
James J.	Bertrand	james.bertrand@leonard.com	Leonard Street & Deinard	150 South Fifth Street, Suite 2300 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-424_GR-15-424
Brenda A.	Bjorklund	brenda.bjorklund@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave FL 14 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-424_GR-15-424
William A.	Blazar	bblazar@mnchamber.com	Minnesota Chamber Of Commerce	Suite 1500 400 Robert Street North St. Paul, MN 55101	Electronic Service	No	OFF_SL_15-424_GR-15-424
C. Ian	Brown	office@gasworkerslocal340.com	United Association	Gas Workers Local 340 312 Central Ave SW Minneapolis, MN 55414	Electronic Service	No	OFF_SL_15-424_GR-15-424
James	Canaday	james.canaday@ag.state.mn.us	Office of the Attorney General-RUD	Suite 1400 445 Minnesota St. St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_15-424_GR-15-424
Leigh	Currie	lcurrie@mncenter.org	Minnesota Center for Environmental Advocacy	26 E. Exchange St., Suite 206 St. Paul, Minnesota 55101	Electronic Service	No	OFF_SL_15-424_GR-15-424

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jerry	Dasinger	jerry.dasinger@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 551012147	Electronic Service	Yes	OFF_SL_15-424_GR-15-424
Jeffrey A.	Daugherty	jeffrey.daugherty@centerpointenergy.com	CenterPoint Energy	800 LaSalle Ave Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-424_GR-15-424
Ian	Dobson	ian.dobson@ag.state.mn.us	Office of the Attorney General-RUD	Antitrust and Utilities Division 445 Minnesota Street, 1400 BRM Tower St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_15-424_GR-15-424
Marie	Doyle	marie.doyle@centerpointenergy.com	CenterPoint Energy	800 LaSalle Avenue P O Box 59038 Minneapolis, MN 554590038	Electronic Service	No	OFF_SL_15-424_GR-15-424
Ronald B.	Edelstein	ron.edelstein@gastechnology.org	GTI	1700 S Mount Prospect Rd Des Plaines, IL 60018	Electronic Service	No	OFF_SL_15-424_GR-15-424
Emma	Fazio	emma.fazio@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-424_GR-15-424
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 500 Saint Paul, MN 551012198	Electronic Service	No	OFF_SL_15-424_GR-15-424
Edward	Garvey	garveyed@aol.com	Residence	32 Lawton St Saint Paul, MN 55102	Electronic Service	No	OFF_SL_15-424_GR-15-424
Robert	Harding	robert.harding@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_15-424_GR-15-424

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Annete	Henkel	mui@mutilityinvestors.org	Minnesota Utility Investors	413 Wacouta Street #230 St. Paul, MN 55101	Electronic Service	No	OFF_SL_15-424_GR-15-424
Bruce L.	Hoffarber	N/A	U.S. Energy Services, Inc.	605 Highway 169 N Ste 1200 Plymouth, MN 55441	Paper Service	No	OFF_SL_15-424_GR-15-424
Mary	Holly	mholly@winthrop.com	Winthrop & Weinstine, P.A.	225 S Sixth St Ste 3500 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_15-424_GR-15-424
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Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	OFF_SL_15-424_GR-15-424
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_15-424_GR-15-424
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Nicolle	Kupser	nkupser@greatermngas.com	Greater Minnesota Gas, Inc.	202 South Main Street P.O. Box 68 Le Sueur, MN 56058	Electronic Service	No	OFF_SL_17-285_17-285 Official CC Service List
Roger	Leider	roger@mnpropane.org	Minnesota Propane Association	PO Box 220 209 N Run River Dr Princeton, MN 55371	Electronic Service	No	OFF_SL_17-285_17-285 Official CC Service List
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David	Patton	dpatton@mncenter.org	Minnesota Center for Environmental Advocacy	26 East Exchange Street Suite 206 St. Paul, Minnesota 55101	Electronic Service	No	OFF_SL_17-285_17-285 Official CC Service List

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Scott	Zemke	szemke@capsh.org	Community Action Partnership	of Suburban Hennepin 8800 Highway 7, Ste. 401 St. Louis Park, MN 55426	Electronic Service	No	OFF_SL_17-285_17-285 Official CC Service List