1765 Duke Street | Alexandria, VA 22314 | thermostat-recycle.org

### VIA EMAIL and US Mail

March 29, 2016

Ms. Karen Knaebel Waste Management & Prevention Division Department of Environmental Conservation One National Life Drive, Davis 1 Montpelier, VT 05620-3704

Subject: Thermostat Recycling Corporation's 2015 Annual Report

Dear Ms. Knaebel:

Since 1998. TRC's national program has collected more than **2.1 million thermostats**, diverting more than **10** tons of mercury from the waste stream. TRC continues to do more by increasing its budget, visiting more states (up 38% compared to 2014), and modernizing its work force.

You will find attached TRC's annual collection report for calendar year 2015. TRC would like to highlight some aspects of the 2015 program in Vermont:

- The program collected **2,000 thermostats in 2015**. This was an 8% decrease compared to the number of thermostats collected in 2014.
- In 2015 the program **collected 14.23 pounds of mercury** in the state of Vermont. Since 2002, the annual pounds of mercury collected in Vermont has increased by an average of 68% per year. During the same time period, the pounds of mercury collected in the nation increased by 11% per year.
- TRC's website traffic continued to increase in 2015. There was a **164% increase of visitors** from Vermont while TRC increased its total annual visitors by **71% compared to 2014.**
- The counties with the most bins returned in 2015 were **Chittenden** (21 bins), **Windsor** (13 bins), and Washington (9 bins).

If the department would like to discuss any of these items in greater detail, please do not hesitate to contact me directly at 571-302-0877.

Sincerely yours.

Ryan L Kiscaden

**Executive Director** 





an industry-funded non-profit

# **VERMONT ANNUAL REPORT**

FY 2015

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# **2015 VERMONT COLLECTIONS**

In Vermont, TRC recovered 14.23 pounds of mercury from the equivalent of 2,016 mercury thermostats. This was from 2,000 whole mercury thermostats plus 2,295 mercury switches removed from thermostats (thermostats from Vermont averaged 1.14 switches per thermostat in 2015).

TRC recovered 38% of mercury thermostats from retail locations, 35% from household hazardous waste (HHW) facilities, 25% from HVAC wholesale distributor locations, and 2% from contractor locations.

### **EXHIBIT 1: 2015 VERMONT COLLECTIONS BY BRAND**

Brand Holder	Thormostate	<u>Count</u>	<u>Pounds</u>
Brand Holder	<u>Thermostats</u>	<u>Switches</u>	<u>Mercury</u>
Burnham Holdings	6	6	0.04
Carrier	42	47	0.29
Climate Master	7	28	0.17
Empire Comfort Systems	2	2	0.01
Grainger	2	2	0.01
Honeywell	1739	1920	11.90
Hunter Fan	4	6	0.04
Invensys	5	5	0.03
ITT Corporation	3	3	0.02
Lennox	9	13	0.08
Lux Products	5	5	0.03
Marley-Wylain Company	4	4	0.02
McQuay International	8	31	0.19
Nordyne Corporation	2	2	0.01
Rheem	5	11	0.07
Sears Holdings	4	4	0.02
TPI Corporation	3	3	0.02
Trane	25	31	0.19
White Rogers	104	116	0.72
York/Johnson Controls	13	30	0.19
Non-Member Brands			
AMERICAN STABILIS	4	4	0.02
Minivector	2	2	0.01
Peerless	2	2	0.01
NOM (Manufacturer not Identifiable)			
NOM's	0	0	0.00
Loose Bulbs	0	18	0.11
TOTAL	2,000	2,295	14.23

# 2015 VERMONT COLLECTIONS

### WASTE MERCURY-ADDED THERMOSTAT MANAGEMENT

Bins with waste mercury-switch thermostats are received at the fulfillment/processing center in Golden Valley, Minnesota. The facility is owned and operated by Honeywell International under contract with TRC.

Bins are received at the loading dock and sent to the TRC processing area. The bin and plastic liner are opened and the contents are identified, sorted, and tallied. The following data is recorded for each bin returned and processed: bin number, business name (location name), city, state, zip code, date returned, number of thermostats and mercury switches by manufacturer and any non-conforming material.

The bin is returned to the location that sent it in with a new prepaid address label within 72 hours of receipt. The thermostats are stored and staged in a plastic lined carton in a storage area for final processing. The containers are dated and processed in order received, first in-first out.

The containers are returned from the storage area to the TRC processing area to have the mercury bulbs removed from the plastic housing. Universal Waste Regulations require the disposal of waste within 12 months of generation. TRC's processor requires that the disposal occur within 6 months of generation and TRC follows the more stringent requirement. Small quantities of thermostats are removed from the container, which is then closed again, and placed at the bulb removal workstation on a tray that contains any potential mercury spillage. The bulbs are removed from the thermostats and placed into a 2 quart container at the work station. If a bulb breaks and the mercury spills, the work area is designed to contain the spillage and the operators are trained in the clean-up and disposal of mercury. The TRC processing area is equipped with special mercury vacuum cleaners and the work area is vacuumed at the end of the work day to assure that any spillage is cleaned up and not left to evaporate.

The 2 quart container is emptied into a special 55 gallon drum which is labeled and dated according to regulations. The drum is sealed with a band and is only opened when contents are

# 2015 VERMONT COLLECTIONS

being added to it. Special negative pressure venting assures any fumes are drawn away and vented when the drum is opened.

The 55 gallon drum is then shipped to Veolia Environmental Services in Port Washington, Wisconsin for final processing of the mercury ampoules (switches) Veolia Environmental Services meets or exceeds all local, state, federal and EPA regulations for the management of the product. Veolia's approvals for mercury recovery/recycling include:

- EPA identification WIR000130591 (Veolia Environmental Services, Inc.)
- EPA BDAT Requirement satisfied by all recovery operations
- CERCLA (Comprehensive Environmental Response Compensation and Liability Act)
- Wisconsin Department of Natural Resources

The facilities' processing follows all EPA guidelines and regulations. TRC has a facility license from Hennepin County Minnesota for the operation of the TRC. Honeywell, Inc. has a Hazardous Waste Generator license from Hennepin County. All persons who handle mercury thermostats as part of the TRC operation receive training in the handling of Hazardous Waste and Universal Waste.

### **DIRECT MAIL**

TRC utilized direct mail throughout the year to target collection locations, HVAC contractors/technicians, and household hazardous waste (HHW) facilities.

### **TRC Collection Locations & Wholesale Distributors**

- To encourage collection point participation and to stimulate the timely return of TRC collection containers, TRC mailed reminder postcards (Exhibit 2) to collection points that had not returned a TRC container within the last 12 months (in accordance with Universal Waste Regulations). TRC mailed 122 reminders in April, 100 in August, and 99 in November.
- On 7/9 TRC sent mailed correspondence (Appendix 1) to all contractor, retail and household hazardous waste collection locations in TRC's program to offer a full-color, double-sided 18x24 poster (Exhibit 3). Additionally, TRC sent a similar letter (Appendix 2) to wholesale distributor collection locations to offer the same poster, as well as the branded merchandise display to showcase the TRC recycling bin (Exhibit 4). TRC received requests for 20 posters and one request for a merchandise display.

### **EXHIBIT 2: REMINDER POSTCARD**

### Side 1:



### Side 2:



### **EXHIBIT 3: 18X24 POSTER**

### Side 1:



### Side 2:



### **EXHIBIT 4: TRC MERCHANDISE DISPLAY**



### **HVAC Contractors/Technicians**

TRC purchased all HVAC contractor lists from Hoover's, narrowing the results by SIC codes relating to the HVAC industry.

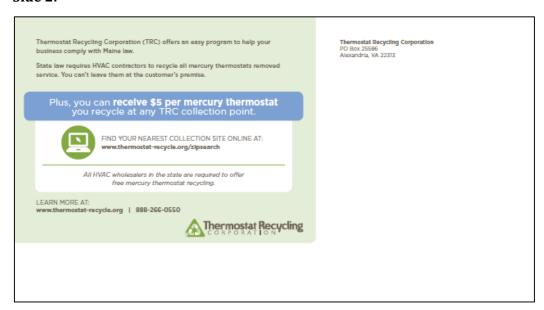
- TRC mailed an 11x6 sized postcard to 157 Vermont HVAC contracting business contacts with less than 10 employees in September and November (Exhibit 5). The messaging targeted on an emotional appeal to fathers, since the industry is predominantly male, coming from their children in an appeal to "Get with the program." The postcard also mentioned the \$5 incentive.
- In December TRC mailed a full color letter to 148 Vermont HVAC contracting business contacts with less than 11 employees. (Appendix 3)
- In December TRC mailed holiday cards to 26 Vermont HVAC contractors with 10 or more employees. The card was holiday themed and offered the gift of a free mercury thermostat recycling bin. (Exhibit 6)

### **EXHIBIT 5: 11X6 POSTCARD**

### Side 1:



### Side 2:



### **EXHIBIT 6: HOLIDAY CARD TO CONTRACTORS**

### Outside (front and back of folded card):



### Inside:



### **ADVERTISING**

TRC's two primary advertising targets remain HVAC contractors/technicians and HVAC wholesale distributors. For the contractors/technicians segment, TRC focuses on residential and light commercial contractors because of their relatively high level of hands-on contact with waste mercury thermostats. The second segment of focus is HVAC wholesale distributor locations as they remain the most convenient location for the majority of Vermont-based technicians/contractors to purchase replacement thermostats and recycle waste mercury thermostats.

Homeowners remain a secondary market as they represent a small segment of the market (+/-10%). Since replacing a mercury thermostat is a rare event (if ever) for a consumer, TRC derives the greatest impact/value from its marketing activities by concentrating on the channel segment that conducts the vast majority of repeat thermostat replacements. However, at the recommendation of Jennifer Holiday from the Chittenden Solid Waste District, in TRC explored a new avenue to advertise to homeowners, Front Porch Forum, as detailed below.

TRC's 2015 advertising campaign continued to focus mostly on "easy and free" and "It's the law" messaging (where applicable, as only a limited number of states ban the disposal of mercury

thermostats in solid waste and/or require HVAC contractors to recycle all mercury thermostats removed from service). TRC also focused on the \$5 incentive messaging for local advertisements.

The purpose of TRC's advertisements were two-fold: 1) continue to build brand/program awareness and 2) increase program participation by raising awareness of specific legal obligations to recycle and the ease of recycling.

### **Print Advertising**

TRC continued print-based advertisements in the following national/regional HVAC trade publications:

- *Uncle Henry's*, weekly consumer publication with distribution in more than 260 stores in Vermont. TRC advertised during the month of November for their recycling themed month. This included an online display ad on their website for the full month (Exhibit 7), a half page ad each week (Exhibit 7), and a 15 second live radio read each week (Exhibit 8). The main messaging of the ads was the \$5 incentive.
- **HVAC Insider New England**, a regional publication which has a monthly circulation of 9,000 contractors, technicians, and wholesale distributors in New England, including Vermont. TRC ran a 2-color 1/2 page advertisement in the May, June, November and December issues (Exhibit 9).
- *Distribution Center Magazine*, the exclusive publication of HARDI, with more than 11,000 bi-monthly subscribers. TRC ran a full-color 1/4 page advertisement in May and December promoting the Big Man on Planet competition. (Exhibit 10)
- *HVACR Business Magazine*, a national publication with approximately 34,000 qualified subscribers, of which approximately 1,544 are in New England. TRC ran a full color 1/4 page advertisement in January, March and July. (Exhibit 11)

### **EXHIBIT 7: UNCLE HENRY'S ADVERTISING**

**Print Ad:** 

# Thermostat Recycling MAINE AND VERMONT RESIDENTS RECYCLE MERCURY THERMOSTATS, GET MONEY! Visit thermostat-recycle.org/zip to find your nearest collection locations. \*\$5 instant in-store credit at participating ME and VT retail locations, or \$5 mail-in coupon at participating ME and VT household hazardous waste or HVAC wholesale locations.

### Digital Ad:



### **EXHIBIT 8: UNCLE HENRY'S 30 SECOND RADIO SCRIPT**

America Recycles Day is November 15<sup>th</sup>! Help protect the environment by recycling mercury thermostats. Residents of Maine and Vermont are eligible to receive a \$5 incentive for each mercury thermostat recycled at participating locations.

Visit thermostat-dash-recycle-dot-org to find your nearest participating collection site.

### **EXHIBIT 9: HVAC INSIDER NEW ENGLAND AD**



### **EXHIBIT 10: DISTRIBUTION CENTER MAGAZINE ADS**

### May:



### December:



### **EXHIBIT 11: HVACR BUSINESS MAGAZINE AD**



### **Digital Advertising**

TRC continued the use of rotating banner advertisements in 2015, with changes in scheduling and scope and the addition of new outlets.

TRC follows the national trend of analyzing advertisement success by measuring each advertisement's impression and click-through rate. An impression is a measure of the number of times an ad is displayed, and a click-through rate (CTR) is the number of times a click is made on the advertisement divided by the total impressions.

TRC's new advertising in 2015 included:

• Front Porch Forum, a Vermont-specific email list serve with individual forums, each of which generates multiple newsletters each week. TRC ran an ad targeted to more than 55,000 subscribers from Chittendon County the week of September 25<sup>th</sup>, and again the week of October 5<sup>th</sup> (Exhibit 12). The ad highlighted the \$5 incentive and directed visitors to a custom-made landing page within TRC's website that further explained the incentive

- program (Exhibit 13). The September ad received 94 unique clicks, and the October one received 182 unique clicks.
- ACHR News' AHR Wrap Up Enewsletter, sent to 12,000 opt-in subscribers. This is an annual
  email sent in January at the conclusion of the Air-Conditioning, Heating, Refrigerating
  (AHR) Exposition, the largest HVAC industry trade show. TRC ran a Medium Rectangle ad
  within the email that received a 0.72% CTR. (Exhibit 14)
- *Distribution Center's* Enewsletter, sent to 4,000 weekly opt-in subscribers. TRC ran a Medium Rectangle ad in February, March and June receiving an average CTR of 2.5%. (Exhibit 14)
- NATE Enewsletter, sent bi-monthly to 31,900 opt-in subscribers. TRC ran a text ad that received a 0.14% CTR.

### **EXHIBIT 12: FRONT PORCH FORUM AD**

### SAVE MONEY, MAKE MONEY, PROTECT THE ENVIRONMENT

Installing a programmable thermostat can save around 10% a year on heating bills. And if the thermostat you replace contains mercury you can receive \$5 for recycling it, which also helps prevent mercury pollution.

http://www.thermostat-recycle.org/news/vermont

### **EXHIBIT 13: FRONT PORCH FORUM LANDING PAGE ON TRC'S WEBSITE**



### **EXHIBIT 14: ACHR NEWS AND DISTRIBUTION CENTER ENEWSLETTER AD**



TRC also continued digital advertisements on the following HVAC industry websites below:

OESP Dedicated Eblast, a digital piece emailed to oil and energy service professionals
predominantly from New York, Connecticut, Maine, Maryland, Massachusetts, New
Hampshire, New Jersey, Pennsylvania, Rhode Island, Vermont and Virginia. The email was
exclusively about TRC's program and offered a limited-time offer to sign-up for a free TRC

- bin. The email was delivered to 1,674 subscribers in April, receiving a 3.6% CTR; and to 1,623 subscribers in September, receiving a 1.4% CTR. (Appendix 4).
- OESP Advantage News Brief, a weekly email with the same subscribers listed as above (OESP Dedicated Eblast). TRC ran a sponsored content ad for 13 consecutive weeks
   October – December which resulted in an average CTR of 0.2%. (Exhibit 15)
- HVACR Business "Ahead of the Curve" Enewsletter, a monthly newsletter that reaches
  approximately 9,000 opt-in readers each month. TRC ran a banner ad in July, August,
  November and December (Exhibit 16). The average CTR was 3.0%.
- HVACRBusiness.com, an HVAC publication website with 14,000 monthly visitors. TRC ran a banner ad in February and July that resulted in 92,848 impressions and an average CTR of 0.9%. (Exhibit 17)
- Contracting Business Magazine's dedicated Email Blast, which was sent twice with different messaging to opt-in subscribers in states with disposal bans, including Vermont. The January mailing was sent to 5,980 subscribers and received a 25% open rate and a 0.5% CTR (Appendix 5), while the June mailing was sent to 8,970 subscribers and received a 13% open rate and a 0.5% CTR (Appendix 6).
- ACHRNews.com, a website that assists the decision-makers from all branches of the HVAC industry including contractors, manufacturers, distributors, parts and supply wholesalers, and service companies. More than 241,852 HVACR professionals visit the website every month, totaling more than 308,911 monthly website visits. TRC ran a Topic Sponsorship ad in January, February and September that resulted in an average 0.14% CTR. (Exhibit 18)
- ACHR Newsletter, a weekly email blast with more than 10,000 subscribers. TRC ran a banner ad for four issues in April and four issues in October with an average CTR of 4.7%. (Exhibit 18)
- HVAC-Talk.com, an online forum that averages more than 300,000 monthly visitors. TRC ran a banner ad in February, March and July which resulted in 291,706 total impressions and an average CTR of .03%. (Exhibit 17)

### **EXHIBIT 15: OESP ADVANTAGE NEWS BRIEF SPONSORED CONTENT AD**

### SPONSORED CONTENT

### Promoted by

- Thermostat Recycling Corporation makes disposal of mercury thermostats easy and free.
- Several states prohibit the disposal of mercury thermostats in the trash.
- Find your nearest mercury thermostat collection site for free disposal.
- Sign up for Thermostat Recycling Corporation's program to directly participate as a collection site.
- Learn more about how Thermostat Recycling Corporation's program works.



### **EXHIBIT 16: HVACR BUSINESS "AHEAD OF THE CURVE" ENEWSLETTER AD**



### **EXHIBIT 17: HVACRBUSINESS.COM AND HVACT-TALK.COM AD**



### **EXHIBIT 18: ACHRNEWS.COM TOPIC SPONSORSHIP ADS**





Exhibit 19 presents benchmark data from Google's Display Benchmarks tool on average digital advertising CTR's in the U.S. by year. It shows that the highest national average CTR in 2015 was 0.09%, so TRC's CTR performance exceeded the national average.

### **EXHIBIT 19: GOOGLE DISPLAY'S BENCHMARK TOOL**



Additionally, the current average open rate for emails is 14%, and the average CTR in emails is  $1.6\%^{1}$ , which TRC generally also exceeds.

### **Google AdWords**

Since 2011 TRC has deployed a Google AdWords campaign that geo-targets contractors/technicians and consumers (homeowners) in states with mercury thermostat disposal bans, including Vermont (Exhibit 20). Advertisements appear on Google search results pages after an individual searches terms related to TRC's mission (E.g. thermostat replacement, contracting recycling regulations, mercury thermostat recycling, programmable thermostats, etc.).

TRC continued this campaign in 2015, running it the duration of the calendar year. This is TRC's preferred option to reach consumers because of the campaign's extensive and targeted reach.

The Vermont campaign focused on the \$5 incentive and yielded 120,370 impressions with an average CTR of 0.5%.

<sup>&</sup>lt;sup>1</sup> "M+R Benchmarks 2015." *M+R and NTEN's 2015 Nonprofit Benchmarks Report.* 1 May 2015: 57. Print.

### **EXHIBIT 20: GOOGLE ADWORDS LANDING PAGE**



### **EARNED MEDIA**

In 2015 TRC continued to enjoy positive and frequent coverage within the industry trade press, appearing more than 20 times through a variety of publications. TRC issued many media releases that were published, generating additional exposure for the program.

Notably, TRC continued to receive coverage and editorial pieces in industry leading publications such as:

- The Air Conditioning and Refrigeration (ACHR) News (370,378 reach), including a front page editorial article (Exhibit 21)
- Distribution Center (11,000 circulation)
- Contracting Business (40,000 circulation)
- HVAC-Talk.com (408,769 monthly unique browsers)

 Wholesale distributor's on-hold phone messaging, including Johnstone Supply and Standard Supply

Additionally, two of TRC's employees, Ryan Kiscaden and Christyn Zehnder, were voted onto HARDI's first 40 under 40 list. The list recognizes the HVAC industry's top performers and rising stars who are younger than 40. The list will be published in the spring of 2016 in Distribution Center Magazine. There were hundreds of eligible HARDI members considered, making this a highly competitive group.

### **EXHIBIT 21: ACHR NEWS FRONT PAGE EDITORIAL ARTICLE**



### TRC WEBSITE

TRC's website data is calculated through Google Analytics, and website traffic continued to increase in 2015. TRC increased its total annual visitors by 71% compared to 2014. There was a 164% increase of visitors from Vermont. The increase in traffic reflects the impact of paid trade channel advertising, the Google AdWords campaign, and search engine optimization efforts.

In May TRC implemented an automated welcome email for collection sites that sign-up for the program through TRC's website. In November TRC transitioned its current website into a responsive website, meaning it is fully optimized for greater visibility across all devices including mobile and tablets.

TRC's social media presence increased as well. The TRC Twitter account saw a 42% increase in number of followers in 2015, and its Facebook page enjoyed an 83% increase of page "Likes."

# TRADE SHOWS, CONFERENCES AND PRESENTATIONS

TRC staff attended, exhibited and/or presented at the following regional and national shows pertaining to Vermont:

- January 13th: Honeywell International Webinar (NEW)
  - Ryan Kiscaden presented a TRC Webinar to Honeywell International to an audience of 15 contractors. The webinar focused on ways for contractors to profit from recycling by using other industry items to increase their profitability.
- January 25th 28th: Air-Conditioning, Heating, Refrigerating Exposition.

  Chicago, IL
  - TRC staff attended and exhibited at the AHRI (Air-Conditioning, Heating, and Refrigeration Institute) Expo in Chicago. The show brought in over 2,000 exhibitors and 60,000 HVAC/R professionals, including more than 1,171 in the New England region.
- February 9<sup>th</sup> 13<sup>th</sup>: Association of Energy Service Professionals (AESP) Trade Show *Orlando, FL*

AESP is the premier organization for professionals in the energy efficiency industry. Over 300 industry professionals attend the event including utility professionals and industry advisors/implementers. TRC staff attended this show.

### • February 12th: Product Stewardship Institute Webinar (NEW!)

TRC staff presented a webinar through the Product Stewardship Institute entitled "Connecting Rural HHW Program Managers to Manufacturer-Funded Take-Back Programs" to an audience of 25 professionals.

### February 26th: AESP Brown Bag Webinar (NEW!)

TRC staff presented a Brown Bag Webinar to AESP on recycling programs for utilities and utility implementers. The webinar was added to TRC's YouTube page in April and received 33 views.

# • March 15<sup>th</sup> - 18<sup>th</sup>: ACCA and the IE3: Indoor Environment & Energy Expo Dallas, TX

Co-presented by Air Conditioning Contractors of America (ACCA), this expo is the largest marketplace for the indoor environmental and energy services contracting industry. TRC staff exhibited and promoted the program to attending HVAC contractors.

### • March 27th: YouTube Video Presentation (NEW!)

TRC created and uploaded a video presentation entitled "Mercury Thermostats: A Historical Overview and Review of Current Legislation" to TRC's YouTube channel. The video received 39 views in 2015.

### • March 25th: ACCA Town Hall Webinar (NEW!)

A Town Hall Webinar was presented to ACCA members regarding the TRC Program.

### • April 12th-14th: HARDI FOCUS Marketing & Sales Conference (NEW!)

Charleston, SC

TRC staff attended this conference where marketing and sales professionals learn from joint sessions that help them align their strategies and improve synergy between departments.

### May 18th – 20th OESP Road Show

Hershey, PA

An annual convention with over 2,500 attendees representing close to 300 companies across New England. TRC staff again exhibited at this show.

### • May 28th: ACCA Webinar with Dynatemp (NEW!)

TRC teamed up with Dynatemp, a refrigerant manufacturer and recycler, to present a Webinar on environmental compliance to the ACCA.

### • September 14th - 16th: NAHMMA National Conference

Austin, TX

TRC staff attended the conference and sponsored the silent auction. The conference facilitated peer-group interaction and exchange of ideas and information relating to hazardous materials management. TRC staff gave a presentation on techniques for marketing to target audiences, which was attended by more than 30 HHW professionals.

### • October 6th: EEBA Excellence in Building Conference & Expo (NEW!)

Denver, CO

After joining the association and speaking with their Executive Director, TRC staff attended the show for the first time. The conference focused on ways for both residential/commercial HVAC contractors and home performance contractors to work together.

### • October 7th: IFMA World Workplace Conference & Expo

Denver, CO

Held annually, IFMA's World Workplace meets the educational and networking needs of professionals who support the built environment. IFMA promotes World Workplace year-round to more than 23,000 members in 85 countries; plus an additional 200,000 workplace professionals. TRC staff attended for the first time.

### • December 5th - 8th: HARDI National Conference

Orlando, FL

TRC staff again exhibited and participated in the "Booth Program," which provides for 1-on-1 sessions with senior executive staff from HARDI member companies. This event targeted representatives of approximately 80% of the wholesale market for HVACR products. TRC also presented its annual "Big Man on the Planet Award."

### **HVAC WHOLESALE DISTRIBUTOR OUTREACH**

### **Ferguson Enterprises Onboarding**

Ferguson Enterprises is the number one wholesaler in the country, owning more than 200 HVAC locations nationwide. Ferguson made a business decision to engage both HVAC and blended Ferguson stores regardless of state mandatory programs. As a result of this initiative Ferguson signed up 90 Ferguson Enterprise stores for the program, three of its Lyon Conklin Co. stores, and two of its Air Cold Supply stores. In addition, Ferguson purchased a current HVAC distributor whom uses the TRC program, Redlon and Johnson.

Ferguson sent an email in July to 15,910 subscribers announcing its partnership with TRC and highlighting the program (Exhibit 22).

Due to these efforts, collections from Ferguson owned distributors increased 37% percent in 2015.

### **EXHIBIT 22: FERGUSON NATIONAL EMAIL**



### **Big Man on Planet Competition**

TRC partnered with HARDI for the fourth annual Big Man on Planet (BMOP) competition. The competition was restructured to allow for four distributor winners (as opposed to three in 2014) and included a \$500-\$1,000 employee incentive to the top four branch locations within each tier. The restructuring was implemented to provide a more fair tiered system, putting distributors with a similar number of branch locations in competition with one another. In April TRC mailed an invitation to the executives of 357 HARDI member principle contacts encouraging their participation in the program (Exhibit 23). The competition ran May 1st – October 31st and participating locations shipped a total of 432lbs of mercury during the competition.

### **EXHIBIT 23: BMOP INVITATION TO HARDI MEMBERS**

### **Outside:**



### Inside:



### **Location calls**

TRC staff made 34 phone calls to collection locations in Vermont that hadn't returned a bin in more than 12 months. Calls reminded locations of the need to stay in compliance with accumulation time limits. TRC staff also offered to replace lost shipping labels, order FedEx Ground pickups for the bins, or provide free promotional materials. See Appendix 7 for a list of locations contacted.

### **Site Visits**

A total of 44 Vermont collection locations were visited by TRC staff in several key markets. The majority of locations visited were those that had not returned a bin within the past 12 months. Visits were conducted to ensure location staff was knowledgeable about the program, prepare the bin and schedule a shipment if applicable, and supply any other necessary materials. See Appendix 8 for a complete list of locations visited.

### **Merchandise Displays for TRC Bins**

In 2014 TRC developed branded merchandise displays for its recycling containers. The purpose of the displays is to enhance the visibility and accessibility of the program to contractors at HVAC wholesale locations. TRC created a special version for Maine and Vermont that highlights the \$5 incentive. Throughout the year TRC distributed free branded cardboard displays to HVAC wholesale distributor collection locations to showcase the TRC container (Exhibit 4).

In 2014 when TRC last ran data, the five largest HVAC wholesalers using the TRC merchandise display (Johnstone Supply, R.E. Michel, CC Dickson, Gustave Larson, and US Air Conditioning Distributors) collectively had seen a 25% increase in pounds of mercury recovered and a 45% increase in frequency of TRC bin returns year-to-date. Therefore, TRC plans to continue providing and encouraging the use of merchandise displays at HVAC wholesalers to help increase thermostat collections.

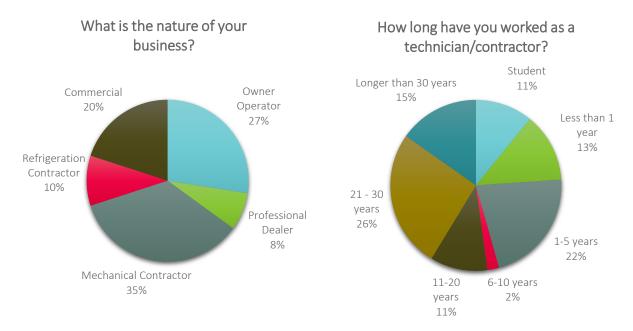
### **HVAC TECHNICIAN SURVEY**

TRC hired a third-party to create a contractor behavior survey to collect first-hand accounts about recycling practices and compliance patterns of technicians as well as company level acceptance/resistance to compliance. The technician survey was conducted in-person by TRC staff and administered via touch screen devices at several HVAC trade shows nationwide, including the Torrco Annual trade show in Connecticut and the GasNetworks show in Massachusetts. The surveys were initiated by asking contractors to take a brief five minute survey regarding recycling behavior for a chance to win a Bosch Tool.

If a technician indicated interest in participating they were handed the survey in the form of a touch-screen tablet which had the survey questions already displayed for convenience. Survey participation was incentivized by entry into a prize raffle for a Bosch tool give-away. The survey had 46 respondents, and while it included contractors from several states, generally contractor behavior tends to be similar nationwide.

### Demographic

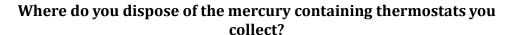
The first questions asked of the technicians were to determine their demographic:

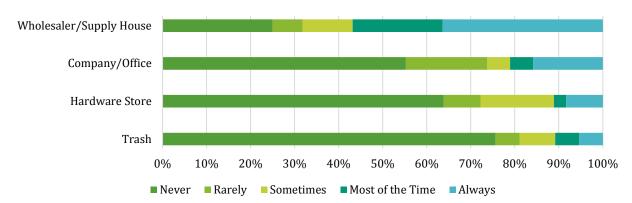


The demographic data shows that there was a widely varied mix of business sectors and experience levels. This means that the findings from the survey can be applied generally without a need for demographic qualifiers. The largest business sector was Mechanical Contractor followed by Owner Operator. These two sectors comprised 62% of the responding technicians. The experience range of the respondents was diverse, reflecting a balance of both new and experienced technicians.

### **Disposal**

To better understand where technicians dispose of mercury thermostats the following question was posed:





The above chart shows that the main location for the disposal of mercury containing thermostats is at the wholesaler. It also points out that roughly 25% of technicians do at least occasionally throw the thermostats in the trash. The data shows that when technicians do dispose of the mercury containing thermostats that they generally take them to the correct place, the wholesaler, but it also shows that there is room for improvement in keeping the thermostats out of the trash.

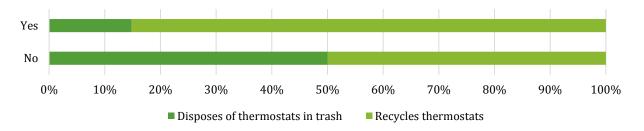
The survey then inquired about what internal mechanisms employers might be using to encourage technicians to recycle thermostats:

Are you required by your employer to recycle mercury containing thermostats?



The fact that only 71% of employers require their technicians to recycle mercury containing thermostats might explain why 25% of technicians may occasionally dispose of them in the trash. In order to verify this a cross reference was drawn between whether employers require recycling and technicians that throw away thermostats in the trash.

Are you required by your employer to recycle mercury containing thermostats?

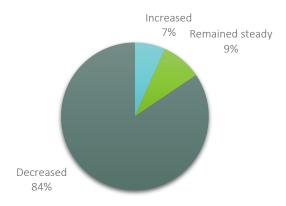


The above chart shows that 85% of technicians whose employer requires recycling of mercury containing thermostats actually recycle. By contrast, only 50% recycle without employer requirement. This strongly suggests that employer policies do have a substantive impact on recycling by employees.

### **Mercury Containing Thermostat Prevalence**

In an effort to determine how many mercury containing thermostats are still in use and whether the number in use has significantly decreased the following question was posed:

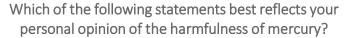
Would you say that during the time you have worked as a technician/contractor the number of mercury containing thermostats you encounter has...

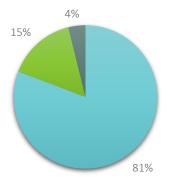


When asked how the number of mercury containing thermostats encountered during their career had changed most technicians felt that there had been a decrease. This leads to the conclusion that the number of available thermostats has also decreased.

### **Environmental Concern**

To gauge the level of which technicians are concerned about the environment and how mercury plays in to that the following question was asked of technicians:





- Mercury is very harmful and we need to do more to keep it out of the environment.
- I don't know. I have no opinion about the harmfulness of mercury.
- I don't think it is very harmful.

The above chart identifies that most technicians feel that mercury is very harmful and needs to be kept out of the environment. This suggests that a campaign that highlights the negative impact that mercury has on the environment and draws the connection to how technician recycling can help reduce these impacts may be an effective way to boost participation.

### **Conclusions**

The majority of technicians surveyed realize that mercury is harmful and needs to be kept out of the environment. However, 25% of technicians still dispose of mercury containing thermostats in the trash. Through this survey it is also known that over a quarter of technician employers do not require that their technicians recycle mercury containing thermostats. This suggests that TRC should work with employers to educate technicians on the program and encourage employers to require that mercury containing thermostats are disposed of properly. Since most technicians personally believe that mercury is bad for the environment creating an awareness campaign educating technicians on the importance of recovering mercury containing thermostats will aid in increasing participation. See Appendix 9 for survey raw results.

### **HVAC CONTRACTOR OUTREACH**

TRC staff helped develop a draft model HVAC contractor environmental policy and shared it with the trade group, ACCA (Appendix 10). TRC's goal is to work with ACCA and other trade groups to provide this template as a service for contractor's employee handbooks.

### **CONSUMER OUTREACH**

### **Brochures**

In November TRC developed a tri-fold brochure specifically geared toward consumers in Maine and Vermont (Exhibit 24). The brochure highlights the \$5 incentive, includes information on how to safely dispose of mercury thermostats and where to do so. The brochure PDF is now available on TRC's website as a promotional toolkit download, and hard copies are available by request.

TRC also provided 1,000 brochures to Vermont DEC and Efficiency Vermont to use at their events. Additionally, TRC provided Efficiency Vermont with program content to add to their website, as well as sample contractor obligation language.

### **EXHIBIT 24: MAINE & VERMONT TRI-FOLD BROCHURE**

### **Outside:**



### Inside:



## PROGRAM EDUCATION AND OUTREACH

### **Opinion Editorial**

TRC created an opinion editorial titled "A Simple Question to Help Keep Mercury out of Vermont's Environment" and sent to Vermont DEC to edit and provide input (Appendix 11). The purpose of the article was to raise consumer awareness of mercury thermostat recycling and why it's important. It was also intended to pressure generators of waste mercury thermostats, asking consumers to hold their contractors accountable for recycling old mercury thermostats when they upgrade to new ones. The intent was to pitch the article to local publications in September at the start of heating season, but feedback wasn't received in time and instead TRC will wait to publish it in 2016.

### HOUSEHOLD HAZARDOUS WASTE FACILITY OUTREACH

In August TRC collaborated with Vermont DEC to provide program information and free collateral to the department's district alliance list serve. The department sent an email offering household hazardous waste (HHW) facilities a free TRC recycling bin and an 18x24 poster (Exhibit 3). The email also encouraged recipients to respond to TRC with feedback on what materials would be useful at HHW's for raising visibility of thermostat recycling. This spurred a discussion between TRC and Jennifer Holliday of the Chittenden Solid Waste District, who suggested TRC advertise with *Front Porch Forum* as detailed in the Advertising section above.

In September TRC developed a tri-fold brochure specifically for HHW's to target their customers (Exhibit 25). It included information on how to locate HHW facilities nation-wide using TRC's website and information on how to properly prepare to dispose mercury thermostats. The brochure PDF is now available on TRC's website as a promotional toolkit download, and hard copies are available by request.

## PROGRAM EDUCATION AND OUTREACH

### **EXHIBIT 25: HHW TRI-FOLD BROCHURE**

#### **Outside:**



### Inside:



## PROGRAM EDUCATION AND OUTREACH

### **UTILITY PROGRAM/IMPLEMENTOR OUTREACH**

The TRC staff engaged with the industry leading company, Cadmus to produce a report identifying current demand response projects. This report was able to show TRC which implementers had current projects of demand response that involved thermostat replacement components. TRC focused efforts on these implementers as a source for large thermostat replacement in areas such as low-income and multi-family.

TRC staff wrote model utility implementer RFP requirements to share with utility companies (Appendix 12). The focus of the model is to help utilities expand environmental compliance requirements for their implementers. This language would essentially be a term of agreement between the utility company and the hired implementer. TRC also began engagement with two non-TRC members interested in the recycling mercury issue, ecobee and NEST, by submitting to them MOU's. All parties involved hope to do more with the TRC program.

TRC also engaged utility implementers who are members of Association of Energy Service Professionals (AESP). In May TRC sent an email to AESP's subscriber list to remind them of their regulatory obligations and offer them a free TRC recycling container (Appendix 13). TRC sent a follow up email in August (Appendix 14). The email in May received a 16% open rate and the one in August received an 18% open rate. TRC did not receive any requests for the free recycling bin offer.

## PROGRAM EXPENSES

Below is a summary of TRC's national program expenses for 2015. A copy of TRC's 2014 IRS Form 990 is available by request.

**EXHIBIT 26: 2015 PROGRAM ADMINISTRATIVE EXPENSES** 

Program Component		2014		2015	% Change
TRC Staff and Administration	\$	593,631	\$	625,205	5%
Recycling Costs	\$	356,043	\$	347,555	-2%
Incentive/Promotional Payments	\$	47,712	\$	42,224	-12%
New Collection Containers	\$	15,108	\$	10,960	-27%
Travel	\$	70,120	\$	81,152	16%
Legal	\$	40,373	\$	21,228	-47%
Direct Expense for Marketing & Outreach	\$	289,347	\$	277,995	-4%
Total (expenses)	\$1	L,412,333	\$1	L,406,319	0%

Compared to last year, variances in these program components were flat. Causes for changes include:

- Recycling Costs: A decrease in whole thermostats processed as compared to 2014.
   Recycling costs are directly related to how many whole thermostats are collected at TRC's processing facility in Golden Valley, MN. The program's collections decreased by a little over 2%.
- Incentive/Promotional Payments: Incentive payments in Maine were flat. In Vermont they were up with more Retailers and Wholesalers participating. California incentive expenses were down slightly, and Illinois promotional payments were down significantly due to a large wholesaler choosing not to participate in an incentive program.
- **New Collection Containers:** Orders were down 27%. TRC expects a continued decrease in container orders because the program is operating in a mature collection environment and available new locations to collect are decreasing.
- **Travel:** The Director of National Accounts spent more than 60% of his time attending trade shows, site visits, and attending meetings with key corporate contacts. TRC visited 22 states, up 38% compared to 2014.

## PROGRAM EXPENSES

• **Direct Expense for Marketing and Outreach:** The category used for Marketing Consulting was down considerably compared to 2014 due to the Director of Marketing and Communications taking on more responsibility. TRC also spent less on retail displays compared to 2014. This is as a result of declining available locations which were willing to accept merchandising displays for their businesses. Lastly, both Advertising and Graphic Design increased as TRC created its new 2016 marketing campaign, "Recycle every mercury thermostat, every time".

#### **EXHIBIT 27: 2015 PROGRAM EXPENSES WITH VERMONT SPECIFIC COSTS**

Category	•	Total Expenses	tal Expenses National			VT
TRC Staff and Administration	\$	625,204.88	\$	469,218.76	\$	12,884.25
Recycling Costs	\$	347,555.25	\$	199,057.25	\$	3,500.00
Incentive/Promotional Payments	\$	42,224.42	\$	-	\$	5,010.00
New Collection Containers	\$	10,960.00	\$	10,960.00	\$	1
Travel	\$	81,152.16	\$	42,928.84	\$	2,367.43
Legal	\$	21,228.28	\$	3,104.90	\$	51.37
Direct Expense for Marketing & Outreach	\$	277,994.50	\$	147,352.68	\$	9,363.05
Total (expenses)	\$	1,406,319.49	\$	872,622.43	\$3	33,176.09

• TRC Staff and Administration: On July 1st 2015, TRC changed policy regarding tracking of employee's time worked. This procedural change was predicated by state specific statutory regulations for TRC, particularly requirements on TRC to report costs associated with its employee's time allocated to state specific activities. This policy change was for all TRC employees, including those who were exempt and non-exempt. The procedure was implemented starting in July to offset this requirement. Although not a perfect subset of data, the hours worked (as a percentage) were then mirrored to reflect employee's time worked for the first half of the year. The decision to mirror time worked was determined due to the inaccuracies of having each employee go back to the start of the year and identify their hours worked by state, particularly for those employees whom were exempt. TRC acknowledges that it may under-estimate the hours worked in the state for 2015.

## **PROGRAM EXPENSES**

- However, all new employees after July 1st 2015 and any time entered for 2016 will accurately capture each employee's actual time worked by state.
- New Collection Containers: Fulfillment of new collection containers is done annually at
  TRC's processing facility in Golden Valley, MN. TRC does not currently allocate the costs of
  new containers to specific states, instead choosing to keep this in one cost center and
  including any costs from an order for containers in "Recycling Costs". In 2015, Vermont
  ordered 0.47% of all new container orders.

This section of the report examines the annual performance of the thermostat collection recycling program in terms of bins, thermostats, and mercury collected as well as the year over year progression of the program.

TRC notes, that the mercury auto switch (ELVS) program collections have been trending downward or flat at best in recent years in Vermont. According to a recent report<sup>2</sup>, "they have not been placed in vehicles since model year 2003." Mercury switch thermostats have not been sold since the mid 2000's nor installed legally in many states. Moreover, many were replaced with non-mercury units because electronic programmable thermostats had become available many years earlier. Thus, given the correlation of neither discontinued product being placed in the market for 10 or more years, TRC results will reflect similar indicators from the mercury auto switch program.

### PROGRAM PERFORMANCE OVER TIME

On average, the program has **collected 11.7 pounds of mercury** and **1,575 thermostats per year** since 2002. In 2015 the program **collected 14.23 pounds of mercury from 2,000 thermostats**, a decrease from the previous year of 7.5% in pounds of mercury and 7.8% in thermostats. Figure 1.1 displays the total number of bins collected, the total number of thermostats, and the total pounds of mercury collected in the state since the beginning of the program.

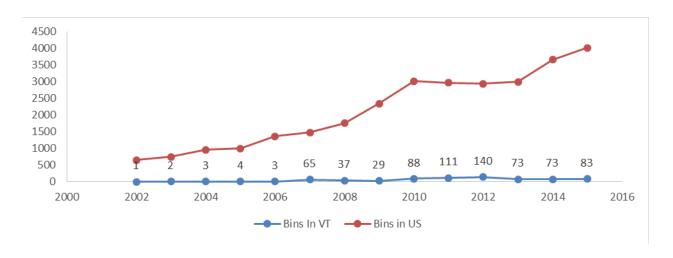
 $<sup>^2</sup>$  Maine Department of Environmental Protection. Implementing Product Stewardship in Maine, Jan. 2016. Web. 1 March 2016.

### FIGURE 1.1: PROGRAM PERFORMANCE OVER TIME

Year	Number Bins	Number Stats	Lbs Mercury
2002	1	54	0.43
2003	2	194	1.59
2004	3	151	1.20
2005	4	372	3.01
2006	3	223	2.00
2007	65	1,553	11.14
2008	37	1,367	9.96
2009	29	1,890	13.64
2010	88	3,349	24.51
2011	111	3,574	25.38
2012	140	3,036	25.82
2013	73	2,111	15.48
2014	73	2,169	15.39
2015	83	2,000	14.23
Average	50.9	1,574.5	11.7
Total	712	22,043	164

Figure 1.2 graphically displays the number of bins collected in the state over time as well as the total number of bins collected in the US over the same time period. The figure shows that the number of bins collected annually increased significantly from 2006 to 2007 (3 bins in 2006 to 65 bins in 2007) and hit a high mark in 2012 with 140 bins, since 2012 the number of bins collected annually has been between 70 and 85.

FIGURE 1.2. BINS COLLECTED OVER TIME IN STATE AND NATIONALLY



In VT the **pounds of mercury collected in 2015 decreased by 8% over 2014 levels**. Since 2002, the annual pounds of mercury collected in VT has increased by an average of 12%. During the same time period, the pounds of mercury collected in the nation increased by 11% per year. Figure 1.3 displays the total number of pounds of mercury collected in the state over time as well as the year over year percent increase (or decrease) in the state and the US as a whole.

FIGURE 1.3: POUNDS OF MERCURY COLLECTED IN PROGRAM AND YEAR OVER YEAR CHANGES IN STATE AND US.

Year	Total Lbs Hg	% Change State	% Change US
2002	0.43	N/A	13.7%
2003	1.59	267%	11.0%
2004	1.20	-25%	17.0%
2005	3.01	152%	11.1%
2006	2.00	-34%	32.1%
2007	11.14	458%	2.0%
2008	9.96	-11%	16.3%
2009	13.64	37%	16.3%
2010	24.51	80%	26.1%
2011	25.38	4%	3.6%
2012	25.82	2%	-5.3%
2013	15.48	-40%	-4.8%
2014	15.39	-1%	12.9%
2015	14.23	-8%	-1.4%
Average	11.70	68%	11%

The state of VT collected 2,000 thermostats in 2015. This was an **8% decrease over the number of thermostats collected in 2014** and **a 797% increase compared to 10 years ago**. The number of thermostats collected annually in VT has increased by an **average of 77% a year since 2002**. During the same time period, the number of thermostats collected in the US has increased by an annual average rate of 10%. Figure 1.4 displays the total number of thermostats collected in the state and the nation and figure 1.5 shares the underlying data as well as the calculated year over year percent change.

FIGURE 1.4: NUMBER OF THERMOSTATS COLLECTED OVER TIME STATE AND NATIONAL

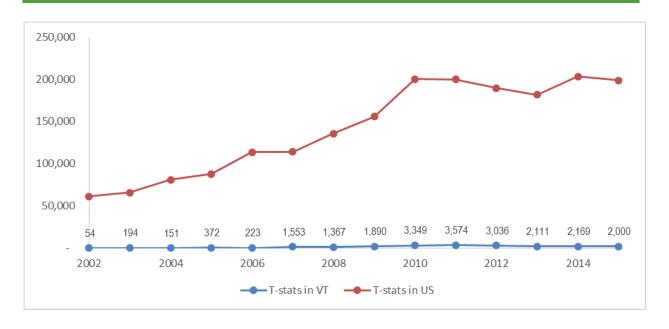
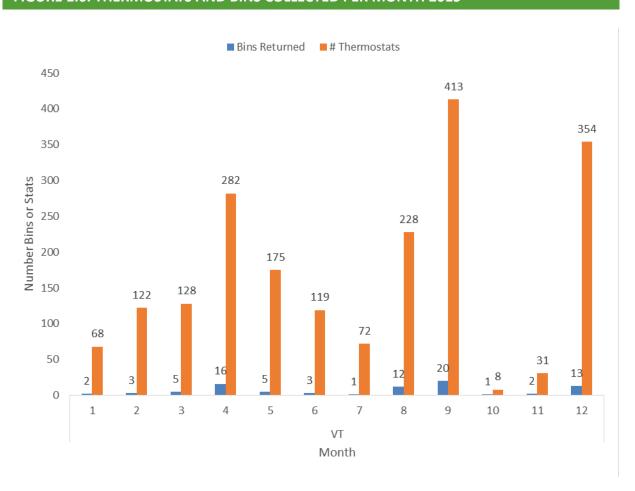


FIGURE 1.5: THERMOSTATS COLLECTED IN VT AND US OVER TIME AND YEAR OVER YEAR PERCENT CHANGE

Year	T-stats in VT	T-stats in US	% Change State	% Change US
2002	54	61,422	NA	NA
2003	194	65,778	259%	7%
2004	151	81,115	-22%	23%
2005	372	87,754	146%	8%
2006	223	113,658	-40%	30%
2007	1,553	114,158	596%	0%
2008	1,367	135,646	-12%	19%
2009	1,890	155,731	38%	15%
2010	3,349	200,064	77%	28%
2011	3,574	199,918	7%	0%
2012	3,036	189,619	-15%	-5%
2013	2,111	181,600	-30%	-4%
2014	2,169	203,346	3%	12%
2015	2,000	198,603	-8%	-2%
Average	1,574.5	142,029.4	77%	10%

Figure 1.6 displays the monthly distribution of bins and thermostats collected in the state over 2015. The months with the greatest number of bins returned were **September** (20 bins), **April** (16 bins) and **December** (13 bins). The months with the greatest number of thermostats returned were **September** (413 thermostats), **December** (354 thermostats), and **April** (282 thermostats). Conversely, the months with the fewest number of thermostats returned in 2015 were October, November and January.





The highest number of thermostats per bin were in **July** (72.0) and **February** (40.7). Figure 1.7 shows the average number of thermostats per returned bin per month for the year.

### FIGURE 1.7: AVERAGE THERMOSTATS PER BIN RETURNED PER MONTH

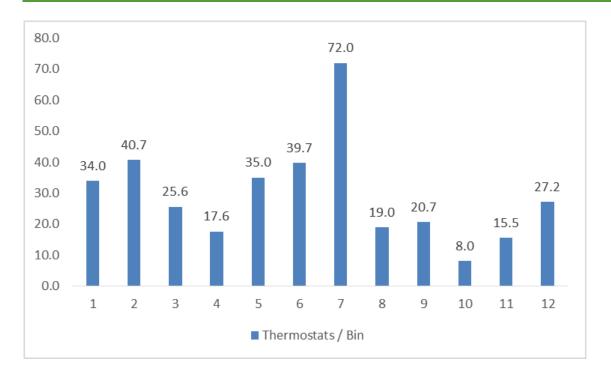


Figure 1.8 displays the average number of thermostats returned per bin in the state and in the US since the beginning of the state program. Nationally, the number of thermostats per bin has been decreasing annually since 2000. In VT the number of thermostats per bin in 2015 **(24.1 thermostats / bin avg.)** was near the lowest on record, which was 21.7 thermostats per bin in 2012. The 2015 average was below the 14 year average of 47.8 thermostats per bin.

## FIGURE 1.8: AVERAGE NUMBER OF THERMOSTATS PER BIN OVER TIME IN STATE AND NATIONAL

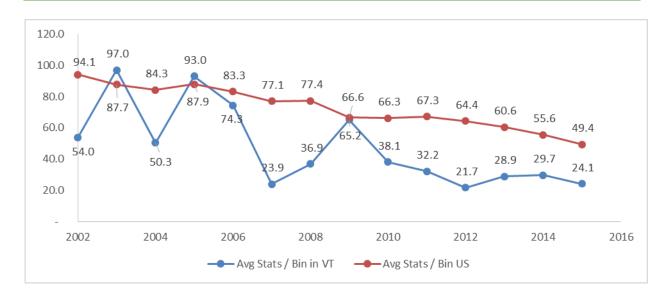
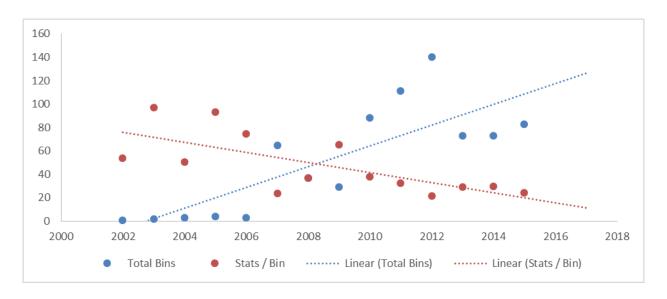


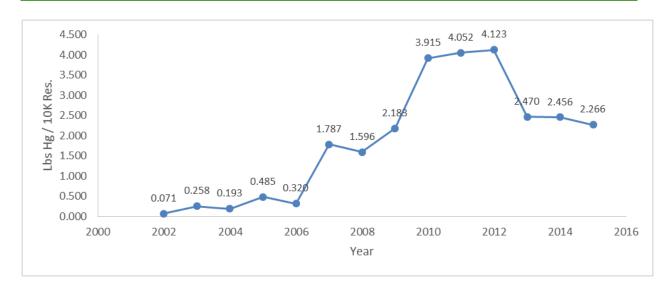
Figure 1.9 plots the total bins returned over time along with the average number of thermostats per bin over the same period to see whether or not there is a relationship between the two. A linear regression found a strong negative correlation (r=-.79, slope=-.44) between the two variables. This indicates that as more bins are returned, the number of thermostats per bin declines.

FIGURE 1.9: TOTAL BINS AND AVERAGE NUMBER OF THERMOSTATS PER BIN OVER TIME



The **total pounds of mercury collected per 10,000 residents was 2.27 in 2015**. This is an 8% decrease from the 2.46 pounds per 10,000 residents collected in 2014 and more than seven times the 0.32 pounds per 10,000 residents collected a decade ago. Figure 1.10 displays the total pounds of mercury collected per 10,000 state residents over time.





### **CHANNEL PARTNER ANALYSIS**

This section of the report examines the partner locations in more detail. **Retailers (38%)** collected the greatest percentage of thermostats in VT, followed closely by **household hazardous** waste facilities (35%), wholesalers (25%) and contractors (2%). Figure 2.1 shows the distribution of thermostats collected by location type in 2015.

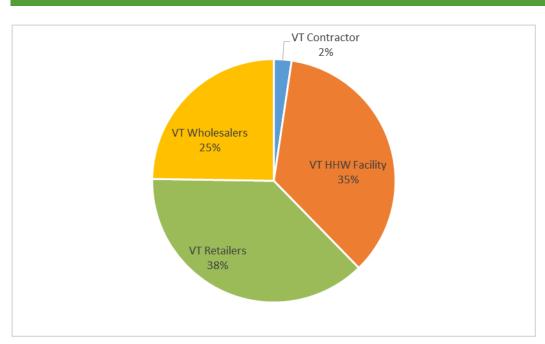
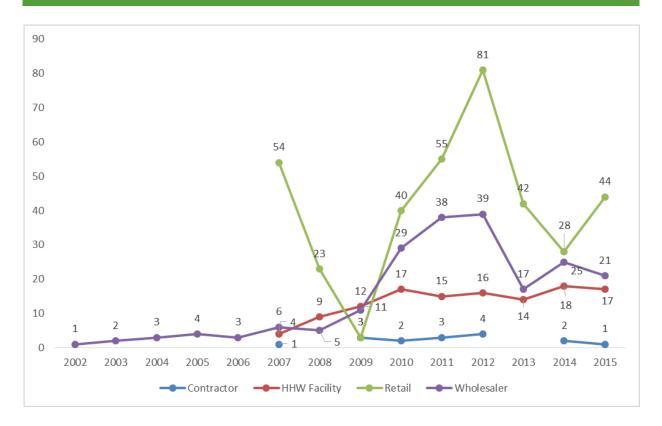


FIGURE 2.1: THERMOSTATS COLLECTED BY LOCATION TYPE IN 2015

The number of bins returned by retailers increased from 28 bins in 2014 to 44 bins in 2015. At the same time, the number of bins returned by wholesalers fell from 25 bins to 21 bins between 2014 and 2015. Figure 2.2 displays the change in the number of bins returned by thermostat collection type over time in the state.





In 2015, **34.2% of the locations** that had a bin in the state of VT sent back at least one bin for recycling. The distribution is displayed in Figure 2.3.

### FIGURE 2.3: PERCENTAGE OF STORES RETURNING A BIN IN 2015

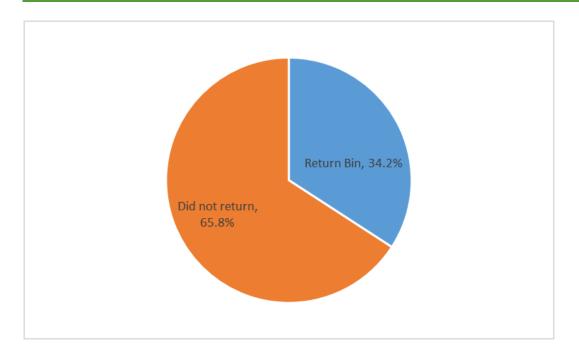
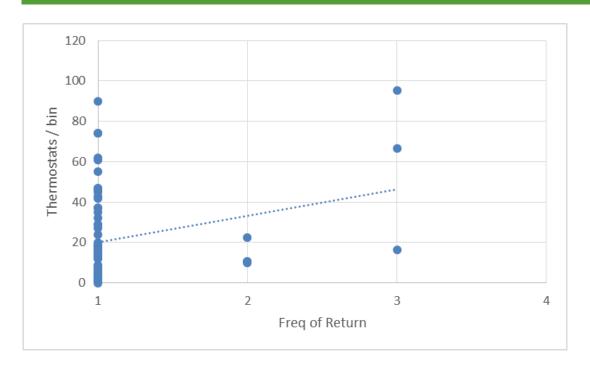


Figure 2.4 is a scatter plot comparing the frequency of bin returns per location and the number of thermostats per bin. The analysis sought to determine whether there was any correlation between the frequency of return and the number of thermostats per bin. While there was only a weak statistical correlation between the two variables, the scatter data does seem to slightly indicate that bins that were returned more frequently also tended to have more thermostats per bin in VT

FIGURE 2.4: CORRELATION OF FREQUENCY OF BIN RETURN AND NUMBER OF THERMOSTATS PER BIN



An analysis of the top performing counties in terms of total bin returns and total thermostats returned in 2015 was conducted. The county with the most bins returned in 2015 was **Chittenden** (21 bins), followed by **Windsor** (13 bins each) and **Washington** (9 bins). The counties with the most thermostats returned in 2015 were **Chittenden** (896 thermostats), **Washington** (302 thermostats) and **Addison** (190 thermostats). Figure 2.5 displays the total bins and thermostats returned, by county, in 2015.

FIGURE 2.5: BIN RETURNS AND TOTAL THERMOSTATS RETURNED IN 2015 BY COUNTY

County	Total Bins	Total T-stats
Chittenden County	21	896
Windsor County	13	158
Washington County	9	302
Windham County	7	92
Addison County	6	190
Caledonia County	6	112
Rutland County	5	30
Bennington County	4	56
Franklin County	4	100
Lamoille County	4	24
Orange County	2	20
Orleans County	2	20

**Chittenden Solid Waste District (7 bins)** returned the highest number of bins in the state in 2015, followed by **F.W. Webb Co. (6 bins) and Aubuchon Hardware (5 bins).** Johnstone Supply offered a nationwide TV giveaway, but they did not appear as a top performing partner in VT. In addition to the top performers included in the figure, 45 additional program partners returned one or two bins each. Figure 2.6 displays the top performing partners in terms of total bins returned in 2015.

### FIGURE 2.6. TOP PERFORMING CHANNEL PARTNERS IN STATE

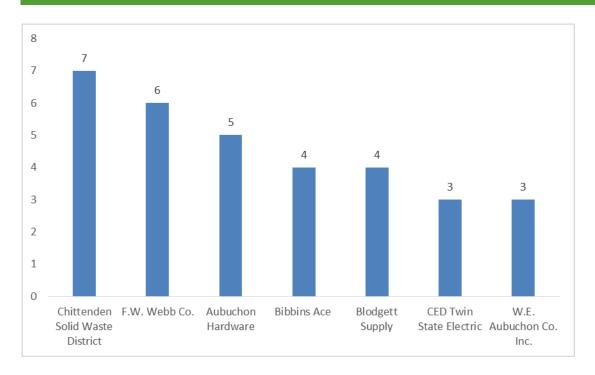


Figure 2.7 looks at the top performers in a more detail. The figure includes the top performers for the year by each of the following categories: total bins returned, total thermostats, and average number of thermostats per bin.

## FIGURE 2.7. TOP PERFORMING PARTNERS BY TOTAL BINS, TOTAL THERMOSTATS, AND THERMOSTATS PER BIN

	No. of Bins	No. of Thermostats	Thermostats / Bin
Chittenden Solid Waste District	7	576	82.3
F.W. Webb Co.	6	166	27.7
Aubuchon Hardware	5	95	19.0
Bibbins Ace	4	81	20.3
Blodgett Supply	4	187	46.8
CED Twin State Electric	3	28	9.3
W.E. Aubuchon Co. Inc.	3	75	25.0

TRC conducted several activities in 2015 as a way to increase the number of bins and thermostats returned in the state. These activities included site visits and 'miss you' calls to collection locations that may not have participated in the program recently. In 2015, a total of **44 site visits were conducted in VT and 34 'Miss You' calls** were placed. Figure 2.8 displays the relationship between the number of site visits per month, the bin returns per month, and the number of thermostats (in 100's) returned per month, there was not a statistically significant relationship between the two variables.

## FIGURE 2.8: RELATIONSHIP BETWEEN SITE VISITS AND BINS AND THERMOSTATS RETURNED PER MONTH

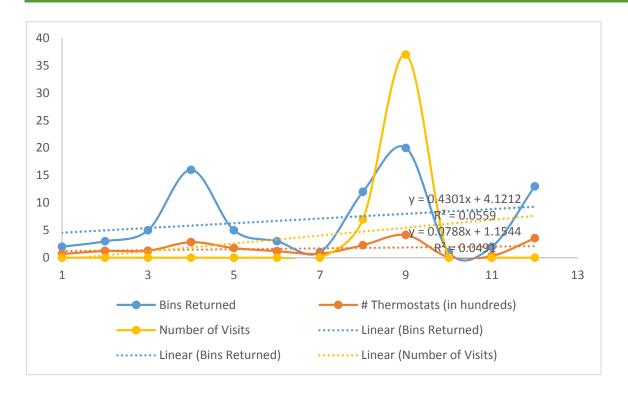
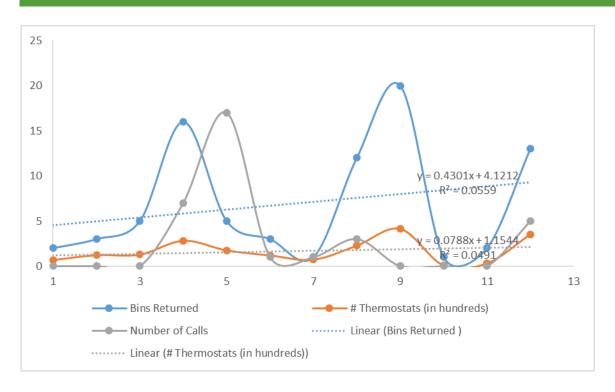


Figure 2.9 displays the relationship between the number of calls per month, the bin returns per month, and the number of thermostats (by 100's) returned per month. Once again there was not a statistically significant relationship between the two variables.

FIGURE 2.9: RELATIONSHIP BETWEEN 'MISS YOU' CALLS AND BINS AND THERMOSTATS RETURNED PER MONTH



### **COMPARISIONS TO NATIONAL AND OTHER STATE'S DATA**

To compare how the state collection partners performed in 2015, the national averages for the number of bins returned per total locations since 2012 was calculated and compared to the state average over the same time period. The average numbers of bins includes locations that did not return any bins in a given year. It should be noted that when making comparisons each state has different regulations, housing stock mix, local policies, and incentives that may have a significant impact on returns. Overall, the average number of bins returned per location per year was lower in VT than the US average and the annual averages are shown in figure 3.1.

### FIGURE 3.1: AVERAGE NUMBER OF BINS RETURNED PER LOCATION PER YEAR

Average number of bins returned per year per location	2012	2013	2014	2015
US Total	1.4	1.4	1.6	1.8
VT Average	1.3	0.7	0.7	0.8

Figure 3.2 displays the locations in VT that returned more than one bin in a given year since 2012 and figure 3.3 displays the top 10 partners in the US over the same time period in terms of the number of bins returned. R.E. Michel Company is the only company that appears on both the state and national lists.

## FIGURE 3.2: PARTNER LOCATIONS IN VT RETURNING MORE THAN 1 BIN PER YEAR 2012-2015

Location	2012 Bins	Location	2014 Bins
Aubuchon Hardware	16	F. W. Webb Company	
F. W. Webb Company	10	Chittenden Solid Waste District - Environmental Depot	
True Value	9	ACE Hardware	
Chittenden Solid Waste District - Environmental Depot	7	True Value	
Blodgett Supply	7	Aubuchon Hardware	
ACE Hardware	6	CED Twin State Electric Supply	
Martin's Hardware & Building Supply, Inc.	4	ADDISON COUNTY SOLID WASTE MANAGEMENT	
Bourne's Energy	4	Blodgett Supply	
CED Twin State Electric Supply	3	Martin's Hardware & Building Supply, Inc.	
W.E. Aubuchon Company, Inc.	3	R.E. Michel Company	
R. K. Miles, Inc.	2	BROWN AND ROBERTS	
Hulbert Supply	2	The Granite Group	
Poulin Lumber		Lamoille Regional Solid Waste District	
W.E. AUBUCHON HARDWARE #083	1	Bourne's Energy	
Addison County Solid Waste Management		Location	2015 Bins
The Granite Group			2013 01113
Sid Harvey Industries	_	F.W. Webb Co.	
St. Albans ACE Hardware		Aubuchon Hardware	
STICKS & STUFF		Bibbins Ace	
BIBEN'S HOME CENTER		Blodgett Supply	
LONDONERRY HARDWARE		CED Twin State Electric	
E.C. Crosby & Sons Inc	2	W.E. Aubuchon Co. Inc.	
SIGNA LUMBER INC.	2	Martin's Hardware & Building Supply, Inc.	
H. GREENBERG & SONS	2	Yankee Electric Supply, Inc	
THE SIMONS COMPANY	2	R. K. Miles, Inc.	
Location	2013 Bins	THE HARDWARE AT ROCHESTER	
Chittenden Solid Waste District - Environmental Depot	5	HALLORAN HARDWARE TV	
ACE Hardware	5		
Blodgett Supply	5		
True Value	4		
F. W. Webb Company	4		
Aubuchon Hardware	4		
E.C. Crosby & Sons Inc	4		
BROWN AND ROBERTS	3		
CED Twin State Electric Supply	2		
Martin's Hardware & Building Supply, Inc.	2		
W.E. Aubuchon Company, Inc.	2		
JERIHILL HOME CENTER	2		
Poulin Lumber	2		
W.E. AUBUCHON HARDWARE #083	2		
LONDONERRY HARDWARE	2		

## FIGURE 3.3: TOP PERFORMING PARTNER LOCATIONS NATIONWIDE IN BIN RETURNS 2012 TO 2015

Location	2012	Location	2014
R.E. Michel Company		R.E. Michel Company	461
Honeywell Inc.	195	Johnstone Supply	460
Johnstone Supply	176	US Air Conditioning Distributors, Inc.	127
United Refrigeration	107	Ferguson Enterprises	119
Ferguson Enterprises	94	United Refrigeration	114
Refrigeration Supplies Distributor	88	Goodman Distribution Inc.	95
Comverge	69	Honeywell Inc.	77
US Air Conditioning Distributors, Inc.	67	Gustave A Larson Company	67
Goodman Distribution Inc.	67	Refrigeration Supplies Distributor	60
Franklin Energy Services	47	Lennox Industries Inc	60
Lennox Industries Inc	45	C.C. Dickson Company	55
Location	2013	Location	2015
R.E. Michel Company	311	Johnstone Supply	519
Johnstone Supply	298	R.E. Michel Company	336
United Refrigeration	162	Ferguson Enterprises	184
Honeywell Inc.	118	United Refrigeration	176
Ferguson Enterprises	106	US Air Conditioning Distributors, Inc.	106
US Air Conditioning Distributors, Inc.	102	Goodman Distribution Inc.	70
Refrigeration Supplies Distributor	69	Gustave A Larson Company	62
Goodman Distribution Inc.	64	Refrigeration Supplies Distributor	54
Baker Distributing Company	47	Lennox Industries Inc	51
Comverge	41	Baker Distributing Company	50

Figure 3.4 displays the total percentage of locations per state and for the entire US with a bin that participated in the program in 2015 (participation is defined as sending back at least one bin). In 2015, 34.2% of the locations in VT returned a bin compared to a national average of 37.1%. The state with the highest percentage of locations returning a bin in 2015 was MN (54.5%).

### FIGURE 3.4: PERCENTAGE OF LOCATIONS RETURNING A BIN IN 2015



Figure 3.5 compares the state and national rates for a number of analytics in 2015. These include: the total thermostats and bins collected, the number of collection locations in each state per 10,000 residents, the number of thermostats collected by total locations and per participating location, the number of thermostats per bin returned on average in 2015, and the number of thermostats collected in each state and the US per 10,000 residents.

FIGURE 3.5: COMPARISONS OF STATES AND US AVERAGES AMONG SEVERAL CATEGORIES

			Number	Thermostats			Thermostats
			locations per	per total		Thermostats per	per 10K
	Total	Total	10K Res	locations	Thermostats	location returning	residents
State	Thermostats	Bins	(avg.)	(avg.)	per bin (avg.)	a bin (avg.)	(avg.)
CA	18,260	513	0.19	25.1	35.6	65.4	4.7
CT	3,395	77	0.38	24.6	44.1	55.7	9.4
IA	2,795	63	0.39	23.1	44.4	53.8	9.0
IL	10,193	236	0.41	19.3	43.2	55.1	7.9
MA	7,881	128	0.41	28.0	61.6	89.6	11.6
ME	4,571	112	1.82	18.8	40.8	53.2	34.3
MN	9,864	127	0.26	68.0	77.7	124.9	17.9
MT	229	6	0.23	9.5	38.2	45.8	2.2
NH	2,652	61	1.51	13.1	43.5	49.1	19.9
NY	6,466	201	0.26	12.5	32.2	40.4	3.3
PA	14,338	256	0.29	38.9	56.0	81.0	11.2
RI	2,212	39	0.53	39.5	56.7	92.2	21.0
VT	2000.0	83.0	3.2	9.9	24.1	29.0	31.9
US	84,856	1902	0.33	23.9	44.6	64.3	7.8

### **2016 ANNUAL GOALS**

TRC again set annual goals for the organization for the calendar year of 2016. The 2016 goals were developed by TRC staff and incorporate each operational area of the organization, including:

- 1) Continue to increase efforts of collecting mercury thermostats by exploring nontraditional avenues
- 2) Steer TRC toward tactical, positive, cohesive messaging while implementing marketing strategies
- 3) Continue fulfilling all members' state specific legal requirements without losing continuity
- 4) Maximize human capital opportunities by utilizing available internal and external resources

Many of the activities which drive TRC's daily functions are captured in the spirit of these goals. Developing a list of high level external goals allows TRC to keep its focus on the ultimate mission of recycling every mercury thermostat, every time.

### **COLLECTION LOCATION TOUCH CAMPAIGN**

In 2016 TRC will launch a comprehensive location outreach plan that strategically coordinates and schedules outbound phone calls, reminder postcards, and site visits throughout the year. Designed around the year's site visit travel schedule, phone calls have been scheduled to occur within two months of TRC staff physically visiting a state, and postcards have been scheduled to follow up these phone calls within two months. Special attention will be focused on states with mandatory collection programs, including Vermont, which will entail up to 120 phone calls to collection locations that have not returned a bin within the past year. States with non-mandatory collection programs will continue to receive up to 60 collection location phone calls in 2016.

Additionally, each state's TRC collection locations which haven't returned a bin within the last year will continue to receive reminder "Miss you" postcards every four months of the year. By strategically coordinating the time of outreach between these three mediums (site visits, phone calls, postcards) TRC hopes to maximize the impact of each initiated contact effort.

### **BRANDING CAMPAIGN**

In January TRC placed a full-page color ad in *ACHR News*, one of the industry's leading HVAC publication with a weekly circulation of more than 33,000 (Exhibit 28). The ad appeared during the week of the AHR Expo, which is one of the more popular issues of the magazine. The ad tied TRC's members and affiliates together around the call to action of recycling every mercury thermostat, every time. TRC resized this ad to place a half-page size in the February issue of *HVACR Business Magazine* as well.

### **EXHIBIT 28: ACHR NEWS FULL PAGE AD**

## AN IMPORTANT MESSAGE TO HVAC CONTRACTORS:



Mercury thermostats contain between 3-12 grams of mercury. As an industry, we sold and installed these devices. Now, let us work together to properly manage their disposal.

## JOIN US IN SUPPORTING MERCURY THERMOSTAT RECYCLING

APR Supply Co. | Bard Manufacturing Corporation | Carrier Corporation | C.C. Dickson Co. | Chromalox
Climate Master, Inc. | Crescent Parts and Equipment | Daikin Applied
Emerson Electric Co. / White-Rodgers | Empire Comfort Systems | Ferguson
Gustave A. Larson Company | G.W. Berkheimer | Honeyweil International Inc. | Hunter Fan Company
Ingersoll Rand | Irr Supply Centers | Johnson Controls | Johnson Supply | Johnstone Supply
Lennox International Inc. | Lux Products Corporation | Nortek Global HVAC
R.E. Michel Company, Inc. | Rheem Manufacturing Company | Taco Comfort Solutions | Uponor, Inc.
U.S. Air Conditioning Distributors | Vaillant Corporation | W.W. Grainger



TRC Annual Report on Mercury-added Thermostat Collection and Recycling in Vermont Calendar Year 2015

Additionally in January, TRC launched a new branding campaign: "Recycle every mercury thermostat, every time" (Exhibit 29). The campaign messaging is based off frequent feedback TRC staff receives from contractors, who tend to comment, "What's the big deal about mercury? I used to play with it in school as a kid." This new messaging compares mercury thermostats to kids playing with HVAC tools. HVAC tools are safe when used properly, just like mercury thermostats are safe when recycled and disposed of properly.

#### **EXHIBIT 29: NEW BRANDING CAMPAIGN**



TRC updated its trade show booth display with the new artwork and messaging, and the campaign will continue throughout the year in print and digital advertising placements, with several different versions featuring different kids with tools.

### PAID ADVERTISING

Additionally, TRC is currently working to update its Google AdWords campaign to include display ads, which include images versus only text, to enhance the visibility of the ads. TRC also plans to implement Facebook, and potentially YouTube, advertising in the spring and fall during the HVAC industry's busier seasons when mercury thermostats are more likely to be replaced. Ads will have similar messaging to the Google AdWords campaign and be targeted to states with disposal bans.

Some additional planned advertising and promotion (subject to change) include:

- 1/4pg full-color ad in *Distribution Center Magazine* for three months
- 1/2pg spot-color ad in *HVAC Insider New England* for four months
- Skyscraper banner ad on ACHRNews.com for two months
- Website Topic Sponsorship on ACHRNews.com for three months
- Top leaderboard ad in *ACHR News* enewsletter for two months
- ACHR News digital edition video spotlight
- *ACHR News* digital edition sponsorship
- Feature leaderboard ad in NATE's bi-monthly enewsletter for two months
- Medium rectangle banner ad in Distribution Center's weekly enewsletter for two months
- Banner ad in AHRI's weekly newsletter for 13 weeks
- HVACR Business Magazine's web package for two months, including a video and three different sized ads on their website
- Continue to exhibit at regional and key national industry events.
- TRC plans on continuing efforts to engage larger contractors and HVAC wholesale distributors

# APPENDIX 1: POSTER LETTER TO HHW, RETAIL, CONTRACTORS



1765 Duke Street | Alexandria, VA 22314 | thermostat-recycle.org

July 9, 2015

ATTN: Service Manager/Owner Bournes 10 Canada Drive Swanton, VT 05488

Subject: Free Marketing Materials from Thermostat Recycling Corporation

Dear Service Manager/Owner,

As a participant in TRC's mercury thermostat collection program we want to offer you a new program promotional item that we are providing at no cost. The item is a full-color, double-sided 18x24 poster to enhance awareness of TRC's program, as pictured below.

#### Front:



#### Back:



To order this free poster please email me directly at piper.mlsna@thermostat-recycle.org and mention this letter. We appreciate your continued participation in TRC's program.

Sincere Regards,

Piper MIsna

Operations and Communications Coordinator

## **APPENDIX 2: POSTER LETTER TO WHOLESALERS**



July 9, 2015

Appalachian Supply 4581 Memorial Drive St Johnsbury, VT 05819

Subject: Free Marketing Materials from Thermostat Recycling Corporation

Dear Branch Manager,

As a participant in TRC's mercury thermostat collection program we want to offer you two new program promotional items. TRC is providing these items at no cost. The items include a fullcolor, double-sided 18x24 poster (Exhibit A), and a full-color cardboard merchandise display to enhance the visibility of the TRC bin at your location (Exhibit B). Limited quantity of merchandise displays available!

#### Exhibit A:



#### Exhibit B:



To order the poster and/or merchandise display, please email me directly at piper.mlsna@thermostat-recycle.org and mention this letter. We appreciate your continued participation in TRC's program.

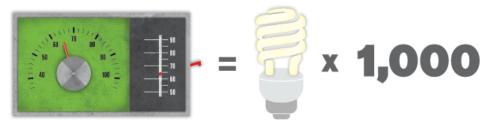
Sincere Regards, Pipe Mlos

Piper Misna

Operations and Communications Coordinator

## **APPENDIX 3: DECEMBER LETTER TO CONTRACTORS**

# Pid you know?



One mercury thermostat contains approximately **1,000** times more mercury than a CFL bulb.

TRC runs a program where you can recycle mercury thermostats **for free** at HVAC wholesaler locations.



TRC's program offers a free and simple way to properly dispose of mercury thermostats. Next time you visit a participating HVAC wholesaler location, bring all mercury thermostats you've accumulated to recycle.



Visit www.thermostat-recycle.org/search to see a full list of participating collection sites near you, or call TRC at 888-266-0550 with any questions.

### APPENDIX 4: OESP DEDICATED EBLAST





Thermostat-Recycle.org
an industry-funded non-profit TRC@Thermostat-Recycle.org
1-888-266-0550

## Every Thermostat, Every Time

## One Mercury Thermostat Contains 1,000x More Mercury <u>Than</u> a CFL Bulb

Would you throw 1,000 CFL bulbs in the trash? Trashing a mercury thermostat from time to time might not seem very significant, but it is, and they add up.

Not only is it bad for the environment, but disposing of mercury thermostats in the trash is also against the law in several states. Regulated as hazardous waste, failure to recycle could lead to fines up to \$25,000 per violation.



Thermostat Recycling Corporation (TRC) provides an easy way for you and your employees to comply with state law by recycling mercury thermostats at participating HVAC wholesale distributors.

Additionally, HVAC contractors with seven or more technicians, or operating in rural communities, are eligible to participate in TRC's program directly.

Sign up online by 10/31 and enter Promo Code OESP to receive a free recycling container that holds approximately 100 mercury thermostats and contains all necessary materials for recurring shipments to TRC at no cost to you.

Visit www.thermostat-recycle.org to learn more about how easy it is to take advantage of the program.

\*Disposal bans apply in the following states: CA, CT, FL, IA, IL, ME, MA, MN, NY, NH, OR, PA, RI, and VT.

Sign Up

### APPENDIX 5: CONTRACTING BUSINESS JANUARY EBLAST





1-888-266-0550

an industry-funded non-profit

## Free Mercury Thermostat Recycling

#### Stay in Compliance with State Laws

Your state prohibits the disposal of all mercury thermostats in solid waste\*. Many states go further by requiring all HVAC contractors to recycle every mercury thermostat removed from service — prohibiting them to leave them at the customer's premise. Violations can result in fines up to \$25,000 per day.

Thermostat Recycling Corporation (TRC) offers a program to help HVAC contractors comply with the law. As a non-profit, TRC provides mercury thermostat recycling containers to your local HVAC wholesalers to collect them at no cost to you.



If you are an HVAC wholesale distributor or contracting business with seven or more technicians, you may participate directly in TRC's program by ordering a collection container. Sign up by 2/13 and enter Promo Code CBEMAIL to receive a free recycling container that holds approximately 100 mercury thermostats and contains all necessary materials to return the container to TRC at no cost to you.

Visit www.thermostat-recycle.org to learn more about how easy it is to take advantage of the program.

\*Disposal bans apply in the following states: CA, CT, FL, IA, IL, ME, MA, MN, NY, NH, OR, PA, RI, and VT.

Sign Up

### APPENDIX 6: CONTRACTING BUSINESS JUNE EBLAST





an industry-funded non-profit

Thermostat-Recycle.org TRC@Thermostat-Recycle.org 1-888-266-0550

## Free Mercury Thermostat Recycling

#### Stay in Compliance with State Laws

Your state prohibits the disposal of all mercury thermostats in solid waste\*. Many states go further by requiring all HVAC contractors to recycle every mercury thermostat removed from service - prohibiting them to leave them at the customer's premise. Violations can result in fines up to \$25,000 per day.

Each mercury thermostat contains at least 1,000 times more mercury than a CFL bulb. Would you throw 1,000 CFLs in the trash? Make sure to recycle every mercury thermostat, every time.



Thermostat Recycling Corporation (TRC) offers a program to help HVAC contractors comply with the law. The non-profit provides mercury thermostat recycling containers to your local HVAC wholesalers to collect them at no cost to you.

If you are an HVAC wholesale distributor or contracting business with seven or more technicians, you may participate directly in TRC's program by ordering a collection container. Sign up by 6/30 and enter Promo Code CBEMAIL to receive a free recycling container that holds approximately 100 mercury thermostats and contains all necessary materials for recurring shipments to TRC at no cost to you.

Visit www.thermostat-recycle.org to learn more about how easy it is to take advantage of the program.

\*Disposal bans apply in the following states: CA, CT, FL, IA, IL, ME, MA, MN, NY, NH, OR, PA, RI, and VT.

Sign Up

## APPENDIX 7: COLLECTION LOCATION PHONE CALLS

(SORTED BY DATE, THEN ALPHABETICALLY BY CITY)

Date	Collection Location	City
4/21/2015	Greens Ace Hardware	Enosburg Falls
4/21/2015	Johnson Hardware & Rental	Johnson
4/21/2015	Sticks & Stuff	Middlesex
4/22/2015	F.W. Webb CoBennington 2	Bennington
4/22/2015	Blodgett Supply-Montpelier	Montpelier
4/22/2015	Collette Plumbing & Heating	Orleans
4/22/2015	Signa Lumber Inc.	S. Londonderry
5/8/2015	Granite City Electric Supply	Bennington
5/8/2015	Fireside True Value	Brattleboro
5/8/2015	E.C. Crosby & Sons Inc	Danby
5/8/2015	Fogg'S Hardware	Fairlee
5/8/2015	Bourne'S Energy.	Morrisville
5/8/2015	F.W. Webb CoSaint Albans	Saint Albans
5/8/2015	Welch'S True Value	South Royalton
5/8/2015	Stowe Hardware	Stowe
5/19/2015	The Granite Group-Burlington	Burlington
5/27/2015	E.C. Crosby & Sons Inc	Danby
5/27/2015	Central Supplies	Randolph
5/27/2015	Aubuchon Hardware #086	Randolph
5/28/2015	Green Mountain Electric Supply	Burlington
5/28/2015	Aubuchon Hardware (Formerly Estey Do It Best Hardware)	Hinesburg
5/28/2015	Bourne'S Energy.	Morrisville
5/28/2015	Leonards True Value	Pownal
5/28/2015	Blodgett Supply-White River Jct.	White River Jct.
6/25/2015	R.E. Michel Company, Inc Williston	Williston
7/29/2015	Carrier Enterprise-Williston	Williston
8/3/2015	Island Pond True Value	Island Pond
8/4/2015	Aubuchon Hardware - Rutland	Rutland
8/19/2015	Aubuchon Hardware - Rutland (2)	Rutland
12/16/2015	F.W. Webb CoBarre	Barre
12/16/2015	F.W. Webb CoRutland	Rutland
12/16/2015	Sid Harvey	Rutland
12/16/2015	The Granite Group-Rutland	Rutland
12/16/2015	F.W. Webb CoWilliston	Williston

## APPENDIX 8: COLLECTION LOCATION VISITS

(SORTED BY DATE VISITED, THEN ALPHABETICALLY BY CITY)

Date of visit	Collection Location	City	Zip Code	County
8/31/2015	J & H Hardware	Bellows Falls	05101	Windham County
8/31/2015	FW Webb - Springfield	Springfield	05156	Windsor County
8/31/2015	F.W. Webb CoBrattleboro	Brattleboro	05301	Windham County
8/31/2015	Brown And Roberts	Brattleboro	05301	Windham County
8/31/2015	Fireside True Value	Brattleboro	05301	Windham County
8/31/2015	Vermont Plumbing Supply	Brattleboro	05301	Windham County
8/31/2015	W.W. Building Supply	Newfane	05345	Windham County
9/1/2015	Blodgett Supply-White River Junction	White River Junction	05001	Windsor County
9/1/2015	Aubuchon Hardware - Bradford	Bradford	05033	Orange County
9/1/2015	Fogg'S Hardware	Fairlee	05045	Orange County
9/1/2015	Welch's True Value - South Royalton	South Royalton	05068	Windsor County
9/1/2015	Goodro Lumber & True Value	Killington	05751	Rutland County
9/1/2015	Hardware Store at Rochester	Rochester	05767	Windsor County
9/2/2015	Central Supplies	Randolph	05060	Orange County
9/2/2015	Aubuchon Hardware #045	Montpelier	05602	Washington County
9/2/2015	The Granite Group	Barre	05641	Washington County
9/2/2015	Nelson Ace Hardware	Barre	05641	Washington County
9/2/2015	F.W. Webb CoBarre	Barre	05641	Washington County
9/2/2015	Midstate Electric Supply Corp	Barre	05641	Washington County
9/2/2015	Kenyon'S Hardware	Northfield	05663	Washington County
9/2/2015	Aubuchon Hardware # 102	Northfield	05663	Washington County
9/2/2015	Bisbee'S Hardware	Waitsfield	05673	Washington County
9/2/2015	Kenyon'S Variety	Waitsfield	05673	Washington County

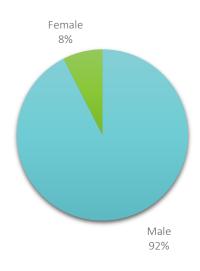
## APPENDIX 8: COLLECTION LOCATION VISITS

(SORTED BY DATE VISITED, THEN ALPHABETICALLY BY CITY)

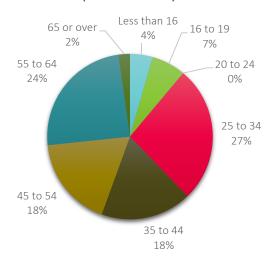
9/2/2015	Waterbury True Value Hardware	Waterbury	05676	Washington County
9/2/2015	Farm N Country Hardware	Williamstown	05679	Orange County
9/2/2015	,	vviillamstown	05679	,
9/3/2015	Aubuchon Hardware # 071	Essex Junction	05452	Chittenden County
9/3/2015	Jerihill Home Center	Jericho	05465	Chittenden County
9/3/2015	Harry'S Hardware	Cabot	05647	Washington County
9/3/2015	Country Home Center	Morrisville	05661	Lamoille County
9/3/2015	Aubuchon Hardware #057	Morrisville	05661	Lamoille County
9/3/2015	Yankee Electric Supply	Morrisville	05661	Lamoille County
9/3/2015	St. Jay Hardware, Inc.	St. Johnsbury	05819	Caledonia County
9/3/2015	Green Mountain Electric Supply-St Johnsbury	Newport	05819	Caledonia County
9/3/2015	FW Webb - St Johnsbury	ST Johnsbury	05819	Caledonia County
9/3/2015	Aubuchon Hardware - St Johnsbury	St Johnsbury	05819	Caledonia County
9/3/2015	Appalachian Supply-St Johnsbury	St Johnsbury	05819	Caledonia County
9/3/2015	Bourne'S Energy/Hopkins Oil	Lyndonville	05851	Caledonia County
9/3/2015	Lyndonville Hardware	Lyndonville	05851	Caledonia County
9/4/2015	Green Mountain Electric Supply - Colchester	Colchester	05446	Chittenden County
9/4/2015	Gtm Electric Supply	St. Albans	05478	Franklin County
9/4/2015	Sticks and Stones - St Albans	St Albans	05478	Franklin County
9/4/2015	Green Mountain Electric Supply	St. Albans	05478	Franklin County
9/4/2015	Aubuchon Hardware - St Albans	St Albans	05487	Addison County
9/4/2015	Aubuchon Hardware #076	Swanton	05488	Franklin County

#### **DEMOGRAPHIC**

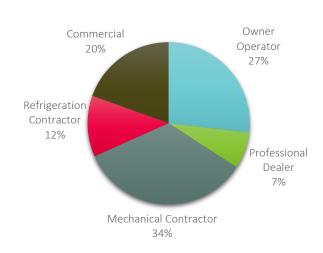




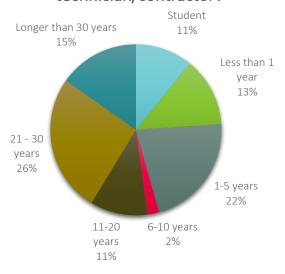
## What is your current age? (U.S. Census)



## What is the nature of your business?

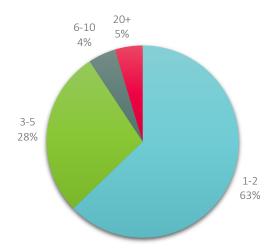


## How long have you worked as a technician/contractor?

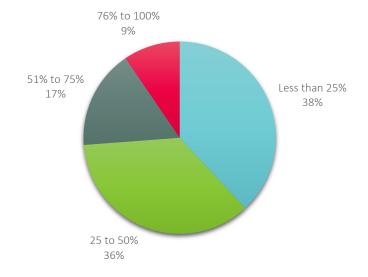


### THERMOSTAT REPLACEMENT

How many thermostats do you remove/replace in an average week as part of your job?

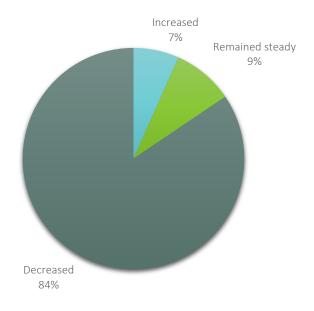


What percentage of the thermostats you replaced in 2014 would you estimate contained mercury?



#### **MERCURY CONTAINING THERMOSTAT PREVALENCE**

Would you say that during the time you have worked as a technician/contractor the number of mercury containing thermostats you see has...



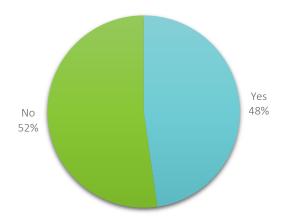
#### **EMPLOYER POLICIES**

Are you required by your employer to recycle mercury containing thermostats?



#### **INCENTIVES**

To your knowledge, are there any incentives provided by utilities (eg. energy companies) to encourage recycling of thermostats?



#### **DISPOSAL**

Sometimes 5%

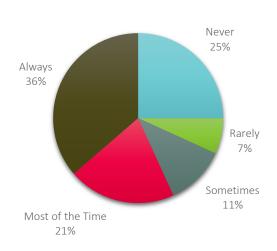
Rarely

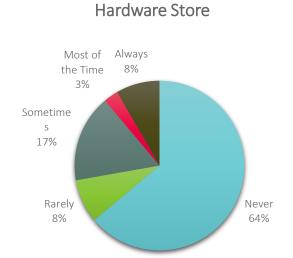
19%

Where do you dispose of the mercury containing thermostats you collect?

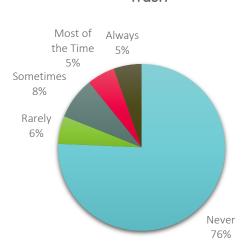


#### Wholesaler/Supply House



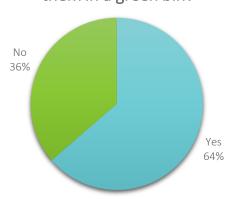


### Trash



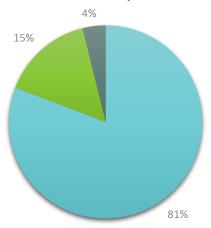
#### **GREEN BIN UTILIZATION**

If you recycle thermostats, do you recycle them in a green bin?



#### **MERCURY HARMFULNESS**

Which of the following statements best reflects your personal opinion of the harmfulness of mercury?



- Mercury is very harmful and we need to do more to keep it out of the environment.
- I don't know. I have no opinion about the harmfulness of mercury.
- I don't think it is very harmful.

HVAC Contractor Employee Compliance Policy - MERCURY THERMOSTAT DISPOSAL

#### Company Name Mercury Thermostat Disposal Overview

It is XXX's policy to be an environmentally conscious company while complying with all state and federal regulations. As such, XXX will make every effort to educate both our customers and employees on the regulations pursuant to Section XXX of the NAME OF BILL and description of the bill. This education will include the risks and dangers associated with mercury pollution into the environment along with any regulatory, legal and/or business obligations or responsibilities related to the recycling of mercury thermostats.

XXX will comply with all regulations and industry requirements concerning the safe disposal of mercury thermostats. Further, it is the responsibility of the company and each employee who, as a matter of course, deals with mercury thermostats and/or customers, to be aware of this policy and the associated legal requirements.

It is the responsibility of each XXX employee to be aware of the information regarding disposal of mercury thermostats to the extent necessary to perform his or her duties in an environmentally sensitive nature and to explain to our customers what we are doing to prevent the improper disposal of mercury thermostats.

#### **Background on Mercury Thermostats**

**Health/Safety Concerns:** Mercury is a neurotoxin which has both negative impacts on human and ecological populations. The toxicity is fatal if inhaled, consumed, or exposed into the blood stream. It may also damage fertility or an unborn child. Mercury can also cause damage to organs through prolonged or repeated exposures.

Mercury Thermostat Sources: Mercury thermostats were first manufactured and sold starting in 1956 and began a final cease in production around 2006, As mercury thermostats are replaced, the available inventory to recycle diminishes until eventually all in-service thermostats are upgraded to a mercury free control device. While estimates vary, there were millions of mercury thermostats sold in the United States.

These units still remain in service in the following types of facilities;

- · Residential single family homes either in attached, detached, or semi-attached
- · Residential multifamily homes such as apartments or low income housing
- · Light commercial buildings such as hotels, restaurants, banks, and retail
- Educational buildings such as schools, colleges, and museums
- · Military building such as barracks

When a mercury thermostat is discovered during the direct installation of replacement thermostats, XXX Proper Disposal Policy will be followed. If it is deemed that the Proper

HVAC Contractor Employee Compliance Policy - MERCURY THERMOSTAT DISPOSAL

Disposal Policy is insufficient, XXX will contact the Thermostat Recycling Corporation (TRC) on guidance on how to properly dispose of mercury thermostats<sup>1</sup>.

#### Regulatory History

#### U.S. Federal Rules and Regulations

The Resource Conservation and Recovery Act (RCRA)<sup>2</sup> was enacted in 1976 to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner.

The Universal Waste Rule within RCRA is designed to reduce the amount of hazardous waste items in municipal solid waste stream, encourage recycling and proper disposal of certain common hazardous wastes, and reduce the regulatory burden on businesses that generate these wastes. Universal wastes includes mercury thermostats that contain as much as 3 grams of liquid mercury and are located in almost any building, including commercial, industrial, agricultural, community, and household buildings.

#### State Rules and Regulations

Many states regulate the installation, disposal and sale of mercury bearing equipment such as mercury thermostats, with varying requirements and methods of compliance for contractors and distributors. In many states enforcement authority is granted through the state's EPA.

When XXX has a job where the customer's address is located in any of the following states; CA, CT, FL, IL, IA, LA, ME, MD, MA, MI, MN, MT, NH, NY, OH, OR, PA, RI, VT, and WA XXX's employees will follow the Proper Disposal Procedure. See Appendix 2 for chart.

<sup>&</sup>lt;sup>1</sup> For a one-time fee of \$25.00 participating locations are provided with a reusable plastic recycling container, a 5mil plastic liner, and wire zip ties to seal the liner and the bin for transport. Each container also comes with a pre-paid Federal Express label to return the container to TRC. The container will hold up to 150 waste mercury thermostats. A participating location simply needs to accumulate waste mercury thermostats for up to one year, prepare the container for shipment, and arrange pick-up with carrier. TRC is an automatic return program, and the same container will be returned to the location within 10 business days, restarting the process. The TRC program operates under Universal Waste Regulations and there is no requirement to manifest to maintain records of shipments. TRC only accepts whole mercury thermostats. No other item, particularly mercury containing items, can be stored or shipped in the TRC container. TRC reserves the right to terminate participation if a collection location ships items other than whole mercury thermostats.

<sup>2</sup> http://www2.epa.gov/rcra

HVAC Contractor Employee Compliance Policy - MERCURY THERMOSTAT DISPOSAL

#### XXX Proper Disposal Procedure

To be compliant with this proper disposal of mercury thermostats procedure, XXX will take the following actions to ensure effective monitoring and assessment of compliance:

- XXX will assign an employee to oversee compliance including but not limited to: owners, service managers, service technicians, and any and all employees whom generate mercury thermostat waste. This employee will be assigned the responsibility of record keeping (if necessary) and ensuring compliance by all XXX's employees.
- Commit (1) hour of employee training on what a mercury thermostat is and how to dispose of them properly following federal, state, and local regulations. Visit www.thermostat-recycle.org with questions.
- Require each new employee who generates mercury thermostat waste to order a mercury spill kit as a condition of employment or XXX will provide each new employee a mercury spill kit upon employment, and replace it when necessary.
- Create a working environment in which employees can report violations of the Proper Disposal Procedure.
- Consider direct participation with TRC when the Proper Disposal Procedure is insufficient. XXX may consider ordering a mercury thermostat recycling container for each shop, work van/truck, or employee as necessary<sup>3</sup>.

As per this policy, the employee will do the following; See Appendix 3 for flow chart.

- 1. Sign the Employee Compliance Policy herein.
- 2. Remove the mercury thermostat during work order
- 3. Place the mercury thermostat in a 5 gallon bucket with a lid
- 4. Locate the closest collection point to job site
- 5. Drop off mercury thermostat at collection point as soon as convenient
- 6. Repeat as necessary

3 http://www.thermostat-recycle.org/signup/

HVAC Contractor Employee Compliance Policy - MERCURY THERMOSTAT DISPOSAL

Appendix 1 - Employee Proper Disposal Compliance Policy Form

XXX Section XXX of the XXX of XXX
Employee Proper Disposal Compliance Policy

It is the policy of XXX to strictly adhere to XXX of the XXX of XXX.

Employee compliance, as required by law, is required.

Therefore, as the undersigned, I agree to fully comply with this policy which includes properly disposing of all mercury thermostats I generate and to use the prescribed method of disposal set forth by Company Name. I also agree to <a href="MEVER">NEVER</a> intentionally dispose of mercury thermostats and to not leave the device(s) behind with the customer.

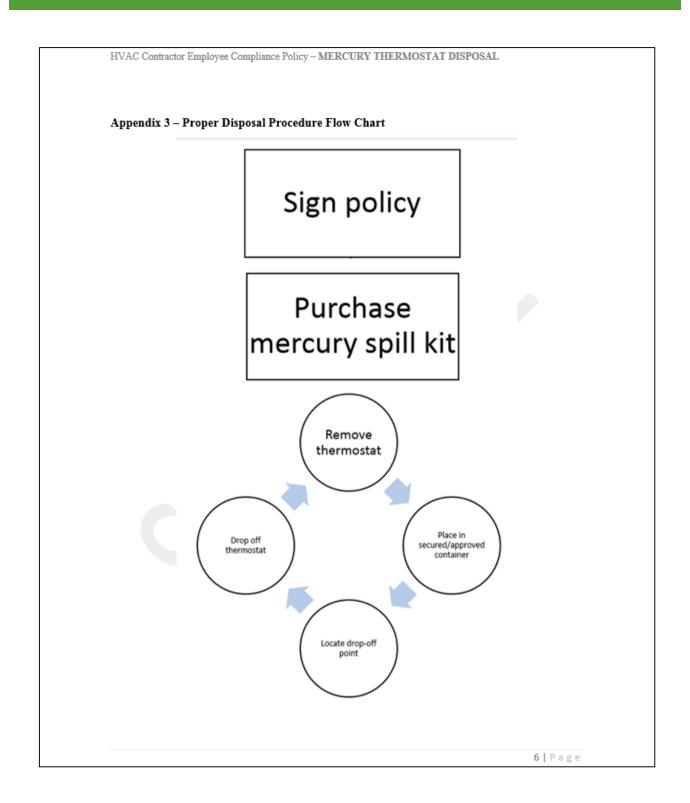
Should I fail to comply with the foregoing statements, I understand that I am in non-compliance with the law and accept full personal liability in connection with any action or actions that may occur.

Signed this	day of, 20	
Ву:		_(Print Name)
		_(Sign Name)

HVAC Contractor Employee Compliance Policy - MERCURY THERMOSTAT DISPOSAL

Appendix 2 - Table with state specific legislation

State	Sales Ban	Installation Ban	Disposal Ban	Mandatory Wholesale Distributor Collection	Mandatory Contractor Recycling
California	x	х	x	x	x
Connecticut	x		x	x	x
Florida	x	х	х		
Illinois	х	х	х	x	х
lowa	х	х	х	x	x
Louisiana			х		
Maine	х		х	x	x
Maryland	х				
Massachusetts	х		x	x	х
Michigan	х				
Minnesota	х		х		х
Montana	х	х		х	
New Hampshire	х	x	x	x	x
New York	x		х	x	x
Ohio	x				
Oregon	x	х	х		x
Pennsylvania	X		X	x	х
Rhode Island	х		х	x	x
Vermont	X		x	x	х
Washington	х				



### **APPENDIX 11: OPINION EDITORIAL**

#### A Simple Question to Help Keep Mercury out of Vermont's Environment

Are you aware that many thermostats manufactured prior to 2006 contain mercury? Or that a mercury thermostat contains at least **1,000** times more mercury than today's standard compact fluorescent light bulb (CFL)? Did you know that mercury thermostats are likely the largest remaining reservoir of mercury in homes today, and thousands end up in the trash each year?

In its various forms mercury can be harmful to human health and the environment. When mercury from thermostats ends up in the trash, it has been proven to trickle into landfills and waste incinerators, from which the mercury may enter our rivers, lakes and streams. In a natural environment, it converts into an even more toxic form that enters plants and animals in the food chain. And while thermostats are not a significant source of mercury pollution, they should be an easy one to control.

In 2008, mercury thermostat collection legislation was passed in Vermont requiring thermostat manufactures to establish collection programs for contractor and consumer-generated mercury thermostats and providing a financial incentive of \$5.00 for turning in a mercury thermostat for recycling. Recycling data nationwide suggests that in spite of laws banning the disposal of mercury thermostats (as in Vermont), some contractors or their employees as well as homeowners continue to discard thermostats containing mercury into the trash. In Vermont, there is a free and universally accessible recycling program for mercury thermostats that also offers a \$5.00 incentive payment.

With fall's arrival it's likely your heating contractor will be at your home to service your furnace or boiler for an annual system maintenance check or as homeowners, you might be doing this same winter preparation yourself.

If you think your thermostat may contain mercury, ask your heating technician. If it does, ask them to swap it out and properly recycle it.

Hopefully you will like the answer. However, if you don't like the answer, let the technician know that Vermont has a law to help them properly dispose of any thermostats they remove and tell them there is a \$5.00 incentive! New programmable thermostats can save you money on your heating bills.

While one inquiry from a customer may seem insignificant, the more contractors that hear about the free recycling options and that this is an issue you care about, the better.

And if you decide to upgrade your thermostat yourself, make sure you swap out your old mercury one for the \$5.00 incentive available at participating Household Hazardous Waste facilities or retail hardware stores throughout the state. For a list of thermostat collection locations for contractors and homeowners go to <a href="https://www.mercvt.org">www.mercvt.org</a> or call (802) 822-5736.

So don't forget to ask the question. Ensure that your HVAC contractor and/or you are doing the right thing for Vermont's environment by recycling every mercury thermostat, every time.

## APPENDIX 12: SAMPLE UTILITY PROGRAM RFP REQUIREMENTS

Standard RFP Language for Management of Waste Mercury Thermostats Generated through direct installation (DI) of thermostats or HVAC Equipment

#### **Background**

Mercury thermostats were widely used to control heating and cooling systems starting in the 1950s. Mercury thermostats dominated the market until the early 1990s when electronic thermostats began to gain wider acceptance in the market. All major manufacturers ceased production of mercury switch thermostats by 2009. While the number remaining in use is unknown, they are still found on some heating and cooling systems installed prior to 2006.

Mercury thermostats are still prevalent in the following types of facilities;

- Residential single family homes either attached, detached, or semi-attached
- Residential multifamily homes such as apartments or low income housing structures
- Light commercial buildings such as hotels, restaurants, banks, and retail outlets
- Educational buildings such as schools, colleges, and libraries
- Barracks and other military installations

#### **Statutory Authorities**

<u>Title 21 Section</u> 27-2105 of New York Environmental Conservation Law (ECL) prohibits knowing disposal of mercury thermostats in solid waste <u>and waste mercury thermostats can be managed</u> as "Universal Wastes" under the Federal Resource Recovery and Conservation Act (40 CFR Part 273)"

Title 29, Section 27-2909 of ECL also requires the following:

## APPENDIX 12: SAMPLE UTILITY PROGRAM RFP REQUIREMENTS

§ 3. 1. Any person or contractor who replaces a mercury-containing thermostat from a building shall deliver the mercury-containing thermostat to an appropriate collection site.

#### And:

- 3. Any department, authority, instrumentality, or municipal corporation of the state administering a program that involves the removal or replacement of mercury containing thermostats as a result of any statutory requirement, shall inform contractors of their statutory obligations to deliver the mercury-containing thermostats to a collection site and prohibiting the disposal of such thermostats in a solid-waste facility.
- 4. Any contractor, organization or subcontractor of such organization, who contracts with or receives funding or financing provided in whole or in part by or through any department, agency, instrumentality, or political subdivision of the state for the installation, service, or removal of heating, ventilation, or air-conditioning components resulting in the removal or handling of out-of-service mercury thermostats, shall ensure the collection, transportation and proper management of out-of-service mercury thermostats in accordance with the provisions of title 29 of article 27 of the environmental conservation law.

#### **RFP** Language

The vendor, all subcontractors, and affiliated parties in the trade channel including but not limited to trade allies, preferred installation vendors or rebate processors must comply with all applicable federal, state, local regulations in relation to the proper management and disposal of waste mercury thermostats generated in the performance of the requested scope of work. The vendor will describe efforts to inform program subcontractors and affiliated parties in the trade channel including but not limited to trade allies, preferred installation vendors or rebate processors on New York law relative to the removal and disposal of mercury thermostats. The vendor should also describe any planned steps to support and/or facilitate the collection of mercury thermostats generated through this program by direct participation in the TRC program. The vendor will describe procedures

# APPENDIX 12: SAMPLE UTILITY PROGRAM RFP REQUIREMENTS

all technicians (direct installers) will follow to identify mercury thermostats and ensure proper management of all mercury thermostats removed from service. The vendor will also describe the procedures to monitor and document (report) compliance with the above requirement and for meeting post project reporting requirements below. The successful vendor may be required to provide more information to verify its compliance with above requirement which will include at a minimum;

- A post project report of the following information;
  - Total number of thermostats installed
  - o The number of mercury thermostats removed from service
  - The number of mercury thermostats recycled and the location(s) where the thermostats were recycled.

### APPENDIX 13: MAY EMAIL TO AESP SUBSCRIBER LIST

## **Mercury Thermostats**

#### **Curtailment Providers Regulatory Obligations**

When you direct install HVAC equipment you will likely generate waste mercury thermostats. U.S. EPA and state environmental agencies regulate the disposal of these devices.

Failure to properly manage waste mercury thermostats and recycle them could lead to fines up to \$25,000 per violation.

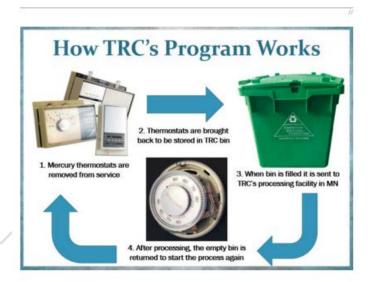
Each mercury thermostat contains at least 1,000 times more mercury than a CFL bulb. Recycle every mercury thermostat, every time.

#### Take Advantage of the Non-profit Stewardship Program for Recycling

Sign up online by 5/31/15 and enter AESP in the Pramo Code field to receive a free recycling container from TRC, The container holds approximately 100 mercury thermostats and contains all necessary materials for recurring shipments to TRC at no cost to you.

If you need more than one recycling container, or for more information about the program, please call me at (571) 302-0877 or email me directly.

Order Free Bin



#### Join Others in the Industry Using TRC's Program

Here's a sample of implementars that have taken advantage of TRC's program:

- · Honeywell Utility Solutions (Wichita, KS; Deer Park, IL; Brooklyn Heights, OH)
- Franklin Energy (Chicago, IL; Grand Rapids, M; Green Bay, WI)
- CleaResult (Downers Grove, IL; Negaunee, M; Okemos, MI)
- Comverge (Cincinnati, OH; Beltsville, MD; Mays Landing, NJ)

### APPENDIX 14: AUGUST EMAIL TO AESP SUBSCRIBER LIST

#### **Curtailment Provider Regulatory Obligations**

The disposal of mercury thermostats is regulated under federal and state law. Compliance begins with understanding your legal obligations nationally and in certain states. Any mercury thermostat removed from a commercial building must be recycled. Recycling requirements for mercury thermostats removed from residential buildings varies by state.

Don't contribute to mercury pollution. Integrate recycling into all of your projects that replace mercury thermostats.

Non-compliance in certain states can lead to fines up to \$25,000 per incident. Besides, these devices contain at least 1,000 times more mercury than a CFL bulb and they shouldn't be put in the trash.

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### Free Mercury Thermostat Recycling

The good news is that Thermostat Recycling Corporation (TRC) will offer free recycling containers and ongoing disposal to curtailment providers. This program does not increase your costs and is completely free.

To start free recycling, contact Ryan Kiscaden by 8/31 via email or at 571-302-0877.



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### Join Others in the Industry Using TRC's Program

Here's a sample of implementers that have taken advantage of TRC's program:

- · Honeywell Utility Solutions (Wichita, KS; Deer Park, IL; Brooklyn Heights, OH)
- · Franklin Energy (Chicago, IL; Grand Rapids, MI; Green Bay, WI)
- CleaResult (Downers Grove, IL; Negaunee, MI; Okemos, MI)
- · Comverge (Cincinnati, OH; Beltsville, MD; Mays Landing, NJ)

Collection Location Name	Business Type	Street 1	City	Zip	County	Count- Bins at Location	Total Stats	Total Switches	Total Hg	Date(s) of Bin(s) Receipt
Miles True Value Lumber	Retailers	178 Chittenden Dr.	Arlington	05250	Bennington County	1	17	17	0.11	03/12/2015
Greater Upper Valley Solid Waste Management District	HHW Facility	38 Ascutney Park Road	Ascutney	05030	Windsor County	1	0	0	0.00	
Springfield Transfer Station	HHW Facility	P. O. Box 320	Ascutney	05030	Windsor County	1	29	35	0.22	04/16/2015
Weathersfield Transfer Station	HHW Facility	Post Office Box 550	Ascutney	05030	Windsor County	1	4	4	0.02	04/16/2015
Aubuchon Hardware #049	Retailers	214 Main St	Barre	05641	Washington County	1	0	0	0.00	
Ced Twin State Electric Supply	Wholesalers	413 Industrial Lane	Barre	05641	Washington County	1	8	8	0.05	03/06/2015
Central Vermont Solid Waste Management District	HHW Facility	540 N. Main Street	Barre	05641	Washington County	2	0	0	0.00	
F.W. Webb Co.	Wholesalers	10 Clark Road	Barre	05641	Washington County	1	0	0	0.00	
Nelson Ace Hardware	Retailers	188 N Main St. Suite #4	Barre	05641	Washington County	1	74	78	0.48	03/06/2015
The Granite Group	Wholesalers	1193 Us Route 302	Barre	05641	Washington County	1	0	0	0.00	
Vermont Dept. Of	HHW Facility	5 Perry St., Suite 80	Barre	05641	Washington County	4	0	0	0.00	

Environmental Conservation										
J & H Hardware	Retailers	20 The Square	Bellows Falls	05101	Windham County	1	6	6	0.04	09/11/2015
Rockingham Transfer Station	HHW Facility	Town Of Rockingham	Bellows Falls	05101	Windham County	1	3	3	0.02	04/16/2015
Bennington Cooling & Heating	Contractor	303 Depot Street	Bennington	05201	Bennington County	1	0	0	0.00	
F.W. Webb Co.	Wholesalers	240 East Road	Bennington	05201	Bennington County	2	18	18	0.11	08/12/2015
Granite City Electric Supply	Wholesalers	435 Morse Road	Bennington	05201	Bennington County	2	0	0	0.00	
Hayden Plumbing & Heating, Inc.	Contractor	517 Gage Street	Bennington	05201	Bennington County	1	0	0	0.00	
Midstate Electric Supply Corp	Wholesalers	64 Vast Lane	Berlin	05641	Washington County	1	0	0	0.00	
Gilmore Home Center	Retailers	427 Route 4A West	Bomoseen	05732	Rutland County	1	4	4	0.02	05/08/2015
Aubuchon Hardware #053	Retailers	204 Main Street	Bradford	05033	Orange County	1	15	15	0.09	09/10/2015
Aubuchon Hardware #046	Retailers	10 Center Street	Brandon	05733	Rutland County	1	0	0	0.00	
Hulbert Supply Co. Inc	Wholesalers	2544 Franklin Street	Brandon	05733	Rutland County	1	5	5	0.03	12/31/2015
Brown And Roberts	Retailers	182 Main St.	Brattleboro	05301	Windham County	1	29	29	0.18	09/08/2015
F.W. Webb Co.	Wholesalers	231 John Seitz Dr.	Brattleboro	05301	Windham County	1	45	48	0.30	04/06/2015, 09/09/2015

Martin Fireside True Value	Retailers	895 Putney Road	Brattleboro	05301	Windham County	2	0	0	0.00	
Vermont Plumbing Supply	Wholesalers	22 Browne Ct.	Brattleboro	05301	Windham County	1	0	0	0.00	
Windham Solid Waste Management District	HHW Facility	327 Old Ferry Road	Brattleboro	05301	Windham County	7	0	0	0.00	
Broughtons True Value	Retailers	3437 Vt Rt. 22A	Bridport	05734	Addison County	1	2	2	0.01	12/04/2015
Huestis Farm Supply	Retailers	3877 Crown Pt. Rd.	Bridport	05734	Addison County	1	0	0	0.00	
Martin's Hardware & Building Supply, Inc.	Retailers	68 West St.	Bristol	05443	Addison County	1	37	37	0.23	08/25/2015
Bibens Ace Hills Hardware	Retailers	1127 North Avenue	Burlington	05408	Chittenden County	1	32	32	0.20	09/03/2015
Hulbert Supply Co. Inc	Wholesalers	332 Pine Street	Burlington	05401	Chittenden County	2	0	0	0.00	
The Granite Group	Wholesalers	180 Flynn Ave	Burlington	05401	Chittenden County	2	35	44	0.27	05/27/2015
Harry's Hardware	Retailers	3087 Main Street	Cabot	05647	Washington County	1	0	0	0.00	
Cavendish Transfer Station	HHW Facility	354 Route 131	Cavendish	05142	Windsor County	1	1	1	0.01	12/14/2015
Green Mountain Electric Supply	Wholesalers	356 Rathe Road	Colchester	05446	Chittenden County	1	0	0	0.00	
Lakeshore Ace	Retailers	713 W. Lakeshore Dr.	Colchester	05446	Chittenden County	1	0	0	0.00	

Walsh Electric Supply	Wholesalers	30 Champlain Drive	Colchester	05446	Chittenden County	1	0	0	0.00	
E.C. Crosby & Sons Inc	Retailers	372 Easy St	Danby	05739	Rutland County	1	0	0	0.00	
Poulin Lumber	Retailers	3639 Us Route 5	Derby	05829	Orleans County	1	12	12	0.07	06/04/2015
Green Mtn. Electric Supply	Wholesalers	24 Ossie Road	East Middlebury	05740	Addison County	1	0	0	0.00	
Greens Ace Hardware	Retailers	10 Railroad Street	Enosburg Falls	05450	Franklin County	1	18	18	0.11	05/11/2015
Sticks & Stuff	Retailers	2 Orchard Street	Enosburg Falls	05450	Franklin County	1	0	0	0.00	
Bibens Ace Hardware Essex	Retailers	15 Essex Way	Essex	05452	Chittenden County	1	0	0	0.00	
Aubuchon Hardware # 071	Retailers	Essex Junction Shopping Center, 87 Pearl Street	Essex Junction	05452	Chittenden County	1	0	0	0.00	
Aubuchon Hardware #079	Retailers	654 Vermont Rte 22A	Fair Haven	05743	Rutland County	1	0	0	0.00	
Northwest Vermont Solid Waste Management District	HHW Facility	158 Morse Dr.	Fairax	05454	Franklin County	2	27	27	0.17	08/12/2015
J & L Hardware	Retailers	4 Field Rd	Fairfax	05454	Franklin County	1	0	0	0.00	
Willeys True Value	Retailers	7 Breezy Ave.	Greensboro	05841	Orleans County	1	0	0	0.00	

Poulin Lumber	Retailers	439 Wolcott Street	Hardwick	05843	Caledonia County	1	0	0	0.00	
O C Mccuin & Sons True Value	Retailers	3337 Vt Rt. 78	Highgate Center	05459	Franklin County	1	13	14	0.09	04/08/2015
Aubuchon Hardware	Retailers	22 Commerce Street, Unit 1	Hinesburg	05461	Chittenden County	2	0	0	0.00	
Gervais Ace Hardware	Retailers	62 Cross St	Island Pond	05846	Essex County	1	0	0	0.00	
Aubuchon Hardware #161	Retailers	4879 Route 15	Jeffersonville	05464	Lamoille County	2	0	0	0.00	
Jerihill Home Center	Retailers	249 Vermont Route 15, Po Box 298	Jericho	05465	Chittenden County	1	18	18	0.11	04/01/2015
Johnson Hardware & Rental	Retailers	1442 Vt Rte 15W	Johnson	05656	Lamoille County	1	0	0	0.00	
Parker & Stearns Inc.	Retailers	405 Railroad St.	Johnson	05656	Lamoille County	1	0	0	0.00	
Goodro Lumber & True Value	Retailers	4489 Rte 4	Killington	05751	Rutland County	1	2	2	0.01	04/08/2015
Aubuchon Hardware #042	Retailers	142 Main Street	Ludlow	05149	Windsor County	1	0	0	0.00	
Ludlow Transfer Station	HHW Facility	Po Box 359	Ludlow	05149	Windsor County	1	9	9	0.06	04/16/2015
Bourne's Energy/Hopkins Oil	Contractor	230 Main Street	Lyndonville	05851	Caledonia County	1	0	0	0.00	
Lyndonville Hardware	Retailers	583 Broad St.	Lyndonville	05851	Caledonia County	1	3	3	0.02	04/08/2015

Northeast Kingdom Waste Management District	HHW Facility	224 Church Street	Lyndonville	05851	Caledonia County	7	0	0	0.00	
Wheeler True Value	Retailers	152 Church Street, Po Box 72	Lyndonville	05851	Caledonia County	1	0	0	0.00	
Aubuchon Hardware #091	Retailers	Manchester Shopping Center Route 11 & 30	Manchester Center	05255	Bennington County	1	0	0	0.00	
R. K. Miles, Inc.	Retailers	618 Depot Street	Manchester Center	05255	Bennington County	1	21	41	0.25	01/06/2015, 11/16/2015
Addison County Solid Waste Management	HHW Facility	1223 Route 7 South	Middlebury	05753	Addison County	1	45	50	0.31	08/28/2015
Aubuchon Hardware #063	Retailers	Village Court, 40 Court Street, Unit 2	Middlebury	05753	Addison County	1	0	0	0.00	
Macintyre Plmg. & Htg.	Contractor	213 Exchange Street	Middlebury	05753	Addison County	1	47	57	0.35	08/04/2015
Martin's Hardware & Building Supply, Inc.	Retailers	859 Route 7 South	Middlebury	05753	Addison County	1	13	13	0.08	12/09/2015
Sticks & Stuff	Retailers	13 Gallagher Road	Middlesex	05602	Washington County	1	0	0	0.00	
Aubuchon Hardware #100	Retailers	Milton Plaza, Rfd #1, Po Box 100	Milton	05468	Chittenden County	1	0	0	0.00	

Milton Ace	Retailers	389 Route 7	Milton	05468	Chittenden	1	6	6	0.04	09/15/2015
Hardware		South			County					
Blodgett Supply Co.	Wholesalers	26 Gallison Hill Rd.	Monpellier	05602	Washington County	2	61	62	0.38	06/15/2015
Aubuchon Hardware #045	Retailers	40 Main Street	Montpelier	05602	Washington County	1	62	65	0.40	01/29/2015
Aubuchon Hardware #057	Retailers	925-A Brooklyn Street	Morrisville	05661	Lamoille County	1	0	0	0.00	
Bourne's Energy.	Contractor	72 Lower Main St Po Box 549	Morrisville	05661	Lamoille County	1	0	0	0.00	
Country Home Center	Retailers	85 Center Road	Morrisville	05661	Lamoille County	1	20	20	0.12	09/14/2015
Lamoille Regional Solid Waste Management District	HHW Facility	29 Sunset Drive	Morrisville	05661	Lamoille County	4	3	3	0.02	04/16/2015
Yankee Electric Supply	Wholesalers	106 Goodell Avenue	Morrisville	05661	Lamoille County	2	1	1	0.01	09/15/2015, 09/24/2015
Biben's Home Center	Retailers	362 River Road	N. Springfield	05150	Windsor County	1	0	0	0.00	
W.W. Building Supply	Retailers	7 Loop Road	Newfane	05345	Windham County	1	4	4	0.02	12/07/2015
Blodgett Supply	Wholesalers	832 Pleasant Ave	Newport	05857	Orleans County	2	0	0	0.00	
Green Mountain Electric Supply	Wholesalers	5452 Us Route 5 #G	Newport	05855	Orleans County	1	0	0	0.00	
Pick & Shovel	Retailers	54 Coventry Street	Newport	05855	Orleans County	1	8	10	0.06	08/18/2015

The Granite Group	Wholesalers	565 Union St.	Newport	05855	Orleans County	1	0	0	0.00	
Aubuchon Hardware # 102	Retailers	63 Plaza Drive Unite # 2	Northfield	05663	Washington County	1	0	0	0.00	
Kenyon's Hardware	Retailers	93 North Main Street	Northfield	05663	Washington County	2	17	17	0.11	02/17/2015
Fogg's Hardware	Retailers	301 Route 5 South	Norwich	05055	Windsor County	1	15	15	0.09	12/31/2015
Collette Plumbing & Heating	Contractor	17 Main Street	Orleans	05860	Orleans County	2	0	0	0.00	
Evansville Trading Post	Retailers	645 Evansville Road	Orleans	05860	Orleans County	1	0	0	0.00	
Dundons Plmg. & Htg.	Contractor	Po Box 100, Route 22A	Orwell	05760	Addison County	1	0	0	0.00	
Williams Hardware	Retailers	51 Main Street, Ste. 1	Poultney	05764	Rutland County	1	0	0	0.00	
Central Supplies	Retailers	839 Vt Route 12	Randolph	05060	Orange County	1	0	0	0.00	
Richmond Home Supply	Retailers	99 Railroad St.	Richmond	05477	Chittenden County	1	0	0	0.00	
The Hardware At Rochester	Retailers	56 North Main St.	Rochester	05767	Windsor County	1	21	21	0.13	04/08/2015, 09/10/2015
Bethel - Royalton Transfer Station	HHW Facility	122 Waterman Road	Royalton	05068	Windsor County	1	0	0	0.00	
Aubuchon Hardware #047	Retailers	122 West Street	Rutland	05701	Rutland County	1	6	6	0.04	08/31/2015

Ced/Twin State Electric Suply	Wholesalers	207 Randbury Road #B	Rutland	05701	Rutland County	1	13	29	0.18	03/04/2015
D.T. Supply	Wholesalers	65 River Street	Rutland	05701	Rutland County	2	0	0	0.00	
F.W. Webb Co.	Wholesalers	3091 Cold River Road	Rutland	05701	Rutland County	1	0	0	0.00	
Noble Ace Hardware	Retailers	261 N Main St	Rutland	05701	Rutland County	1	0	0	0.00	
Sid Harvey Industries	Wholesalers	363 Quality Lane	Rutland	05701	Rutland County	1	0	0	0.00	
The Granite Group	Wholesalers	160 Seward Rd	Rutland	05701	Rutland County	1	0	0	0.00	
United Refrigeration	Wholesalers	207 C Randbury Road	Rutland	05701	Rutland County	1	0	0	0.00	
Bibbins Ace	Retailers	1961 Williston Rd	S Burlington	05403	Chittenden County	1	49	52	0.32	02/04/2015, 08/14/2015, 11/13/2015
W.E. Aubuchon Co In	Retailers	47 Commerace Square	S Burlington	05403	Chittenden County	1	5	5	0.03	12/15/2015
The Simons Company	Wholesalers	3 Calkins Court	S. Burlington	05403	Chittenden County	1	0	0	0.00	
Signa Lumber Inc.	Retailers	2046 Vt Rte 100	S. Londonderry	05155	Windham County	1	0	0	0.00	
F.W. Webb Co.	Wholesalers	5 Franklin Park W.	Saint Albans	05478	Franklin County	1	42	48	0.30	04/20/2015
Aubuchon Store #173	Retailers	50 Shelburne Shopping Plaza	Shelburne	05482	Chittenden County	2	6	6	0.04	12/31/2015

Isabelle Electric	Wholesalers	Po Box 236	South Barre	05670	Washington County	1	0	0	0.00	
Ced Twin State Electric	Wholesalers	4 Calkins Court	South Burlington	05403	Chittenden County	2	7	7	0.04	08/05/2015
Chittenden Solid Waste District- Environmental Depot	HHW Facility	1011 Airport Parkway	South Burlington	05403	Chittenden County	3	576	638	3.96	02/10/2015, 04/24/2015, 05/14/2015, 07/24/2015, 09/29/2015, 12/09/2015, 12/28/2015
Grainger Industrial Supply	Wholesalers	20 Gregory Drive	South Burlington	05403	Chittenden County	1	0	0	0.00	
The Granite Group	Wholesalers	37 Commerce Avenue	South Burlington	05403	Chittenden County	1	0	0	0.00	
Londonderry Solid Waste Group	HHW Facility	100 Old School Street	South Londonderry	05155	Windham County	1	5	5	0.03	12/22/2015
Welch's True Value	Retailers	3626 Vt Route 14	South Royalton	05068	Windsor County	1	12	12	0.07	05/15/2015
F.W. Webb Co.	Wholesalers	5 Charlestown Road	Springfield	05156	Windsor County	1	14	15	0.09	09/09/2015
Appalachian Supply	Wholesalers	4581 Memorial Drive	St Johnsbury	05819	Caledonia County	1	5	5	0.03	08/10/2015
Aubuchon Hardware #072	Retailers	204 Swanton Rd.	St. Albans	05478	Franklin County	1	0	0	0.00	
Green Mountain Electric Supply	Wholesalers	7506 Ethan Allen Hwy Unit 5	St. Albans	05478	Franklin County	1	0	0	0.00	

Gtm Electric Supply	Wholesalers	362 Swanton Road	St. Albans	05478	Franklin County	1	0	0	0.00	
Sticks & Stuff	Retailers	4 Lower Newton Street	St. Albans	05478	Franklin County	1	0	0	0.00	
Ced Twin State Electric Supply	Wholesalers	416 Back Center Road	St. Johnsbury	05819	Caledonia County	1	0	0	0.00	
F.W. Webb Co.	Wholesalers	2409 Portland Street	St. Johnsbury	05819	Caledonia County	1	47	57	0.35	09/16/2015
Green Mountain Electric Supply	Wholesalers	709 Portland Street	St. Johnsbury	05819	Caledonia County	1	17	17	0.11	09/11/2015
St. Jay Hardware, Inc.	Retailers	74 Eastern Avenue	St. Johnsbury	05819	Caledonia County	1	16	16	0.10	09/14/2015
W.E. Aubuchon Co. Inc. Store #025	Retailers	664 Memorial Drive, Suite 2	St. Johnsbury	05819	Caledonia County	1	24	26	0.16	09/11/2015
Stowe Hardware	Retailers	430 Mountain Road P.O. Box 66	Stowe	05672	Lamoille County	1	0	0	0.00	
Bournes	Contractor	10 Canada Drive	Swanton	05488	Franklin County	1	0	0	0.00	
Swanton Lumber	Retailers	11 N River Street	Swanton	05488	Franklin County	1	0	0	0.00	
Ledge Hill Plumbing & Heating, Inc.	Contractor	5000 Jersey Street	Vergennes	05491	Addison County	1	0	0	0.00	
W.E. Aubuchon Hardware #083	Retailers	113 Unit F Monkton Rd.	Vergennes	05491	Addison County	1	46	51	0.32	06/22/2015

Bisbee's Hardware	Retailers	109 Mad River Green	Waitsfield	05673	Washington County	1	55	55	0.34	09/14/2015
Kenyon's Variety	Retailers	3337 Main Street	Waitsfield	05673	Washington County	1	0	0	0.00	
Bourne's Energy	Contractor	17 North Main Street	Waterbury	05676	Washington County	1	0	0	0.00	
Halloran Hardware Tv	Retailers	838 Waterbury- Stowe Road	Waterbury	05676	Washington County	1	20	20	0.12	03/30/2015, 09/10/2015
Vt Dept Of Environmental Conservation	HHW Facility	103 South Main Street	Waterbury	05671	Washington County	2	0	0	0.00	
Vt Dept. Of Environmental Conservation	HHW Facility	The Cannery 103 South Main Street	Waterbury	05671	Washington County	2	0	0	0.00	
Mad River Resource Management	HHW Facility	425 Thatcher Brook Road	Waterbury Center	05677	Washington County	1	5	5	0.03	04/24/2015
Larrabees Building Supply	Retailers	1410 Route 2, Po Box 67	West Danville	05873	Caledonia County	1	0	0	0.00	
Blodgett Supply	Wholesalers	606 Hartford Ave	White River Jct.	05001	Windsor County	2	15	18	0.11	09/11/2015
Town Of Hartford Transfer Station	HHW Facility	2590 N. Hartland Road	White River Junction	05001	Windsor County	1	0	0	0.00	
Ced Twin State Electric Supply	Wholesalers	138 Occott Drive	Wilder	05088	Windsor County	1	0	0	0.00	
Farm N Country Hardware	Retailers	2383 Vt Route 14	Williamstown	05679	Orange County	1	0	0	0.00	
Poulin Lumber Inc.	Retailers	258 Meadow St.	Williamstown	05679	Orange County	1	5	5	0.03	08/14/2015

Blodgett Supply	Wholesalers	100 Ave D	Williston	05495	Chittenden County	1	111	208	1.29	04/01/2015, 12/01/2015
Carrier Enterprise	Wholesalers	74 Armand Lane	Williston	05495	Chittenden County	1	0	0	0.00	
F.W. Webb Co.	Wholesalers	80 Park Ave	Williston	05495	Chittenden County	1	0	0	0.00	
Mountain Air Systems	Contractor	430 Commerce Street	Williston	05495	Chittenden County	1	0	0	0.00	
R.E. Michel Company, Inc	Wholesalers	230 Pioneer Drive	Williston	05495	Chittenden County	2	43	45	0.28	12/14/2015
R.J. Murray Co.	Wholesalers	79 Holly Court	Williston	05495	Chittenden County	1	8	32	0.20	10/27/2015
Sid Harvey Industries	Wholesalers	86 Leroy Road	Williston	05495	Chittenden County	2	0	0	0.00	
W.W. Building Supply	Retailers	434 Route 100 North	Wilmington	05363	Windham County	2	0	0	0.00	
Aubuchon Hardware #039	Retailers	2745 Us Rt. 5 North	Windsor	05089	Windsor County	1	6	6	0.04	08/11/2015
Yankee Electric Supply, Inc	Wholesalers	201 Main Street	Winooski	05404	Chittenden County	1	0	0	0.00	
Welch's Woodstock True Value	Retailers	2517 West Woodstock Road	Woodstock	05091	Windsor County	1	19	19	0.12	09/02/2015
Woodstock Home & Hardware	Retailers	Po Box 627	Woodstock	05091	Windsor County	1	13	13	0.08	04/23/2015