VIA EMAIL and US Mail

March 29, 2016

Mr. Rick Thompson
Department of Environmental Quality
PO Box 200901
1100 Last Chance Gulch
Helena, MT 59620

Subject: Thermostat Recycling Corporation’s 2015 Annual Report

Dear Mr. Thompson:

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 Montana:

- The program collected **229 thermostats in 2015**. This was a 15% decrease compared to the number of thermostats collected in 2014.
- In 2015 the program **collected 1.59 pounds of mercury** in the state of Montana. Since 2004, the annual pounds of mercury collected in Montana has increased by an average of 26% per year. During the same time period, the pounds of mercury collected in the nation increased by 10% per year.
- TRC’s website traffic continued to increase in 2015. There was a **153% increase of visitors** from Montana while TRC increased its total annual visitors by **71% compared to 2014**.
- The counties with the most bins returned in 2015 were **Yellowstone** (3 bins), **Missoula** (2 bins), and **Gallatin** (1 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
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In 2015, TRC recovered 1.59 pounds of mercury from the equivalent of 231 mercury thermostats. A total of 229 intact mercury thermostats and 256 mercury thermostat switches were recovered from Montana collection locations in 2015 (mercury thermostats recovered from Montana locations averaged 1.11 switches per thermostat in 2015).

TRC recovered 79% of mercury thermostat collections from HVAC wholesale distributor collection locations (63%), and the remaining 21% from retail locations.

EXHIBIT 1: 2015 MONTANA COLLECTIONS BY BRAND

<table>
<thead>
<tr>
<th>Brand Holder</th>
<th>Thermostats</th>
<th>Count Switches</th>
<th>Pounds Mercury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrier</td>
<td>1</td>
<td>1</td>
<td>0.0062</td>
</tr>
<tr>
<td>Honeywell</td>
<td>199</td>
<td>215</td>
<td>1.333</td>
</tr>
<tr>
<td>Lennox</td>
<td>3</td>
<td>3</td>
<td>0.0186</td>
</tr>
<tr>
<td>Lux Products</td>
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<td>3</td>
<td>0.0186</td>
</tr>
<tr>
<td>Sears Holdings</td>
<td>2</td>
<td>2</td>
<td>0.0124</td>
</tr>
<tr>
<td>Trane</td>
<td>5</td>
<td>10</td>
<td>0.062</td>
</tr>
<tr>
<td>White Rogers</td>
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<td>0.1116</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td><strong>Non-Member Brands</strong></td>
<td></td>
<td></td>
<td><strong>0.0124</strong></td>
</tr>
<tr>
<td>QUAD</td>
<td>2</td>
<td>2</td>
<td>0.0124</td>
</tr>
<tr>
<td>NOM (Manufacturer not Identifiable)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Loose Bulbs</td>
<td>0</td>
<td>2</td>
<td>0.0124</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>229</strong></td>
<td><strong>256</strong></td>
<td><strong>1.59</strong></td>
</tr>
</tbody>
</table>

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 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
All facilities processing thermostats shipped to TRC follow 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

- 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 12 reminders in March, 12 in July, and 12 in November.

- On 7/17 TRC mailed letters to Heating, Air-conditioning & Refrigeration Distributors International (HARDI) member CEOs with location branches in mandatory program states, including one in Montana. The letter encouraged them to conduct an original equipment manufacturer (OEM) Mercury thermostat cleanout at their branches, and included a sample memo for HARDI CEOs to distribute to their collection locations. (Appendix 1)

- On 7/28 TRC mailed sales letters to five Northwest Pipe Fittings wholesale distributor locations who were not currently participating in TRC’s program (Appendix 2). The letter reminded them of their legal obligation to collect mercury thermostats and encouraged them to sign up for TRC’s program. Additionally TRC sent a supplementary letter to the Northwest Pipe Fittings CEO (Appendix 3). None of the locations signed up for the program.
EXHIBIT 2: REMINDER POSTCARD

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 Montana-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.

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).
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:

- **Johnstone Supply Flyer**, a printed version of their online catalogue that is mailed to more than 300,000 HVAC contractors nationwide. The flyer featured a full page TRC advertisement in their August issue to promote the TRC TV giveaway promotion (Exhibit 3). Johnstone Supply has two locations in Minnesota. Johnstone Supply provided this insertion at no-cost to TRC.

- **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 4)

- **HVACR Business Magazine**, a national publication with approximately 34,000 qualified subscribers. TRC ran a full color 1/4 page advertisement in January, March and July. (Exhibit 5)
EXHIBIT 3: JOHNSTONE SUPPLY FLYER AD

EXHIBIT 4: DISTRIBUTION CENTER MAGAZINE ADS

May:

December:
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:

- *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 6)
**PROGRAM EDUCATION AND OUTREACH**

- *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 6)
- NATE Enewsletter, sent bi-monthly to 31,900 opt-in subscribers. TRC ran a text ad that received a 0.14% CTR.

**EXHIBIT 6: ACHR NEWS AND DISTRIBUTION CENTER ENEWSLETTER AD**

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

- 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 7). 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 8)
- 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 9)
• 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 9)
• HVAC-Talk.com, an online forum that averages more than 300,000 monthly visitors. TRC ran a rotating banner ad in February, March and July which resulted in 291,706 total impressions and an average CTR of .03%. (Exhibit 8)
Exhibit 10 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.
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, and also in Montana (Exhibit 11). 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 Montana campaign yielded 155,523 impressions with an average CTR of 0.53%.

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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 12)
- Distribution Center (11,000 circulation)
- Contracting Business (40,000 circulation)
- Wholesale distributor's on-hold phone messaging, including Johnstone Supply and Standard Supply
- Johnstone Supply’s printed flyer (300,000 circulation)
- HVAC-Talk.com (408,769 monthly unique browsers)

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 was published in March 2016 in Distribution Center Magazine. There were hundreds of eligible HARDI members considered, making this a highly competitive group.
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 153% increase of visitors from Montana. 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 Montana:

- **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.

  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 900 in the Mountain region of the U.S.

- **February 9th – 13th: 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 3rd-4th: Johnstone Supply Member Meeting San Diego, CA**
  Johnstone Supply is a cooperative wholesaler distributor of HVAC parts and equipment
with over 380 locations nationwide, including two in Montana. Johnstone’s Annual Membership meeting is invitation only and TRC once again attended and exhibited as part of an ongoing effort with Johnstone to encourage and expand the cooperative’s members’ participation. The event is well attended by owners and senior staff and remains a unique opportunity to engage directly with key decision makers.

- **March 15th – 18th: 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 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: NAHMA 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's corporate made a business decision to engage in 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, 3 of its Lyon Conklin Co. stores, and 2 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 13).

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

EXHIBIT 13: FERGUSON NATIONAL EMAIL
Johnstone Supply National Promotion

In September, Johnstone Supply launched a 40 inch TV giveaway at 383 of their stores nationwide, including two in Montana. Each mercury thermostat recycled earned entry into the giveaway. The promotion was in partnership with Honeywell; a customer could earn additional entries by purchasing any new Honeywell thermostat. During the promotion, Johnstone Supply incorporated the TV giveaway promotion into their recorded messaging for customers calling who are put on hold. The message was 45 seconds long and was in rotation with several other messages.

TRC provided Johnstone Supply full color 18x24 posters and a new cardboard header (Exhibit 14) for the TRC merchandise display to promote awareness of the program in stores. A 4x6 sized postcard (Exhibit 15) was then sent to all Johnstone locations on 10/15 as a reminder to send in their bins after the TV promotion ended.

EXHIBIT 14: JOHNSTONE SUPPLY TV GIVEAWAY POSTER AND MERCHANDISE HEADER
OTHER PROGRAM ACTIVITIES

EXHIBIT 15: JOHNSTONE SUPPLY POSTCARD

Front Side:      Back Side:

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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 16). The competition ran May 1st – October 31st and participating locations shipped a total of 432lbs of mercury during the competition.
Merchandise Displays for TRC Bins

Throughout the year TRC distributed branded cardboard displays to HVAC wholesale distributor collection locations to showcase the TRC container (Exhibit 17). The purpose of the displays is to enhance the visibility and accessibility of the program to contractors at HVAC wholesale locations. These displays are provided at no-cost to distributors.

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.
OTHER PROGRAM ACTIVITIES

HVAC CONTRACTOR OUTREACH

TRC staff helped develop a draft model HVAC contractor environmental policy and shared it with the trade group, ACCA (Appendix 4). TRC’s goal is to work with ACCA and other trade groups to provide this template as a service for contractor’s employee handbooks.

HOUSEHOLD HAZARDOUS WASTE FACILITY OUTREACH

In September TRC developed a tri-fold brochure specifically for household hazardous waste (HHW) facilities to target their customers (Exhibit 18). 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.
EXHIBIT 18: HHW TRI-FOLD BROCHURE

Outside:

It’s Free
• There’s no charge to you.

It’s easy
• Store used mercury-switch thermostats safely once removed from service.
• Bring the used thermostats to a participating H&W facility to recycle.
• TRC requires no paperwork or tracking for homeowners.

It’s the right thing to do
• By recycling used mercury-switch thermostats, you help ensure a cleaner environment for all of us. One mercury thermostat contains as much as 500 times more mercury than a compact fluorescent light bulb.

Inside:

Frequently Asked Questions

What is the purpose of the Thermostat Recycling Corporation (TRC) program?
The goal is to recycle all mercury-containing thermostats that are recycled.

What should I do? Drop your mercury thermostats off at your local H&W facility.

What thermostats can I recycle? All brands of single-ganged, mercury switch thermostats.

Which HHWs participate? Nearly all recycling bins at hundreds of locations across the nation. See a list of participating collection sites at thermostatre-cycle.org.

What if my thermostat contains mercury? If the thermostat uses a dial or lever, odds are if it contains mercury and needs to be recycled.

What’s not accepted under TRC’s program?
• Loose mercury switches (bulbs) and mercury-switch thermostats
• Electronic thermostats and other thermostats without mercury switches
• Batteries, fluorescent light bulbs and other devices containing mercury

What happens after I drop off the old thermostats? When the collection bins fill up, they are returned to TRC’s recycling center. The switches are removed and forwarded to a mercury recycler.

Do I have to recycle mercury thermostats? Certain states prohibit the disposal of mercury thermostats in the trash. Some states require all HVAC contractors in the state to recycle every mercury thermostat removed from service. Visit our website to see which states are covered.

Do I need to recycle mercury thermostats? Hot thermostats are replaced by HVAC contractors. We encourage you to ask your contractor what they do with old mercury thermostats and inform them of this free program if they are not participating.
UTILITY PROGRAM/IMPLEMENTOR OUTREACH

TRC staff wrote model utility implementer RFP requirements to share with utility companies (Appendix 5). 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 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 6). TRC sent a follow up email in August (Appendix 7). 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.

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. 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:
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.

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...

![Pie chart showing the percentage of technicians who experienced an increase, decrease, or no change in the number of mercury containing thermostats encountered.]

- Increased: 7%
- Remained steady: 9%
- Decreased: 84%

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.
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 8 for survey raw results.
Below is a summary of TRC’s national program expenses for 2015. A copy of TRC’s 2014 IRS Form 990 is listed in Appendix 10.

**EXHIBIT 19: 2015 PROGRAM ADMINISTRATIVE EXPENSES**

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

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.
• **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 20: 2015 PROGRAM EXPENSES WITH MONTANA SPECIFIC COSTS

<table>
<thead>
<tr>
<th>Category</th>
<th>Total Expenses</th>
<th>National</th>
<th>MT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRC Staff and Administration</td>
<td>$625,204.88</td>
<td>$469,218.76</td>
<td>$3,034.95</td>
</tr>
<tr>
<td>Recycling Costs</td>
<td>$347,555.25</td>
<td>$199,057.25</td>
<td>$400.75</td>
</tr>
<tr>
<td>Incentive/Promotional Payments</td>
<td>$42,224.42</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>New Collection Containers</td>
<td>$10,960.00</td>
<td>$10,960.00</td>
<td>$</td>
</tr>
<tr>
<td>Travel</td>
<td>$81,152.16</td>
<td>$42,928.84</td>
<td>$231.82</td>
</tr>
<tr>
<td>Legal</td>
<td>$21,228.28</td>
<td>$3,104.90</td>
<td>$51.37</td>
</tr>
<tr>
<td>Direct Expense for Marketing &amp; Outreach</td>
<td>$277,994.50</td>
<td>$147,352.68</td>
<td>$5,479.96</td>
</tr>
<tr>
<td><strong>Total (expenses)</strong></td>
<td><strong>$1,406,319.49</strong></td>
<td><strong>$872,622.43</strong></td>
<td><strong>$9,198.85</strong></td>
</tr>
</tbody>
</table>

• **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.
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, Montana ordered 0.12% of all new container orders.
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 non-traditional 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 Minnesota, 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 21). 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 positive 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 21: ACHR NEWS FULL PAGE AD

Additionally in January, TRC launched a new branding campaign, “Recycle every mercury thermostat, every time” (Exhibit 22). The campaign messaging is based off frequent feedback TRC staff receives when contractors say “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 22: 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 shoulder (busier) seasons. 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
- 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.
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 Montana. According to a recent report, “they have not been placed in vehicles since model year 2003.” Mercury switch thermostats have not been sold since the mid 2000’s. 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 2.1 pounds of mercury and 254 thermostats per year since 2004. In 2015 the program collected 1.59 pounds of mercury from 229 thermostats, a decrease from the previous year of 34.9% in pounds of mercury and 15.2% 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.
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 has consistently remained above 5 bins per year since 2011.
Despite consistency in the number of bins returned, the **pounds of mercury collected in 2015 decreased by 35% below 2014 levels**. Since 2004, the annual pounds of mercury collected in MT has increased by an average of 26% per year. During the same time period, the pounds of mercury collected in the nation increased by 10% per year. It should be noted however, that the pounds of mercury collected in MT has been decreasing annually since 2012. 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.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Lbs Hg</th>
<th>% Change State</th>
<th>% Change US</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>0.56</td>
<td>N/A</td>
<td>17.0%</td>
</tr>
<tr>
<td>2005</td>
<td>1.36</td>
<td>142%</td>
<td>11.1%</td>
</tr>
<tr>
<td>2006</td>
<td>1.42</td>
<td>4%</td>
<td>32.1%</td>
</tr>
<tr>
<td>2007</td>
<td>1.32</td>
<td>-7%</td>
<td>2.0%</td>
</tr>
<tr>
<td>2008</td>
<td>3.24</td>
<td>145%</td>
<td>16.3%</td>
</tr>
<tr>
<td>2009</td>
<td>1.31</td>
<td>-60%</td>
<td>16.3%</td>
</tr>
<tr>
<td>2010</td>
<td>1.96</td>
<td>50%</td>
<td>26.1%</td>
</tr>
<tr>
<td>2011</td>
<td>3.46</td>
<td>77%</td>
<td>3.6%</td>
</tr>
<tr>
<td>2012</td>
<td>3.16</td>
<td>-9%</td>
<td>-5.3%</td>
</tr>
<tr>
<td>2013</td>
<td>3.09</td>
<td>-2%</td>
<td>-4.8%</td>
</tr>
<tr>
<td>2014</td>
<td>2.44</td>
<td>-21%</td>
<td>12.9%</td>
</tr>
<tr>
<td>2015</td>
<td>1.59</td>
<td>-35%</td>
<td>-1.4%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>2.08</strong></td>
<td><strong>26%</strong></td>
<td><strong>10%</strong></td>
</tr>
</tbody>
</table>

The state of MT collected 229 thermostats in 2015. This was a **15% decrease from the number of thermostats collected in 2014** but a **22% increase compared to 10 years ago**. The number of thermostats collected annually in MT has increased by an **average of 28% a year since 2004**. During the same time period, the number of thermostats collected in the US has increased by an annual average rate of 15%. Last year saw the number of thermostats in MT was the lowest number since 2009, and the highest number of thermostats collected in the state was in 2008 (435 thermostats). 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

![Graph showing the number of thermostats collected over time in Montana and the US.](image)

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

<table>
<thead>
<tr>
<th>Year</th>
<th>T-stats in MT</th>
<th>T-stats in US</th>
<th>% Change State</th>
<th>% Change US</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>84</td>
<td>81,115</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>2005</td>
<td>167</td>
<td>87,754</td>
<td>99%</td>
<td>8%</td>
</tr>
<tr>
<td>2006</td>
<td>187</td>
<td>113,658</td>
<td>12%</td>
<td>30%</td>
</tr>
<tr>
<td>2007</td>
<td>174</td>
<td>114,158</td>
<td>-7%</td>
<td>0%</td>
</tr>
<tr>
<td>2008</td>
<td>435</td>
<td>135,646</td>
<td>150%</td>
<td>19%</td>
</tr>
<tr>
<td>2009</td>
<td>124</td>
<td>155,731</td>
<td>-71%</td>
<td>15%</td>
</tr>
<tr>
<td>2010</td>
<td>277</td>
<td>200,064</td>
<td>123%</td>
<td>28%</td>
</tr>
<tr>
<td>2011</td>
<td>274</td>
<td>199,918</td>
<td>-1%</td>
<td>0%</td>
</tr>
<tr>
<td>2012</td>
<td>424</td>
<td>189,619</td>
<td>55%</td>
<td>-5%</td>
</tr>
<tr>
<td>2013</td>
<td>399</td>
<td>181,600</td>
<td>-6%</td>
<td>-4%</td>
</tr>
<tr>
<td>2014</td>
<td>270</td>
<td>203,346</td>
<td>-32%</td>
<td>12%</td>
</tr>
<tr>
<td>2015</td>
<td>229</td>
<td>198,603</td>
<td>-15%</td>
<td>-2%</td>
</tr>
<tr>
<td>Average</td>
<td>253.7</td>
<td>155,101.0</td>
<td>28%</td>
<td>15%</td>
</tr>
</tbody>
</table>
Figure 1.6 displays the monthly distribution of bins and thermostats collected in the state over 2015. Most of the bins in the state were returned in April (4 bins) with one bin returned each in the months of November and December (1 bin each). The most thermostats were returned were April (202 thermostats) followed by November (22 thermostats) and December (5 thermostats).

The highest number of thermostats per bin was in April (50.5). Figure 1.7 shows the average number of thermostats per returned bin per month for the year.
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 2004. In MT the number of thermostats per bin has also been decreasing and the 2015 average (38.2 thermostats / bin avg.) was the lowest on record. The 2015 average was below the 12 year average of 75.7 thermostats per bin.
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 negative correlation ($r=-.53$, $slope=-6.06$) between the two variables. This indicates that as more bins are returned, the number of thermostats per bin declines.
The total pounds of mercury collected per 10,000 residents was 0.15 in 2015. This is a 35% decrease from the 0.24 pounds per 10,000 residents collected in 2014 and equal to the 0.15 pounds per 10,000 residents collected a decade ago. The pounds of mercury collected per 10,000 residents reached a high of .35 in 2011 and has been decreasing every year since then, however, the .15 pounds collected per 10,000 residents in 2015 was still. Figure 1.10 displays the total pounds of mercury collected per 10,000 state residents over time.

**FIGURE 1.10: POUNDS OF MERCURY COLLECTED ANNUALLY PER 10,000 RESIDENTS**

![Graph showing pounds of mercury collected annually per 10,000 residents](image)

**CHANNEL PARTNER ANALYSIS**

Section 2 of the report examines the partner locations in more detail. The majority of thermostats collected in state were through wholesalers (79%) with the remaining thermostats collected by retailers (21%). Figure 2.1 shows the distribution of thermostats collected by location type in 2015.
The number of bins returned by wholesalers has been consistent at 4 bins from 2013 to 2015. Retailers in the state of MT sent back 1 more bin in 2015 (2) compared to 2014 (1). Figure 2.2 displays the change in the number of bins returned by thermostat collection type over time in the state.
In 2015, **20.8% of the locations** that had a bin in the state of MT sent back at least one bin for recycling. The distribution is displayed in Figure 2.3.

An analysis of the top performing counties in terms of total bin returns and total thermostats returned in 2015 was conducted. Only three counties in Montana returned bins in 2015. The county with the most bins returned in 2015 was **Yellowstone (3 bins)**, followed by **Missoula (2 bins)** and **Gallatin (1 bin)**. The county with the most thermostats returned in 2015 was **Missoula County (161)**. Figure 2.4 displays the total bins and thermostats returned, by county, in 2015.

### Figure 2.3: Percentage of Stores Returning a Bin in 2015

#### Figure 2.4: Bin Returns and Total Thermostats Returned in 2015 by County

<table>
<thead>
<tr>
<th>County</th>
<th>Total Bins</th>
<th>Total T-stats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellowstone County</td>
<td>3</td>
<td>63</td>
</tr>
<tr>
<td>Missoula County</td>
<td>2</td>
<td>161</td>
</tr>
<tr>
<td>Gallatin County</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>
Johnstone Supply Co. and RSD Refrigerator Supplies Dist (2 bins each) returned the highest number of bins in the state in 2015, followed by Montana Ace Hardware and Owenhouse Ace Hardware (1 bin each). Johnstone Supply offered a national giveaway for a TV, and they did appear as a top partner in MT. There were no additional partners to return a bin in MT. Figure 2.5 displays all of the partners in terms of total bins returned in 2015.

**FIGURE 2.5. TOP PERFORMING CHANNEL PARTNERS IN STATE**

![Bar chart showing the top performing partners in Montana]

Figure 2.6 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.
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 bin returned per location per year was lower in MT than the US average and the annual averages are shown in figure 3.1.

<table>
<thead>
<tr>
<th>Average number of bins returned per year per location</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Total</td>
<td>1.4</td>
<td>1.4</td>
<td>1.6</td>
<td>1.8</td>
</tr>
<tr>
<td>MT Average</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Figure 3.2 displays the locations in MT that returned a 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. Johnstone Supply and Refrigeration Supplies Distributor are the only partners that appears on both the state and the national lists.
### FIGURE 3.2: PARTNER LOCATIONS IN MT RETURNING MORE THAN 1 BIN PER YEAR 2012-2015

<table>
<thead>
<tr>
<th>Location</th>
<th>2012 Bins</th>
<th>Location</th>
<th>2014 Bins</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENSCO INC.</td>
<td>3</td>
<td>GENSCO INC.</td>
<td>2</td>
</tr>
<tr>
<td>Johnstone Supply</td>
<td>2</td>
<td>ACE Hardware</td>
<td>1</td>
</tr>
<tr>
<td>THERMAL SUPPLY</td>
<td>1</td>
<td>Refrigeration Supplies Distributor</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>THERMAL SUPPLY</td>
<td>1</td>
</tr>
<tr>
<td>Johnstone Supply</td>
<td>3</td>
<td>Johnstone Supply Co.</td>
<td>2</td>
</tr>
<tr>
<td>ACE Hardware</td>
<td>1</td>
<td>RSD Refrig Supplies Dist</td>
<td>2</td>
</tr>
<tr>
<td>THERMAL SUPPLY</td>
<td>1</td>
<td>Montana Ace Hardware</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Owenhouse Ace Hardware</td>
<td>1</td>
</tr>
</tbody>
</table>
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, 20.8% of the locations in MT returned a bin compared to a national average of 37.1%. MT had the lowest percentage of locations returning a bin in the US. The state with the highest percentage of locations returning a bin in 2015 was MN (54.5%).

<table>
<thead>
<tr>
<th>Location</th>
<th>2012</th>
<th>Location</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.E. Michel Company</td>
<td>276</td>
<td>R.E. Michel Company</td>
<td>461</td>
</tr>
<tr>
<td>Honeywell Inc.</td>
<td>195</td>
<td>Johnstone Supply</td>
<td>460</td>
</tr>
<tr>
<td>Johnstone Supply</td>
<td>178</td>
<td>US Air Conditioning Distributors, Inc.</td>
<td>127</td>
</tr>
<tr>
<td>United Refrigeration</td>
<td>107</td>
<td>Ferguson Enterprises</td>
<td>119</td>
</tr>
<tr>
<td>Ferguson Enterprises</td>
<td>94</td>
<td>United Refrigeration</td>
<td>114</td>
</tr>
<tr>
<td>Refrigeration Supplies Distributor</td>
<td>88</td>
<td>Goodman Distribution Inc.</td>
<td>95</td>
</tr>
<tr>
<td>Comverge</td>
<td>69</td>
<td>Honeywell Inc.</td>
<td>77</td>
</tr>
<tr>
<td>US Air Conditioning Distributors, Inc.</td>
<td>67</td>
<td>Gustave A Larson Company</td>
<td>67</td>
</tr>
<tr>
<td>Goodman Distribution Inc.</td>
<td>67</td>
<td>Refrigeration Supplies Distributor</td>
<td>60</td>
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<tr>
<td>Franklin Energy Services</td>
<td>47</td>
<td>Lennox Industries Inc</td>
<td>60</td>
</tr>
<tr>
<td>Lennox Industries Inc</td>
<td>45</td>
<td>C.C. Dickson Company</td>
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<table>
<thead>
<tr>
<th>Location</th>
<th>2013</th>
<th>Location</th>
<th>2015</th>
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<tr>
<td>R.E. Michel Company</td>
<td>311</td>
<td>Johnstone Supply</td>
<td>519</td>
</tr>
<tr>
<td>Johnstone Supply</td>
<td>298</td>
<td>R.E. Michel Company</td>
<td>336</td>
</tr>
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<td>United Refrigeration</td>
<td>162</td>
<td>Ferguson Enterprises</td>
<td>184</td>
</tr>
<tr>
<td>Honeywell Inc.</td>
<td>118</td>
<td>United Refrigeration</td>
<td>176</td>
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<tr>
<td>Ferguson Enterprises</td>
<td>106</td>
<td>US Air Conditioning Distributors, Inc.</td>
<td>106</td>
</tr>
<tr>
<td>US Air Conditioning Distributors, Inc.</td>
<td>102</td>
<td>Goodman Distribution Inc.</td>
<td>70</td>
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<tr>
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<td>69</td>
<td>Gustave A Larson Company</td>
<td>62</td>
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<tr>
<td>Goodman Distribution Inc.</td>
<td>64</td>
<td>Refrigeration Supplies Distributor</td>
<td>54</td>
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<tr>
<td>Baker Distributing Company</td>
<td>47</td>
<td>Lennox Industries Inc</td>
<td>51</td>
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<tr>
<td>Comverge</td>
<td>41</td>
<td>Baker Distributing Company</td>
<td>50</td>
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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

<table>
<thead>
<tr>
<th>State</th>
<th>Total Thermostats</th>
<th>Total Bins</th>
<th>Number locations per 10K Res (avg.)</th>
<th>Thermostats per total locations (avg.)</th>
<th>Thermostats per bin (avg.)</th>
<th>Thermostats per location returning a bin (avg.)</th>
<th>Thermostats per 10K residents (avg.)</th>
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<tbody>
<tr>
<td>CA</td>
<td>18,260</td>
<td>513</td>
<td>0.19</td>
<td>25.1</td>
<td>35.6</td>
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<td>3,395</td>
<td>77</td>
<td>0.38</td>
<td>24.6</td>
<td>44.1</td>
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<td>44.4</td>
<td>53.8</td>
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<td>236</td>
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<td>43.2</td>
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<td>28.0</td>
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<td>89.6</td>
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<td>1.82</td>
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<td>40.8</td>
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<tr>
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</tr>
<tr>
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<td>61</td>
<td>1.51</td>
<td>13.1</td>
<td>43.5</td>
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<td>19.9</td>
</tr>
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<td>201</td>
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<td>12.5</td>
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<tr>
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</table>