

Switch the 'Stat Thermostat Recovery Program

2011 Annual Report for the Province of British Columbia

Submitted to: Director, Environmental Management Act

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British Columbia Ministry of Environment

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This annual report is issued by the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) in accordance with the British Columbia Recycling Regulation (Reg. 449/2004). The 2011 annual report documents the Switch the 'Stat program's activities and results in British Columbia from January 1, 2011 to December 31, 2011.

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Date: April 16, 2012

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1 PROGRAM OUTLINE

Switch the 'Stat is the designated program for recovering thermostats in British Columbia; defined as a product that uses a mercury switch to sense and control room temperature through communication with heating, ventilation and air conditioning equipment. The British Columbia Stewardship Plan for Mercury-Containing Thermostats is the approved five year plan for recovering these products, and spans a timeline of July 1, 2010 to June 30, 2015.

Switch the 'Stat is in Year Two of operations in British Columbia, and efforts are still being made to promote and establish the program throughout the province. Significant progress was made towards the Year Two goals with 23 new registrations throughout 2011, for a total of 109 collection points across the province, including 63 registered drop-off points for the public. The program is now operating in 22 of the 29 regional districts. Furthermore, the goal of running 15 return-to-retail events was surpassed, with 20 staffed events and 33 unstaffed events across the province.

The program was also promoted to prospective collection locations and the public as per the approved plan, ensuring improved awareness about the importance of recycling old mercury-containing thermostats.

Despite these successes, some gaps between actual and projected performance during Year Two of operations have been identified. The program is currently undertaking measures to increase the number of collection points in order to close these gaps and meet the Year Three program targets as set out in the plan.

As per the requirements under the British Columbia Recycling Regulation, this report has been prepared to summarize the program activities undertaken during the calendar year of 2011, and will be posted on the program website at www.switchthe'stat.ca.

2 SUMMARY OF 2011 PROGRAM ACTIVITY

During the course of the 2011 calendar year, a number of activities were undertaken to establish and grow the program in British Columbia. The following sections provide an overview of major program activities undertaken throughout 2011.

2.1 Collection System Information

The expansion of the program's collection channels was the most important goal of the 2011 program activities. In accordance with the program plan, Switch the 'Stat collects thermostats in the province of British Columbia through one main collection channel (HVAC contractors/wholesalers) and three secondary collection channels (send-back option, drop-off locations and return-to-retail events). The following activities were undertaken throughout 2011, to work towards achieving the Year Two operations target of 240 collection points throughout BC.

Contractor/Wholesaler channel

Based on estimates that 85 to 90 percent of thermostats sold in British Columbia are sold through contractors and wholesalers in the heating, ventilation and air-conditioning (HVAC) industry, this group logically makes up the primary channel through which to recover mercury-containing thermostats. By engaging contractors throughout British Columbia to collect thermostats as they perform upgrades and service calls, the program expects to see a similar proportion of thermostats collected as sold through this channel. Because of this, a large portion of program activities throughout 2011 were focused on outreaching to contractors and wholesalers to become collection points.

Much of the outreach and recruitment work throughout 2011 was done by the program's two HVAC industry association partners—the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) and the Canadian Institute of Plumbing & Heating (CIPH)—which leveraged their existing contacts and member companies throughout the province.

As the official program administrator and leader in the HVAC industry, HRAI has an established audience of contractors in British Columbia, as well as several connections through which to promote the program.

HRAI began their outreach with recruitment letters, which were sent in June 2011 to each of their 46 members in British Columbia, and encouraged them to register to become Switch the 'Stat collection locations. Because of the Canada Post strike during the summer of 2011, follow-up on these letters was delayed until August 2011. Follow-up was done in the form of a second letter, again encouraging registrations.

HRAI also publicized the program with an article in the fall issue of their magazine, which reaches their full membership.

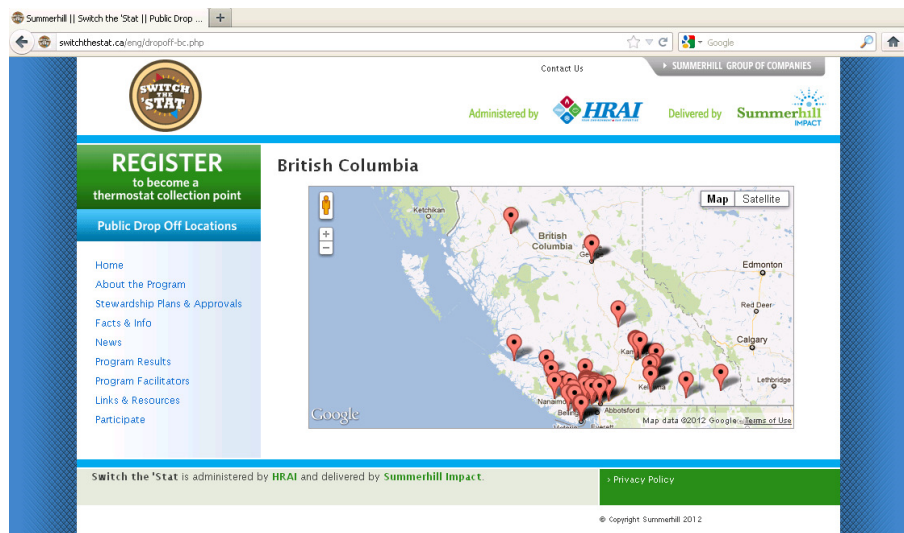
Finally, HRAI promoted the program at a British Columbia regional training session, which took place on December 8th, 2011. A sample of the registration letter used at that session has been provided as [Appendix A](#) to this report.

As official program supporters, CIPH undertook similar outreach to encourage contractors and wholesalers to join the program. In June 2011, they sent registration letters out to their members, and performed follow-up in August 2011. Additionally, they sent a program announcement from CIPH's head office to the BC regional office; this announcement was featured in 3 regional newsletters and 2 Thermal Environmental Comfort Association (TECA) newsletters. The program was also featured on the agenda for the summer and fall meetings of two regions.

Drop-off channel (Regional district, municipalities and contractors/wholesalers)

A secondary collection channel is the drop-off channel, which is intended to provide an option for do-it-yourselfers who do not employ a contractor to remove their old thermostats. It is important to note that all contractor/wholesaler registrants are encouraged to become a drop-off location, assuming they have a store-front or other space that would be safe and accessible to the public, so many of the efforts put into recruiting contractors and wholesalers also benefit this collection channel. In addition to participants from the contractor/wholesaler channel, the drop-off channel also comprises other facilities, such as municipal-run waste management sites or other public-facing locations that wish to offer thermostat recycling as a part of their services to the community. Participation from municipal and regional districts was promoted through attending the Coast Waste Management Association conference in October 2011, where Switch the 'Stat representatives were able to network with regional district, First Nations and municipal administrators.

Throughout 2011, the Switch the 'Stat website continued to feature a map and search-by-postal code function to accommodate British Columbian residents looking to find their nearest drop-off location. The following screen shot provides an example of this feature on the website.



1 - Example of search for drop-off locations on switchthestat.ca

The drop-off channel was also promoted during the return-to-retail events that will be discussed below.

In 2011, 14 new collection locations also registered as drop-off locations. These locations are listed in [section 2.3](#) below.

Return-to-Retail Channel

From October 8-15, 2011, Switch the 'Stat ran return-to-retail events throughout BC, with Canadian Tire as the official retail partner. The events took place at all 53 Canadian Tire locations across the province under two different models: staffed and un-staffed events. Drawing from lessons learned from the 2010 return-to-retail events, the following four key improvements were made to the program design, to promote better results:

- Program timing: events were run slightly earlier in the year, before the weather turned cooler to mitigate the risk of modifying one's heating system during the cold weather. The timing also coincided with Canadian Tire's sale on energy efficient thermostats, which increased the incentive for customers to replace their older thermostats.
- Campaign length: whereas the 2010 campaign took place over one weekend, the 2011 campaign was extended to run for a whole week that included two Saturdays to allow customers the opportunity to first purchase a new energy efficient thermostat at the sale price, and then return with their end-of-life thermostat once they had successfully installed the new technology.
- Event survey: surveys were administered to both participants in the program and non-participants to gather information about why people were or were not participating as well as about their attitudes towards stewardship plans in general.
- Staffed and unstaffed events: offering both staffed and unstaffed drop-off locations provided the opportunity to test the value of having retail locations that sell thermostats act as ongoing drop-off locations for end-of-life thermostats. Staffed events were held at 20 high-traffic locations, where public demand might be higher and unstaffed events at 33 lower-traffic stores where signage, brochures and the collection infrastructure could be housed at Canadian Tire service desks without overburdening the staff. The staffed events were run by trained field representatives who were in charge of setting up in-store displays, collecting end-of-life thermostats from participants, administering surveys, and educating the public about product stewardship, mercury pollution prevention and the Switch the 'Stat program.

Staffed events were held in the following locations:

Canadian Tire Branch Name	Address
VANCOUVER, GRANDVIEW & BOUNDARY	2830 Bentall St., Vancouver, BC V5M 4H4
PRINCE GEORGE	5008 Domano Blvd., Prince George, BC V2N 4V8
DUNCAN	2929 Green Rd., Duncan, BC V9L 0C1
NORTH VANCOUVER MAIN	1350 Main St., North Vancouver, BC V7J 1C4
LANGLEY	6312 200th St., Langley, BC V2Y 1A1
BURNABY SOUTH	7200 Market Crossing, Burnaby, BC V5J 0A2
CAMBIE & 7TH	2290 Cambie St., Vancouver, BC V5Z 2T7
ABBOTSFORD	32513 South Fraser Way, Abbotsford, BC V2T 4N5
KELOWNA	1655 Leckie Ave., Kelowna, BC V1X 6E4
CASTLEGAR	2000 Columbia Ave., Castlegar, BC V1N 2W7
CHILLIWACK	7560 Vedder Rd., Chilliwack, BC V2R 4E7
MAPLE RIDGE	11969 - 200th St., Maple Ridge, BC V2X 3M7
SURREY (WHALLEY)	13665 - 102nd Ave., Surrey, BC V3T 1N7
PENTICTON	960 Railway St.t, Penticton, BC V2A 8N2
TERRACE	5100 Hwy. 16 West, Terrace, BC V8G 5S5
NANAIMO	6900 North Island Highway, Nanaimo, BC V9V 1P6
WHITE ROCK	3059 - 152nd St., Whiterock, BC V4P 3K1
SURREY (SCOTT ROAD)	7878 - 120th St. (Scott Road), Surrey, BC V3W 3N2
S. RICHMOND	11388 Steveston Highway, South Richmond, BC V7A 5J5
WILLIAMS LAKE	1050 South Lakeside Dr., Williams Lake, BC V2G 3A6

In order to create awareness of the events, Canadian Tire ran an advertisement in their province-wide print flyer for the week of October 2nd, leading up to the event, and the week of October 9th, during the event. These flyers were distributed to thousands of homes across British Columbia, and as such were a powerful tool for reaching the target audience of homeowners.

Other public relations efforts were undertaken to promote the events, including a province-wide media release promoting the events to a general audience, and targeted media engagement in the communities where the staffed stores were located.

The events were also promoted online on the Switch the 'Stat website and on the BC Stewardship Agencies' events website, <http://bcstewards.com/events.htm>. Further outreach was conducted by leveraging Summerhill Impact's social media presence; information about the events was posted on Facebook and shared via Twitter.

The results of the program are as follows:

Measure	Result Achieved
Number of Thermostats Recycled	98 Thermostats
Amount of Mercury Managed	270 Grams of Mercury
Number of Events Held	20 Staffed, 33 Unstaffed
Number of Surveys Administered	468 Surveys
Amount of Media Exposure	7.1 Million People Across 31 Media Outlets

It should be noted that despite having improved the program design, having hosted events in more than the target number of locations and having executed a very successful outreach and media campaign, only 98 thermostats were acquired through this collection channel. These results, combined with the low results from the 2010 return-to-retail campaign as well as the statistics from the event surveys from 2011 show that return-to-retail events may not be a realistic channel for collection. The survey data from 2011 specifically demonstrates that consumers are not compelled to undertake a home improvement activity such as changing-out a thermostat simply to receive a rebate or partake in free recycling. Additionally, surveys indicated that additional outreach to the public would be necessary in 2012, despite the success of the public relations campaign.

As per the program plan, the return-to-retail channel is currently being assessed for its effectiveness. Other options for increasing public awareness and collecting thermostats from British Columbia's "do-it-yourselfers" are being explored.

Send-back channel

The send-back channel is a secondary channel, employed by the program to provide a recovery option for British Columbia residents living in remote areas. In 2011 there were five registered send-back participants. This recovery option is made available upon request through the Switch the 'Stat website (<http://switchthestat.ca/eng/register.php>), and is expected to remain in-place for the duration of the program's execution because it offers a practical and convenient method for reaching participants who are located remotely or cannot access drop-off locations.

Through the actions taken by the program administrators, supporters and delivery agents, the collection channels were further developed throughout 2011 and collection points were made available to citizens of British Columbia. [Section 2.3](#) provides a breakdown of the collection facilities that have registered to participate as a result of the aforementioned outreach and registration promotions.

2.2 Educational Materials and Strategy

As the program is still in the relatively early stages of execution in the province of British Columbia, Switch the 'Stat's educational strategy is simply to promote awareness of the program to prevent inappropriate disposal of all types of thermostats. The strategy is primarily targeted at contractors and wholesalers who are responsible for handling a high percentage of thermostats in the province of British Columbia. Once educated, they then outreach to members of the public who are their existing or prospective clients, using promotional materials supplied by the program. Additionally, the strategy seeks to promote awareness among members of the public who may also be responsible for the disposal of thermostats, through outreach on public-facing websites, materials and initiatives.

The educational materials that were developed and/or continually made available throughout 2011 are described below.

1. Program Website: The program's website, www.switchthestat.ca, is its primary educational tool, and as such it features content directed at educating both contractors and wholesalers and the general public. This site provides a comprehensive overview of the program, education about mercury and the dangers it presents, an interactive map of drop-off locations, a list of participating contractors and wholesalers and drop-off locations, and an online registration form for residents who want to return a thermostat using the send-back option. The site is also kept up-to-date with current totals of thermostats and mercury vessels that have been collected and the weight in kilograms of the mercury that has been recovered.
2. Promotional Resources: The Switch the 'Stat website also features an exclusive section that can only be accessed by registered collection locations and program supporters who have been given the link to this part of the site. The exclusive section provides special promotional resources for participants to use while outreaching to the public about thermostat recycling. The promotional resources portion of the website can be found at www.switchthestat.ca/resources and it includes a downloadable program logo to add to a participant's own promotional materials, as well as web banners that can be added to a webpage or an e-newsletter to show their support for the program.
3. Introduction Letters: Each collection kit that is issued to a newly registered collection location contains an introduction letter that includes educational information about the program and about mercury. These letters are important educational tools that help develop commitment from newly recruited participants. These letters also help new participants with their future outreach to the public, by providing them with information about the importance of recycling thermostats.
4. "Thermostats Only" Stickers: To prevent materials other than thermostats from being recovered in the Switch the 'Stat collection containers, the program developed new "thermostats only" stickers at the end of 2011. These stickers are placed on the inside of all collection containers before they are shipped to participants and act as a visual reminder that only thermostats are accepted in the collection containers, as per the shipping regulations in the province of British Columbia and the goals of the program.
5. Posters: Two versions of promotional posters are available for participants to use in displays on-site at the collection locations.
6. Brochures: A stack of printed brochures is provided to participating collection locations to distribute to their customers (in the case of contractors/wholesalers). These brochures include facts about mercury and information about the Switch the 'Stat program that is used to educate customers and the public.
7. Monthly Newsletter: In order to improve communication with existing participants, the development of a monthly outreach communications tool began in August 2011. This outreach tool is in the form of a monthly email newsletter and will cover such topics as collection results, program events/activities, and any changes to the program, and will

provide an alternate way for participants to get in touch with the program administrators. The inaugural monthly email will be distributed to participants in early 2012.

8. Stewardship Agencies of British Columbia (SABC): The Switch the 'Stat program is also featured on the SABC website (www.bcstewards.com). Statistics on this site's traffic started being tracked as of August 1st, 2011. Between August 1st and December 31st, 2011 there were 843 visitors to the site.

Examples of each of these materials, with the exception of the monthly newsletter, which is still in development, can be found in [Appendix B](#) to this report.

Results of Education and Outreach Efforts

According to the program plan, the success of Year Two educational outreach would be measured by the success of a number of these initiatives. The results achieved during 2011 are as follows.

The program website: As per the plan, the site has been operational since July 1, 2010, and is updated on a monthly basis with collection results, and a listing of any new participating contractors/wholesalers and drop-off locations. Quarterly updates with other information, such as special events or news, are also made. An analysis of website statistics shows that throughout 2011, 4,186 visits were made to the Switch the 'Stat website, 1,752 of which were made from the province of BC. Top pages viewed by visitors during this timeframe include: "home index", "drop-off locations", "participate", "about the program", "facts and info.", "drop-off locations in BC", "participating contractors", "program links", "participants" and "program facilitators".

Printed brochures: The program plan states a target of printing and distributing a minimum of 5,000 brochures on an annual basis. Throughout 2011, 575 brochures were distributed to registered collection locations (with 25 brochures given out to each new registrant). Additionally, 5,000 brochures were provided to the 53 Canadian Tire locations that took part in the Return-to-Retail events. Therefore, a total of 5,575 brochures were distributed throughout 2011, exceeding the target annual distribution of 5,000 brochures.

Printed posters: The program plan states that the number of posters distributed should be proportional to the number of retail events held. Special printed signage was displayed at all 53 Return-to-Retail events in 2011, which can be seen in [Appendix C](#). Additionally, posters were sent to all 23 collection locations that registered in 2011.

Advertising via the Recycling Council of British Columbia's website and hotline: The Switch the 'Stat program is featured in RCBC's online Recyclopeda (<http://rcbc.bc.ca/>), which allows British Columbians to search for ways/locations to recycle various types of household materials. They also have operators available to answer questions over the phone. In 2011, there were 445 searches for how to recycle mercury-containing thermostats, and hotline operators answered 190 calls on the topic.

Advertising in waste reduction/community calendars for regional districts: Instead of advertising in community calendars for regional districts, the program was promoted through the SABC “British Columbia’s Recycling Handbook”, which provides a simple guide to what can be recycled under BC stewardship programs and is available at www.bcstewards.com.

2.3 Collection facilities

According to the stewardship plan, the goal was to have 240 registered collection points in Year Two of operations. Through outreach efforts described in [section 2.1](#), 23 new businesses registered as collection points for end-of-life thermostats in 2011.

The following chart provides information regarding the businesses registered, including the types of business registered, if they have opted to be a drop-off location and the city where the business is located.

Company Name	Type	Drop Off	City
BBK Bottle DEPOT	Recycling Centre	Yes	Prince George
Planet earth recycling ltd.	Recycling Centre	Yes	Westbank
WWG Totaline Carrier	Wholesaler	No	Nanaimo
WWG Totaline Carrier	Wholesaler	No	Kelowna
WWG Totaline Carrier	Wholesaler	No	Burnaby
WWG Totaline Carrier	Wholesaler	No	Langley
Ram mechanical ltd.	Contractor	No	Burnaby
Island Temperature Controls Ltd.	Contractor	No	Victoria
Lennox industries Canada Ltd	Wholesaler	Yes	Burnaby
Barnhartvale Residential Landfill	Municipal	Yes	Kamloops
Independent contractor	Contractor	Yes	Smithers
City of Kamloops Mission Flats Landfill	Municipal	Yes	Kamloops
Regional District of Mount Waddington	Recycling Centre	Yes	Port McNeill
BA Robinson Co Ltd.	Wholesaler	Yes	Kamloops
BA Robinson Co Ltd.	Wholesaler	Yes	Penticton
BA Robinson Co Ltd.	Wholesaler	No	Abbotsford
BA Robinson Co Ltd.	Wholesaler	No	Surrey
BA Robinson Co Ltd.	Wholesaler	No	Vancouver
BA Robinson Co Ltd.	Wholesaler	Yes	Burnaby
Independent Supply Company	Wholesaler	Yes	Langley
Independent Supply Company	Wholesaler	Yes	Burnaby
Ace Plumbing & Heating	Contractor	Yes	Kelowna
Border Mechanical Services Ltd.	Contractor	Yes	Kelowna

Combined with the registrants from Year One, as of December 31, 2011 there were 109 collection points in British Columbia. The facilities are located in the following regional districts:

Region

- Alberni–Clayoquot Regional District
- Capital Regional District
- Comox Valley Regional District
- Cowichan Valley Regional District
- Fraser Valley Regional District
- Metro Vancouver (Greater Vancouver Regional District)
- Peace River Regional District
- Regional District of Central Kootenay
- Regional District of Central Okanagan
- Regional District of East Kootenay
- Regional District of Fraser – Fort George
- Regional District of Kitimat–Stikine
- Regional District of Kootenay Boundary
- Regional District of Mount Waddington
- Regional District of Nanaimo
- Regional District of North Okanagan
- Regional District of Okanagan–Similkameen
- Skeena – Queen Charlotte Regional District
- Squamish–Lillooet Regional District
- Strathcona
- Sunshine Coast Regional District
- Thompson–Nicola Regional District

As this list demonstrates, there are collection points in 22 of British Columbia’s 29 regions. Another chart that shows the total product recovered in each of these regions has been included as [Appendix D](#) of this report. The chart shows that the strongest collection results are currently coming from the Metro Vancouver Regional District, the Capital Regional District and the District of Okanagan-Similkameen. Outreach efforts in 2012 will focus on reaching out to companies in the regions that are not yet covered by existing collection facilities.

Upon registration, all of these businesses received start-up collection kits as described in the approved plan, including a collection container (which is United Nations approved for shipping mercury-containing waste), a pre-paid return waybill, a welcome letter and instructions, a transportation agreement to complete and return to Summerhill Impact, and promotional materials including brochures and posters.

In terms of the processing facility, participants use their pre-paid Purolator waybills to send full collection containers to Tri-Arrow Industrial Recovery in Surrey, BC, where the thermostats are dismantled and accounted for in a report that is sent to Summerhill Impact on a monthly basis. As per the stewardship plan, the metals and plastics remain in Canada for recycling and the

mercury vessels are shipped to Bethlehem Apparatus in Pennsylvania, US, where they are crushed, and the glass is purified and sent for recycling and the mercury is distilled for reuse.

2.4 Reducing Environmental Impacts

Through the Switch the 'Stat program, all components of the recovered thermostats are recycled, including the plastics, metals, glass, mercury and any electronics associated with the thermostat. In 2011, the breakdown of materials recovered and recycled from the province of British Columbia included 3,494 mercury-containing vessels, 25.77 kilograms of metals and 31.25 kilograms of plastics.

The recyclability of mercury-containing thermostats cannot be improved, nor can the reusability of these products, because they are obsolete. New programmable thermostats are more environmentally responsible as they contain no mercury and reduce energy demands (as compared to older set-back models). Further, it is dangerous to attempt to reuse mercury-containing thermostats due to potential incompatibility with newer HVAC systems, thus replacing them with newer thermostats and recycling them is the best choice for reducing the environmental impact of these products.

Because Switch the 'Stat is already able to recycle 100 percent of materials recovered through the program, efforts to continually reduce environmental impacts have centered on improving the program's collection processes. One area of focus has been the reduction of non-thermostat materials which are sometimes sent back in collection pails. Efforts have included communications with participants, and the development of new "thermostats only" stickers (as described in [section 2.2](#)) for the inside of the collection pails to act as a reminder for participants.

As the program expands and matures, additional reductions in environmental impact will be sought in order to ensure the program is effective in having a positive outcome for the environment and the citizens of British Columbia.

2.5 Consistency with Pollution Prevention and Four "Rs" Hierarchy

As per the stewardship plan for thermostats, pollution prevention efforts have focused on recycling, rather than reduce/redesign or reuse. The breakdown as to why recycling is the preferred management technique out of the four "Rs" is provided below.

Reduce/redesign: The main environmental concern with thermostats is the mercury contained in many older models. While many of these thermostats may still be in use, they are no longer made by the major manufacturers and are no longer sold in Canada. New thermostats have been redesigned to eliminate mercury and to help reduce energy consumption.

Reuse: The plan does not encourage the reuse of old thermostats collected through this program for the reasons described below:

- Our primary goal is to collect old mercury-containing thermostats and ensure that the mercury and other component parts are properly managed, not to see them in continued use.
- Old non-mercury-containing thermostats may not meet the technical/safety specifications of new HVAC systems and do not have the same ability to reduce energy use that new programmable thermostats do, and therefore we recommend that these be recycled rather than reused.

Recycle: As per the program plan, the thermostats recovered from the province of British Columbia are counted, documented, dismantled and recycled. The components from the thermostats are separated for recycling as follows:

- The plastic components recovered are of mixed types, which are baled together and then sold to manufacturers to be used in new products in a 30/70 mix of recycled to new plastics.
- The metals collected are a mix of iron, nickel and aluminum which all have high reuse/recycling value.
- The glass vials containing the mercury are sent to Bethlehem Apparatus, where the glass vials are crushed and glass and mercury are separated. The mercury is quadruple distilled and sent for resale/reuse in products and processes. The glass is crushed, distilled and sent for recycling in fibreglass applications. The latest shipment of mercury-containing vessels was sent to Bethlehem Apparatus on January 26, 2012. [Appendix E](#) contains the manifest for this shipment.

100 percent of the materials collected by the program were recycled in accordance with the program plan and the principles of pollution prevention.

2.6 Recovery Rate

The following table depicts information on the recovery rate achieved by the Switch the 'Stat program during the period of January 1, 2011 to December 31, 2011. The results achieved are compared against the target rates for portions of the program plan for Years One and Two operations, because the annual plan covers the period of July 1st to June 31st, whereas the annual report follows the calendar year.

Expected vs. Actual Product Recovery Rate for Mercury-Containing Thermostats		
	Targets: ½ Year One (January 1 st -June 30 th) plus ½ Year Two (July 1-December 31 st , 2011)	Results Achieved from January 1, 2011 to December 31, 2011
Number of Thermostats Collected	4,388 thermostats	1,506 thermostats
Number of Loose Switches Collected	n/a	518

Although all participating collection locations are encouraged to return only intact thermostats, loose switches are occasionally returned as well. Using the industry-accepted standard of 1.4 switches per thermostat, the number of loose switches returned in 2011 is equivalent to 370 thermostats. The adjusted total thermostats collected in 2011 is then 1,876.

As demonstrated above, the program is currently facing a gap between the targets and actual performance with regard to collection results. There are three key reasons why the program has not yet met the Year Two collection targets.

First, the program must secure additional collection points in order to meet the targets. To ensure collection targets are met going forward, the program has prepared a plan for 2012 that focuses on aggressively pursuing registration of new collection points, to promote higher collection results. Key elements from the program plan are described in [section 4](#).

Secondly, after two years of pilots, the return-to-retail collection channel is proving to be an inefficient and ineffective method for collecting end-of-life thermostats. The process, which involves procuring a retail partner, developing collateral and marketing pieces, engaging and following through with outreach efforts, training in-field representatives and hosting events takes several months of coordination and does not return significant numbers of thermostats. The cost of running these events results in a reduced focus on the other collection channels, which are more effective and cost-efficient. For Year Three operations, other options for promoting the program to British Columbia “do-it-yourselfers” should be explored in order to determine if there are other more effective ways of acquiring end-of-life thermostats in lieu of these events.

Finally, quality control calls made to participants during the summer of 2011, described in [section 3](#) of this report, determined that participating collection locations wanted more communications from the program. It is expected that this increase in communications will result in representatives at participating collection locations feeling more engaged in the program and thus returning pails and requesting new materials more proactively, which will result in an increased number of thermostats received during a given time period.

With increased communications, a focus on procuring more collection points and re-envisioned the return-to-retail events, the 2012 program will be on track to close the gap between expected and actual collection results.

2.7 Summary of Research and Development Efforts

Two research efforts were started during 2011, with the goal of improving program results.

First, in order to increase participation numbers, research has been initiated around industry associations that may have members that handle end-of-life thermostats, such as electrical and demolition contractors. Summerhill Impact will outreach to these groups in 2012 in order to increase the program's number of registered collection points outside of the HRAI and CIPH memberships and networks. For further details, see [section 4.0](#) of this report.

Second, the program began research into potential opportunities to work with utility providers to promote the program to the public. Utilities may find value in these promotions because upgrading to new programmable thermostats often results in increased energy efficiency. BC Hydro is already a supporter of LiveSmartBC (<http://www.livesmartbc.ca/>), a program run by the government of British Columbia that encourages residents and businesses to save energy and offers an incentive for replacing electric thermostats for baseboard heaters with electronic thermostats. For this reason, promoting a program that recovers inefficient, mercury-containing end-of-life thermostats could be seen as co-beneficial.

Research efforts such as these will continually be undertaken as the program grows, to ensure the best possible execution of operations in the province of British Columbia.

2.8 Financial Statements

Switch the 'Stat does not charge visible eco-fees and therefore, financial statements have not been included as part of this annual report.

3 CONSULTATIONS

Throughout 2011, the Switch the 'Stat program undertook consultations to support the efficient establishment and growth of the program in British Columbia. The program consulted with diverse stakeholder groups including members of the HVAC industry, First Nations communities, participating collection locations and a major Canadian retailer. Below is a summary of each consultation initiative and the results achieved.

Oversight Committee Meetings

The Switch the 'Stat Oversight Committee is comprised of representatives from thermostat manufacturers that fund the program, HRAI and CIPH. This committee assesses the program's progress in the regulated provinces of British Columbia and Manitoba, as well as throughout the rest of the country, where the program operates on a voluntary basis. Throughout 2011, the Oversight Committee meetings took place on a quarterly basis, including in February, April, July and November of 2011. Information about progress and expansion of the program throughout British Columbia was a discussion topic for each of the meetings.

As a result of consulting with the Oversight Committee, the Switch the 'Stat program has been able to procure a number of new outreach opportunities, such as industry newsletters and training sessions. Additionally, the committee provides feedback and suggestions that improve the program's efficiency, for example, they provide contact information for groups that maybe able to support the program, such as TECA and other related industry associations.

Stewardship Program Administrators

Switch the 'Stat also participated in discussions throughout 2011 with the other stewardship organizations operating in British Columbia. These discussions took place at events such as the RCBC conference held in May of 2011 and the CWMA conference in October 2011. Through these discussions, the program has gathered important insights, for example, the potential opportunity to participate in consolidated collection events in 2012.

First Nations Stakeholders

In October 2011, Switch the 'Stat took part in the CWMA conference, where a consultation with First Nations groups took place. Next steps will involve determining opportunities to offer collection infrastructure to interested First Nations communities, in order to ensure the program's coverage throughout BC.

Quality Control Calls to Participants

As part of a commitment to offer high-quality programming and customer service to all participating collection locations, Switch the 'Stat performed quality control calls to a sample of registrants from both regulated provinces (BC and Manitoba). Feedback indicated that more communications would be useful to increase participant engagement and therefore collection

results. This feedback has been incorporated into the 2012 program plan as presented in [section 4.0](#).

Retailer Discussions

As a part of the British Columbia program plan, a commitment was made to engage retailers in discussions about displaying signage where new thermostats are sold. This signage would include information about the Switch the 'Stat program and the availability of thermostat recycling. During the fall of 2011, discussions on this topic were held with head office representatives from Canadian Tire Corporation, a major Canadian retailer that offers a wide range of programmable thermostats targeted at the do-it-yourself audience.

The discussions revealed that engaging retailers to display ongoing signage may prove to be very challenging for a number of reasons. For example, all signage in every Canadian Tire store is changed once a week, with no exceptions. All signs must meet specific size and style requirements from an internal approvals team. These requirements would vary from retailer to retailer. Because of the outcomes from this primary discussion, further research must be done to determine if providing signage to retail locations where new thermostats are sold will be a possibility, and if so, how to execute this initiative in a cost-effective manner.

Consultations with such diverse groups provided valuable insights throughout the year, and will continue to be pursued going forward.

4 PLAN FOR 2012

As indicated in sections 2.3 and 2.6 on performance measures set out by the program plan, gaps in the projected and actual performance have been identified in terms of both the number of collection points as well as the number of thermostats collected. The program plan for 2012 has been designed to specifically address these gaps by placing additional attention on contractor and wholesaler recruitment activities. Logically, increasing the number of collection facilities will result in increased numbers of thermostats recovered. The following plan for 2012 has been approved by the program's Oversight Committee and provides an overview of upcoming program activities that will close the performance gap.

Outreach

The predominant focus of the 2012 plan will be outreach and recruitment to existing and potential collection locations. Outreach began in January 2012, with an educational letter accompanied by a registration form to all HRAI's British Columbia members that have not yet registered for the program. Following these letters, follow-up emails were issued approximately three weeks later to any members still not registered. Following those emails, follow-up calls were placed approximately three weeks later with the goal of obtaining 100 percent HRAI membership registration by the spring of 2012. This process will be undertaken with CIPH and TECA members as well. This aggressive, targeted process has already resulted in two new registrations in the province of British Columbia in 2012.

Another outreach effort will be to target relevant industry associations that could either promote the program or that have members that may wish to participate. Research to identify these groups has already begun, and key associations have been identified, for example, the Canadian Contractors Association, Mechanical Contractors Association of Canada, Green Building Council and the Building Owners and Managers Association. Outreach to these groups will follow a similar model to the partner outreach described above, using letters, emails and phone calls. The program will also explore the possibility of having recruitment messaging placed in industry association newsletters.

Training and certification programs are another potential sector for outreach. By recruiting participants just as they are beginning their careers in the HVAC industry, it is the program's hope that our stewardship activities will become ingrained in the way these HVAC industry members do business. As a result of the February 2012 Oversight Committee meeting, a number of prominent contacts in the HVAC training sector have been identified.

In order to reach out to non-association businesses, the program will focus on advertising in industry publications. A marketing strategy for 2012 that includes advertising in several publications or newsletters is currently in development. The goal is to maximize program exposure in the regulated provinces of Manitoba and British Columbia.

The program will also take advantage of the exposure provided by industry events, such as the CMX/CIPHEX event in Toronto in March 2012, as well as the CIPHEX West event in Vancouver in November 2012. At these events, contractors from British Columbia will be targeted for registration through special promotions. Other events that will target the British Columbia market more specifically are currently being researched with the goal of continuing to educate both potential participants, as well as members of the public.

In terms of offering collection infrastructure across the province, the program will focus on developing collection points in regional districts where collection is not yet available. Additionally, offering collection infrastructure to First Nations groups will be a priority going into the remaining months of Year Two and the beginning of Year Three, as this opportunity has not yet been explored through the program's operations.

Increased Program Communication

In addition to the increased outreach and recruitment efforts described above, the program is working to increase communications with existing program participants, who voiced a desire for more contact during the quality control calls made during the summer of 2011. A new communications plan for 2012 has already been implemented and a year-opener letter was delivered to all participants in mid-January 2012, thanking them for their participation and updating them on program results from 2011 and activities planned for 2012. The letter was accompanied by a request for materials form. Additional outreach pieces have been planned throughout the duration of 2012, so that participants remain informed and engaged as the program grows in the province of British Columbia.

In addition to these print communications, Switch the 'Stat is also planning to launch a monthly email newsletter that will be sent to all active participants. As discussed in [Section 2.2](#), this newsletter will cover such topics as collection results, program events/activities, important program information, and any changes to the program, and will provide an alternate way for participants to get in touch with program administrators.

Finally, a collection sweep will take place in May 2012. The goal of this sweep is to remind all participating collection locations in British Columbia to return their collection containers regularly, and to ensure that all active participants are, in fact, actively collecting thermostats. A letter will be sent to all participating collection facilities asking them to send back their collection container if it is at least half-full, and to confirm that they are still actively participating in the program.

These communication efforts will improve the overall quality of the program for participants. It is likely that this will also increase the volume of thermostats that is being collected from active participants, as they will be thinking of the program more often and returning pails more regularly.

Other Initiatives

Based on the success of the Heating Air-conditioning Refrigeration Distributors International (HARDI) awards, which were developed to recognize the top program participants in the US

thermostat recovery program, Switch the 'Stat will also develop and launch the "Switch the 'Stat Awards". These will recognize the accomplishments of program participants and provide them with digital and print copies of the awards so that they have a tangible symbol of the contribution that they are making to recover mercury and reduce waste in British Columbia.

As the plan for 2012 progresses, continual improvements will be prioritized, ensuring the delivery of an efficient and effective thermostat recovery program in British Columbia.

5 CONCLUSION

The Switch the 'Stat thermostat recovery program has made significant headway in further establishing and growing its operations and developing collection infrastructure within the province of British Columbia throughout 2012. Strong adherence to executing the approved program plan has ensured that all measures are being taken to secure the efficient expansion of the program throughout the province.

While some gaps in actual versus targeted performance have been identified, actionable solutions have been planned and are already underway. HRAI, CIPH and Summerhill Impact are confident that the 2012 program plan will lead to an increase in performance within the next calendar year.

6 APPENDIX A – TYPICAL RECRUITMENT LETTER

The Chair of the HRAI BC chapter distributed this letter with program materials and a registration form at a December 8th, 2011 training session.

Switch the 'Stat

A thermostat recycling program that is good for your business and the environment.

- ✓ All old, end-of-life thermostats need to be recovered and recycled in the province of British Columbia, according to the Recycling Regulation.
- ✓ Switch the 'Stat is a BC Stewardship Program through which thermostat manufacturers pay for the responsible recycling of the thermostats in order to divert them from landfill.
- ✓ Switch the 'Stat is free of cost for participants, who receive collection containers and pre-paid shipping waybills to recycle old thermostats just by signing up.
- ✓ Participating in Switch the 'Stat is a great way to promote your business. As a participating location, your business will be posted to the Switch the 'Stat website and you will receive free promotional materials to help spread word to your potential customers.
- ✓ Some older thermostats have mercury switches in them, which can pollute the air, water and soil if they go to landfill.
- ✓ According to Environment Canada, just one gram of mercury is enough to pollute an eight hectare lake to the point where the fish are inedible for an entire year.
- ✓ Each thermostat mercury switch contains approximately 2.5 grams of mercury and there are typically 1–4 switches per mercury-containing thermostat.
- ✓ Visit www.switchthestat.ca to learn more about the program. Register online or by returning the form on the back side of this sheet.

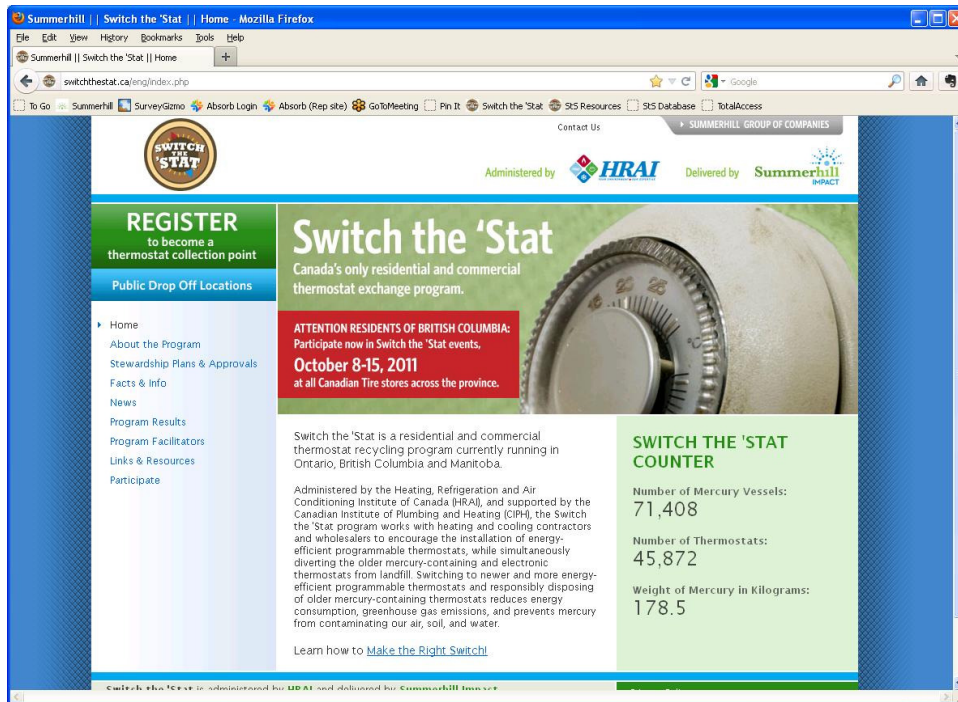


**DO YOUR PART,
REGISTER TODAY!**

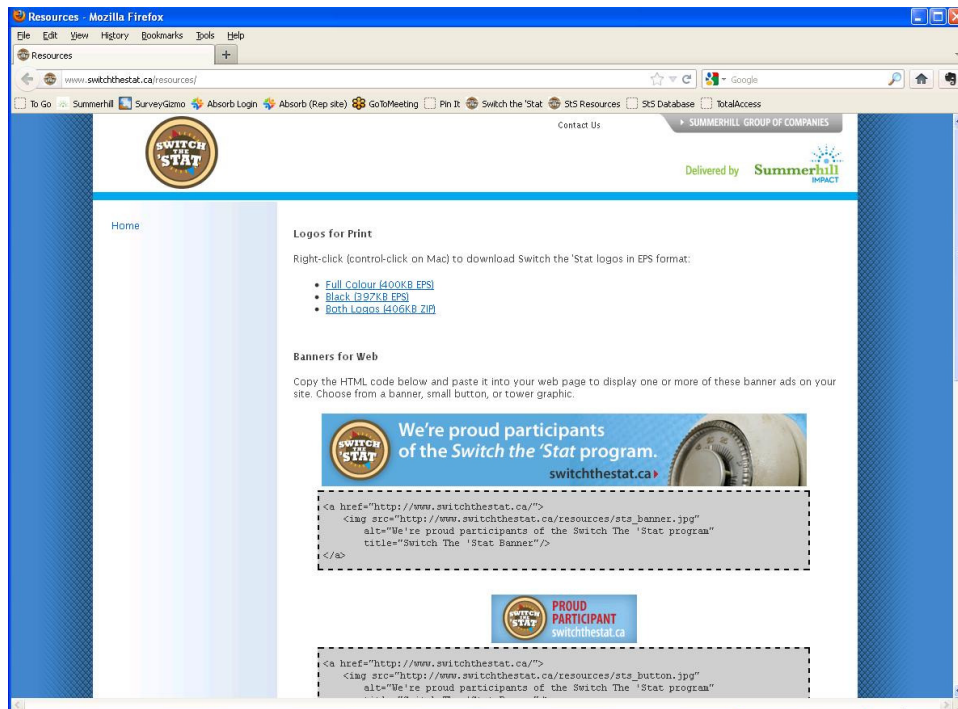


7 APPENDIX B – EDUCATIONAL MATERIALS


Program website:




Program resources:



Introductory letters:





Administered by:


Thank You for Participating in *Switch the 'Stat!*

By collecting old mercury thermostats and returning them to us, you are helping to make a real difference in the health of our environment.


1. Please send Summerhill Impact the agreement for Transportation of Mercury-containing thermostats which is included in this package.
2. Included with this collection container is a pre-paid Purolator waybill. Keep it in a safe place until you are ready to send in the full container.
3. When you are asked to replace old thermostats with new thermostats, place the old thermostat in the collection container.
4. Do not dismantle the thermostat. Please leave the cover plate intact.
5. When the container is full, or when you are requested to send it in, please call Purolator and ship the container using the pre-paid waybill. The container will be sent to an approved recycling facility, to ensure that the mercury is safely and responsibly recovered from the old thermostats, and that the plastic and metal elements are safely recycled. You will be automatically shipped a new pail, although, there can be a few week turn-around time for it to arrive.
6. For additional information, or questions, please contact Summerhill Impact @ (416) 922 – 2448 X 232.

Congratulations! You can rest easy, knowing that you have helped keep mercury out of the environment and at no cost to you! You will be listed on the *Switch the 'Stat* website as a responsible leader in your industry.

Supported by:



Delivered by:

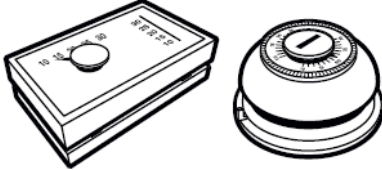


Thermostats Only Stickers:


THERMOSTATS ONLY

**INCLUDE ENTIRE
THERMOSTAT
(when possible)**


}




Administered by:



Supported by:



Delivered by:



Posters:

Small -

Attention Heating and Cooling Contractors!



Did you know?

Disposing of older mercury-containing thermostats with regular waste can result in toxic mercury being released into the environment?

Do the right thing!

Please dispose of **all fully-intact thermostats** in this collection bin and prevent mercury from contaminating the air, soil and water!

Contact:

Melanie Lum
switchthestat@summerhillgroup.ca
416 922-2448 ext. 367

Administered by:

Supported by:

Delivered by:



Large -



ATTENTION HEATING AND COOLING CONTRACTORS!



Please dispose of your
fully intact
mercury-containing
thermostats
in our collection bin



For more information, please visit www.switchthestat.ca

A program of



Brought to you by



With the support of



Switch the 'Stat

1216 Yonge St, Suite 201, Toronto, ON M4T 1W1

Phone: 416-922-2448 **Fax:** 416-922-1028

Email: switchthestat@summerhillgroup.ca

Brochures:



MAKE THE RIGHT SWITCH!



This is a mercury switch – something that still exists in millions of older mechanical thermostats. Mercury is highly toxic and dangerous to the health of people and wildlife.

Switching to newer and more energy-efficient programmable thermostats and responsibly disposing of older mercury-containing thermostats reduces energy consumption and prevents mercury from contaminating our air, soil and water.

Now the choice is yours!

If you dispose of your old thermostat with your household waste, you are sending mercury to landfill.



Old mechanical thermostats have one to four switches, each containing approximately 2.5 grams of mercury.

If you participate in **Switch the 'Stat**, you'll conserve energy, save money, and prevent mercury releases to the environment.



Step 1: With the help of your participating **Switch the 'Stat** contractor, switch to a newer, more energy-efficient programmable thermostat.



Step 2: Responsibly dispose of your old mercury-containing thermostat through your local **Switch the 'Stat** contractor.

A recycling facility will dismantle the thermostat, recycle the parts, and prevent the mercury from contaminating air, soil and water.

For more information, visit www.switchthestat.ca, e-mail switchthestat@summerhillgroup.ca or call 416-922-2448.

The Switch the 'Stat program is administered by HRAI

Supported by:



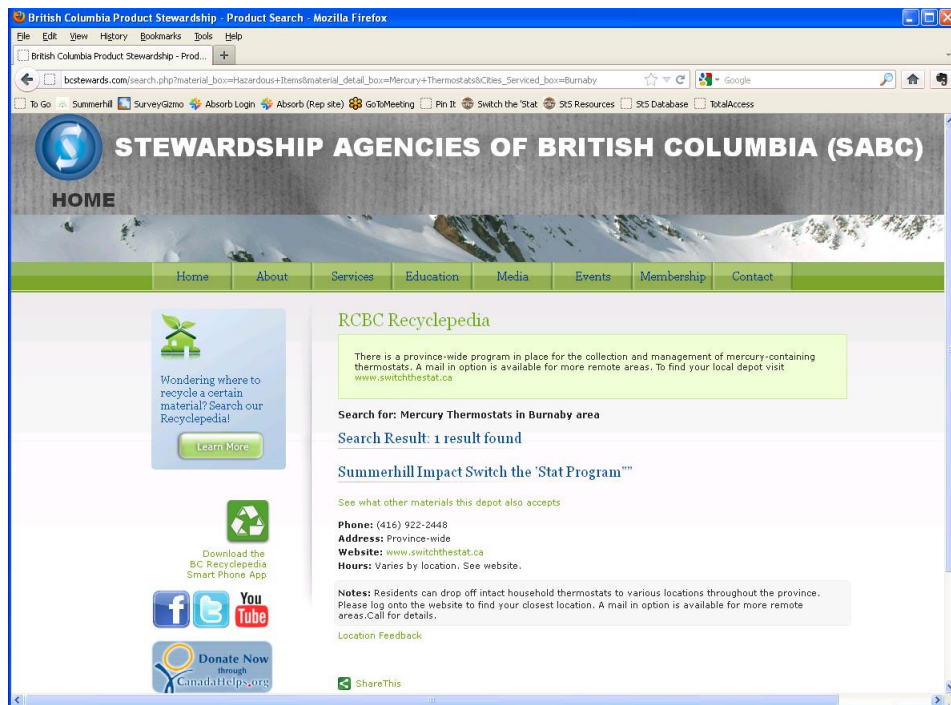
Delivered by:



HRAI Industry Leadership – Environmental Responsibility in Action

FSC logo here

Stewardship Agencies of BC website (linked with RCBC Recyclepedia):



Recycling Council of British Columbia (RCBC) website:



A BC Stewardship Program



RECYCLE YOUR THERMOSTAT HERE



October 8-15, 2011 only
at all Canadian Tire Stores
in British Columbia

Administered by:



Delivered by:



Retail events in partnership with:



9 APPENDIX D – PRODUCT RECOVERED BY DISTRICT

Regional District	Mercury Vessels	Mercury Thermostats	Electronic Thermostats
Capital Regional District	486	257	0
Cariboo Regional District	1	1	0
Comox Valley Regional District	36	20	0
Cowichan Valley Regional District	54	0	0
Fraser Valley Regional District	19	14	0
Metro Vancouver (Greater Vancouver Regional District)	1870	803	1
Peace River Regional District	27	14	0
Regional District of Central Kootenay	19	9	0
Regional District of Central Okanagan	175	91	0
Regional District of Fraser – Fort George	3	1	0
Regional District of Kitimat–Stikine	81	54	0
Regional District of Kootenay Boundary	14	10	0
Regional District of Nanaimo	132	103	2
Regional District of North Okanagan	0	1	0
Regional District of Okanagan–Similkameen	465	74	0
Skeena – Queen Charlotte Regional District	38	19	0
Thompson–Nicola Regional District	74	32	0
Total:	3494	1503	3

10 APPENDIX E – BETHLEHEM APPARATUS MANIFEST

MOVEMENT DOCUMENT / MANIFEST DOCUMENT DE MOUVEMENT / MANIFESTE

The Movement document manifest conforms to all federal and provincial transport and environmental legislation.
Ce document de mouvement/manifester est conforme aux législations fédérales et provinciales sur l'environnement et le transport.

Movement Document / Manifest Reference No.
N° de référence du document de mouvement/manifester

RS35807-8

A Generator / consigneur Producteur / expéditeur		B Carrier Transporteur		23 Reference No. of other movement document (if any) used / N° de référence des autres documents de mouvement/manifester utilisés 000043058 JJK	
Registration No. / Provincial ID No. N° d'immatriculation - OI provincial ON2202100A		Registration No. / Provincial ID No. N° d'immatriculation - OI provincial A220395		Registration No. / Provincial ID No. N° d'immatriculation - OI provincial	
Company name / Nom de l'entreprise HEVIAS INC		Company name / Nom de l'entreprise FRANK'S VACUUM TRUCK SERVICE INC.		C Receiver / consignee Réceptionnaire / destinataire	
Mailing address / Adresse postale City / Ville Province Postal code / Code postal 25 WAINLESS COURT, ANK, ON. N0B 1E0		Mailing address / Adresse postale City / Ville Province Postal code / Code postal 4500 ROYAL AVENUE, NOYARA MAUS NY 14208		Receiver / consignee information same as in Part A Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A <input type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the box below / Non, remplir la case ci-dessous	
E-mail / Courriel électronique randy@acvitas.ca 519.740.5334		E-mail / Courriel électronique 714.284.2132		Company name / Nom de l'entreprise	
Shipping site address / Adresse du lieu de réception City / Ville Province Postal code / Code postal 15 WAINLESS COURT, ONTARIO N0B 1E0		Vehicle / Véhicule Trailer - Rail car No. 1 / Remorque - wagon Trailer - Rail car No. 2 / Remorque - wagon 1460784 ME		Mailing address / Adresse postale	
Intended Receiver / consignee Réceptionnaire / destinataire prévu BETHLEHEM APPARATUS COMPANY, BADC0237001		Port of entry / Point d'entrée QUEENSTOWN / LEWISTON		City / Ville Province Postal code / Code postal	
Mailing address / Adresse postale City / Ville Province Postal code / Code postal 890 FRONT STREET, HELLERTOWN PA 18055		Center Certification / certifier that I have received waste or recyclable material from the generator / consigneur for certifier de l'avoir reçu / consigneur en vertu de la Part A et que l'information contenue dans la Part B est complète et correcte Attestation de transporteur - J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.		E-mail / Courriel électronique Tel. No. / N° de tél. 714 284-2132	
E-mail / Courriel électronique Tel. No. / N° de tél. 412.838-7034		Name of authorized person (print) Nom de l'agent autorisé (personnes d'imprimées) Timothy Ambusk		Year / Année Month / Mois Day / Jour 12 01 26	
Shipping site address / Adresse du lieu de réception City / Ville Province Postal code / Code postal HELLERTOWN PA 18055		Signature Timothy Ambusk		Time / Heure <input type="checkbox"/> AM <input type="checkbox"/> P.M.	
Prox. code 3		Class / Classe (Sub. classes) / Sous-classes		Quantity received / Quantité reçue	
Shipping name / Nom de l'expédition		UN No. / N° UN		Units / Unités	
MERCURY		N/A		1886 14 60 01 S.	
146T MERCURY		8 2809 III		224 14 1 01 S.	
146T MERCURY		8 2809 III		198 Kg 1 07 S	
National code in country of / Code du pays		Export / Exportation		Import / Importation	
528283		N/A		N/A	
528283		N/A		N/A	
528283		N/A		N/A	
Handing code / Code de manutention		Stipulation / Énoncé		Decret / Décret	
3		10		10	
Receiver / consignee certification / certifier that the information contained in Part C is correct and complete / Attestation du réceptionnaire / destinataire - J'atteste que tous les renseignements à la partie C sont exacts et complets.		Name of authorized person (print) Nom de l'agent autorisé (personnes d'imprimées) DAN NOGUEIRA		Signature Dan Nogueira	
Special handling / Manutention spéciale <input type="checkbox"/> Attached to piece / <input type="checkbox"/> As separate piece 07 = PALLET 866-856-5366		Date shipped / Date d'expédition Year / Année Month / Mois Day / Jour 12 01 26		Time / Heure 0130	
Schedule arrival date / Date d'arrivée prévue Year / Année Month / Mois Day / Jour 12 01 30		Tel. No. / N° de tél. 519 740-1333		Schedule arrival date / Date d'arrivée prévue Year / Année Month / Mois Day / Jour 12 01 30	

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Switch the 'Stat Thermostat Recovery Program
(Province of British Columbia)

Report on Non-Financial Information

December 31, 2011

Switch the 'Stat Thermostat Recovery Program (Province of British Columbia)

December 31, 2011

Contents

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Accountants' report	1
Appendix of test procedures and results	2 - 8

To: The Heating, Refrigeration and Air Conditioning Institute of Canada

As specifically agreed, we have performed test procedures at Summerhill Impact ("the Agency") as described in this letter for the fiscal year ended December 31, 2011 over certain non-financial information pertaining to the Switch the 'Stat Thermostat Recovery Program which operates in the Province of British Columbia pursuant to:

1. British Columbia Recycling Regulation 449/2004, Section 8(2)(b) - the location of its collection facilities, and any changes in the number and location of collection facilities from the previous report;
2. British Columbia Recycling Regulation 449/2004, Section 8(2)(d) - a description of how the recovered product was managed in accordance with the pollution prevention hierarchy; and,
3. British Columbia Recycling Regulation 449/2004, Section 8(2)(e) - the total amount of the producer's product sold and collected and, if applicable, the producer's recovery rate.

The results of applying the test procedures are detailed in the attached Appendix. These procedures do not constitute an audit of the Program's non-financial information as provided by the Agency, and therefore we express no opinion on the overall accuracy or completeness for the fiscal year ended December 31, 2011.

This letter is for use solely by The Heating, Refrigeration and Air Conditioning Institute of Canada in connection with their consideration of the accuracy and completeness of the non-financial information as reported by the Agency for the fiscal year ended December 31, 2011.

Abrahamse Berkis Pinto LLP

Chartered Accountants, Licensed Public Accountants
April 17, 2012

1.

For the following procedures test samples were selected from the fiscal period ended December 31, 2011, unless otherwise noted.

Non-Financial Information Requirement: British Columbia Recycling Regulation 449/2004, Section 8(2)(b) - the location of its collection facilities, and any changes in the number and location of collection facilities from the previous report;

Testing Procedure 1.0	To obtain comfort over the existence and accuracy of the collection facilities reported in the Agency's annual report.	
Procedures		Results
1.	For the period under review, obtain a listing from the Agency of all collection facilities participating in the program broken out by type.	<p>1. A listing of all collection facilities participating in the program during the period under review was obtained. The listing contained the following information for each collection facility:</p> <ul style="list-style-type: none"> a. Collection facility name and contact information b. Date of registration in the program c. Location of the collection facility by regional district d. Type of collection channel
2.	Compare total count of collection facilities from the listing with the annual report; investigate any discrepancies with the Agency as applicable.	<p>2. The listing indicated there were 109 active collection facilities participating in the program during the period under review, which agreed to the count as reported in the annual report.</p> <p>In addition, the Agency indicated that 53 Canadian Tire locations in British Columbia participated in a "return to retail" event for an approximate 1 week period during the fiscal year ended December 31, 2011, which agreed to the annual report.</p>
3.	<p>Randomly select a sample of collection facilities participating in the program and obtain their registration form from their business file. Review the registration form to ensure the following criteria are met:</p> <ul style="list-style-type: none"> a. A registration form exists for the collection facility. b. The registration form lists contact information and location, which agrees with the detailed listing. c. The registration form is signed by the collection facility. 	<p>3. A random sample of 22 collection facilities were selected from the listing.</p> <ul style="list-style-type: none"> a. A registration form existed for each of the 22 randomly sampled collection facilities. b. Each of the 22 registration forms contained the collection facility's contact information and location, which agreed to the detailed listing. c. Collection facilities register for the program by either submitting a paper registration form or via electronic registration through the Agency's program website. Of the 22 collection facilities sampled, 18 submitted by paper registration and 4 by website registration. The 4 website registrations did not contain a signature.

Testing Procedure 1.0	To obtain comfort over the existence and accuracy of the collection facilities reported in the Agency's annual report	
<p>4. Using contact information on the facility listing provided in #1 above, phone each randomly selected collection facility to verify their existence and that they have an adequate understanding of the program.</p>	<p>4. Each of the 22 randomly sampled collection facilities were phoned and the following questions and responses were documented:</p> <p>Questions:</p> <ul style="list-style-type: none"> a. Was the collection facility a participant in the program during the fiscal year ended December 31, 2011? b. Does the collection facility have an understanding of the purpose and benefits of the program, and if so, what is that understanding? c. Who were the collected thermostats shipped to for recycling, and what means of shipment was used? <p>Responses:</p> <ul style="list-style-type: none"> a. Each of the 22 contacts at the collection facilities confirmed that they were a registered participant in the program as at December 31, 2011. b. The general theme of the response by each of the 22 contacts at the collection facilities was similar. The respondents were able to communicate that the purpose of the program is to promote the collection and proper recycling of thermostats to reduce the environmental impact that would result from improper disposal. As the responses were consistent with the program overview contained in the February 3, 2010 - Final British Columbia Stewardship Plan for Thermostats, it appears that all 22 of the collection facilities phoned had an adequate understanding of the program. c. All 22 of the collection facilities phoned confirmed that the thermostats collected were only shipped to Tri-Arrow Industrial Recovery Inc. ("the Processor") for recycling, and that the program provided collection container and prepaid Purolator waybill were used to facilitate the shipment of thermostats from them to the Processor. 	

Testing Procedure 1.1	To obtain comfort over the completeness, consistency, and validity of the number of collection facilities.	
Procedures		Results
<p>1. Obtain the historical data for the total number of collection facilities for the past 3 years as reported by the Agency in their annual reports.</p>	<p>1. The program formally commenced on July 1, 2010 and accordingly, historical data was only available for the six-month fiscal period ended December 31, 2010.</p>	
<p>2. Investigate any fluctuations greater than 5% to understand the reason for the fluctuation in the number of collection facilities.</p>	<p>2. The program's target number of collection facilities at the end of its second year, as stated in the February 3, 2010 - Final British Columbia Stewardship Plan for Thermostats was 240. The adjusted target number of collection facilities for the 18-month period ended December 31, 2011 would be 220, based on an increase of 10% over the year 1 target of 200 participants. The program obtained 23 new registrants during the year, while 10 participants in the program as at December 31, 2010 de-registered, resulting in 109 participants as at December 31, 2011, an increase of 13.54% from the previous reporting period.</p> <p>The Agency indicated that significant joint efforts with the Heating, Refrigeration, and Air-Conditioning Institute of Canada and the Canadian Institute for Plumbing and Heating were made during 2011 to promote the Program and increase the number of collection facilities. Despite these efforts the response level was not as desirable as anticipated. Outreach efforts were furthered through the development and distribution of marketing materials to promote the program in addition to conducting a Province wide "return to retail" event with Canadian Tire retail stores for an approximate one week period.</p>	

Non-Financial Information Requirement: British Columbia Recycling Regulation 449/2004, Section 8 (2)(d) - A description of how the recovered product was managed in accordance with the pollution prevention hierarchy.

Testing Procedure 2.0	To obtain comfort over the accuracy, completeness and existence of end-use of the product collected and the accuracy of the processor's receipt of weight, volume or quantity of product, test on a sample basis the deliveries of product recovered to their end-use.	
Procedures		Results
	<p>1. Obtain a listing of products shipped to the Processor for the period under review. The listing should provide:</p> <ul style="list-style-type: none"> a. The Processor's name and address. b. The total weight, volume or quantity of the product at the collection site. c. The total weight, volume or quantity of the product at the Processor. d. The date of delivery to the Processor 	<p>1. There was no listing available from the Agency or collection facilities of products shipped to the Processor. However, the Processor provided a listing of shipments of thermostats received by them from the collection facilities for each of the 12 months in the reporting period as well as, for the first month following the reporting period. The listing was obtained in an Excel document via E-mail directly from the Processor. The Processor is the sole company used by the Agency and collection facilities to dismantle and recycle the thermostats collected.</p> <ul style="list-style-type: none"> a. Non-applicable b. The collection facilities do not count or retain a record of the quantity of thermostats collected and shipped to the Processor. The practice is for each collection facility to ship the thermostats collected to the Processor once they have a full pail or when requested to do so by the Agency as part of a collection sweep. c. For each shipment of thermostats by the collection facilities to the Processor, the Processor's listing provided the quantities for the following thermostat components: <ul style="list-style-type: none"> (i) Number of mercury thermostats (ii) Number of electronic thermostats (iii) Number of mercury switches/vessels (iv) Weight of the plastic components once the unit was dismantled (v) Weight of the metal components once the unit was dismantled d. The Processor's listing indicated the date each shipment was received as well as the corresponding Purolator package identification number.

Testing Procedure 2.0	To obtain comfort over the accuracy, completeness and existence of end-use of the product collected and the accuracy of the processor's receipt of weight, volume or quantity of product, test on a sample basis the deliveries of product recovered to their end-use.	
Procedures		Results
2. Obtain a listing of all registered processors and ensure that all receivers of product were approved processors.	2. The Processor is the primary and sole recycler of the thermostat units. The Processor ships the mercury containing switches to Aevitas Inc. ("the Disposer") for further dismantling and waste treatment of the mercury. The Disposer consolidates the collection of the mercury switches for eventual shipment to Bethlehem Apparatus Company in Pennsylvania, USA for further dismantling and waste treatment of the mercury switches. The Processor and the Disposer are the entities endorsed in the program's February 3, 2010 - Final British Columbia Stewardship Plan for Thermostats.	
3. Randomly select shipments from the Processor's listing and obtain a copy of their invoice or other supporting documentation submitted to the Agency.	3. Each shipment from the collection facility to the Processor as indicated on the Processor's listing was selected for testing and agreed to the monthly invoices issued by the Processor to the Agency.	
4. Verify that each of the Processor's invoices to the Agency has evidence of the weight, volume or quantity of the product shipped by the collection facility to the Processor.	4. Each of the monthly invoices from the Processor to the Agency evidenced the quantity of mercury containing switches plus the weight of the plastic and metal components after dismantling.	
5. Compare the total weight, volume or quantity listed on the Processor's invoice or other supporting documentation with the weight, volume or quantity listed on the detailed listing received in #1 and note any discrepancies.	5. The aggregate quantities of mercury containing switches and the weight of the plastic and metal components as reflected on the Processor's invoices for the fiscal period ended December 31, 2011 were compared to the detailed listing and reconciled for any differences. No discrepancies or irreconcilable differences were noted. In addition, the Purolator shipment invoices and Package Identification Number ("PIN") for a sample of 19 shipments were examined and cross-referenced to the Processor's detailed listing to ensure completeness and existence. No discrepancies were noted.	

Non-Financial Information Requirement: British Columbia Recycling Regulation 449/2004, Section 8 (2)(e) - The total amount of the producer's product sold and collected and, if applicable, the producer's recovery rate.

Testing Procedure 3.0	To obtain comfort over the completeness, accuracy, cut-off and validity of the total product recovered, test on a sample basis, the collection of product recovered.	
Procedures		Results
<p>1. Obtain a listing of thermostat shipments from collection facilities for the period under review with the following details:</p> <ul style="list-style-type: none"> a. The collection facility's name and address b. The date of collection from the facility c. The Processor to which the product was delivered. d. The date of delivery to the Processor. e. The amount of product collected (in units and in weight, where applicable). 	<p>1. As indicated in the results of Testing Procedure 2.0 (1), there is no listing from the collection facilities of the product shipped. Accordingly, the same Processor's listing was used for this procedure. The listing contained the following information:</p> <ul style="list-style-type: none"> a. The collection facilities name and address b. No such date available c. All shipments were made to the Processor as indicated in Procedure 2.0(1) d. The date of delivery to the Processor. e. The amount of product collected (in units and in weight, where applicable). 	
<p>2. Compare the total weight, volume or quantity of product collected as indicated on the Processor's detailed listing to the Agency's annual report.</p>	<p>2. The total weight, volume or quantity of the mercury containing thermostats, electronic thermostats, mercury switches/vessels, and plastic and metal components from the Processor's detailed listing agreed to the Agency's annual report.</p>	
<p>3. Scan the Processor's detailed listing to ensure that there were no collections that were outside of the Program's reporting period.</p>	<p>3. a. The detailed Processor's listing was scanned and 1 shipment was received by the Processor on December 14, 2010, which was included on the processor's fiscal 2011 listing. The shipment quantities were included as part of the 2010 report and accordingly, excluded from the 2011 annual report.</p> <p>b. The detailed processors listing was scanned for the month of January 2012 and it was noted that one shipment was received on December 28, 2011. The 2011 annual report appropriately included this shipment as part of the collection results.</p>	
<p>4. Randomly select collection facility shipments to the Processor and obtain the supporting document (Bill of lading or other support) to verify the quantity of the product shipped.</p>	<p>4. Invoices from the Program's Purolator account were obtained which indicated the PIN and the shipper's and receiver's names. The PIN number and shipper and receiver names on the Purolator invoices were compared to the Processor's detailed listing for 14 shipments. In addition, 5 shipments from Canadian Tire retail stores participating in the "return to retail" event were tested in the same manner. No discrepancies were noted. The Purolator invoices do not indicate the quantity of thermostats collected nor do the collection sites track the quantities shipped.</p>	

Testing Procedure 3.1	To obtain comfort over the calculated recovery rate, by product type (where applicable).	
Procedures		Results
<p>1. Check the mathematical accuracy of the Calculated Recovery Rate (product collected by the collection facilities divided by the number of thermostats available for collection in the marketplace) and compare the Calculated Recovery Rate to the recovery rate reported by the Agency in the annual report. Note any discrepancies.</p>	<p>1. Neither the total number of thermostats available for collection or the calculated Recovery Rate is disclosed in the Agency's annual report. The Agency reported in the annual report the target number of thermostats to be collected for fiscal 2011 was 4,388 along with the actual collection results for the fiscal year of 1,876.</p>	