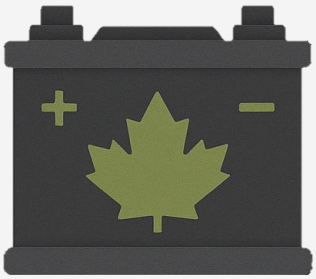
Canadian Battery Association

British Columbia

2024 EXTENDED PRODUCER RESPONSIBILITY ANNUAL REPORT



Canadian Battery Association

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1) Executive Summary

In 2024, the Canadian Battery Association (CBA) continued to deliver strong environmental performance under British Columbia's Lead-Acid Battery (LAB) Extended Producer Responsibility (EPR) program. Through BC's proven Return-to-Retail (R2R) collection model and a network of 39 registered collection facilities, end-of-life LABs were systematically diverted from the municipal waste stream and directed to licensed secondary smelters for closed-loop recycling.

In 2024, CBA members reported total sales of 26,220,884 kilograms and recoveries of 23,327,653 kilograms in British Columbia, reflecting a recovery rate of 89.0%. On a per-capita basis, BC achieved 4.60 kg sold per person and 4.09 kg recovered per person. Waste characterization studies conducted across multiple BC regional districts again found LABs at or near 0.00% of sampled waste streams, confirming near-total landfill diversion.

Consumer awareness of LAB recyclability remained strong in 2024. The consumer survey showed 72% of respondents recognize that LABs are recyclable, and 84% of DIY battery changers know where to return them, reflecting the continued effectiveness of the return-to-retail model and its embedded consumer messaging at the point of purchase.

The CBA's collection network served an estimated 93.0% of the BC population residing in recognized census areas in 2024, as assessed using the Eunomia Index of Remoteness accessibility framework. The program exceeded its service targets in three of five accessibility tiers, including the two largest by population — Easily Accessible (99.7% served, target 95%) and Accessible communities (91.3% served, target 90%). Two tiers — Less Accessible and Very Remote — did not meet their targets, a result attributable in significant part to the reduction in the registered RCF network following amendments to BC's Hazardous Waste Regulation in 2023. The CBA is actively working to restore and expand network coverage in these areas.

Environmental performance and innovation stories in 2024 highlighted the strength and continued relevance of the LAB circular economy. In September 2024, KC Recycling, BC's largest LAB recycler, announced a $2 million expansion of its polypropylene processing plant in Trail, supported by $1.2 million from BC's CleanBC Plastics Action Fund, increasing the closed-loop recovery of battery plastic. The same month, the 38th European Lead Battery Conference in Milan drew a record 1,000-plus attendees from more than 50 countries, reflecting the vitality of global LAB innovation and the growing demand for advanced LAB technology across energy storage and automotive applications. In October 2024, the U.S. Department of Energy launched a new multi-year funded project bringing together the Consortium for Battery Innovation, Battery Council International, and U.S. national laboratories to advance LABs as a long-duration energy storage solution, further affirming lead's expanding role in North America's clean energy future and the strategic importance of the recycling infrastructure that supports it.

The past three years have seen a substantial expansion of EPR obligations for LAB producers across Canada. As a lean national organization managing programs across multiple jurisdictions, the CBA has worked diligently to adapt its systems and processes to meet these growing obligations. The Association looks forward to continuing to work closely with the BC Ministry of Environment and Parks — strengthening reporting, deepening partnerships, and maintaining its longstanding commitment to environmental leadership in LAB stewardship across British Columbia.

Table 1: 2024 CBA Program Performance Summary

Regulatory requirement	Target / Report	Results	Follow-Up Action
Educational materials & strategies s.8(2)(a)	Report	Rack cards (EN/FR) at all RCF retail locations. Member-based compliance guidance distributed to retailers, haulers, and collection facilities. See Appendix 1	None
Total RCFs & changes s.8(2)(b)	Report	39 RCFs in 20 communities. Down from 253 in 2022 due to Hazardous Waste Regulation amendments. See Appendix 3.	Work with Ministry to expand compliant network.
Environmental impact reduction & recyclability s.8(2)(c)	Report	1. Battery Council International Centennial (2024) — BCI celebrated its 100th anniversary, highlighting the LAB industry's 99% recycling rate, 90% GHG reduction from using recycled versus mined lead, and the diversion of more than 160 million batteries from landfill annually. 2. KC Recycling Polypropylene Expansion (September 2024) — KC Recycling received $1.2 million from the CleanBC Plastics Action Fund to expand its polypropylene plant, increasing closed-loop recovery of battery plastic by 1,000 metric tonnes annually. 3. ELBC 2024 Global Lead Battery Conference (September 2024) — The 38th European Lead Battery Conference in Milan drew a record 1,000-plus attendees from 50-plus countries, showcasing advances in LAB technology for energy storage and automotive applications. 4. US DOE Funds Lead Battery Long-Duration Energy Storage Research (October 2024) — The US Department of Energy launched a 3-year project with the Consortium for Battery Innovation, Battery Council International, and US national laboratories to advance LABs as a long-duration energy storage solution.	

Pollution prevention hierarchy s.8(2)(d)	Report	1. Reduce environmental impacts – See above 2. Reuse – Producers refurbish usable batteries and sell as an alternative to a new battery. 3. Recycle – Once a battery is no longer usable for its intended purpose it is sent to a smelter for recycling. 4. Recovery – residuals management	None
Product sold & collected s.8(2)(e)	Report	Sold: 26,220,884 kg Recovered: 23,327,653 kg	See Table 7 for Regional District breakdown
Independently audited financial statements s.8(2)(f)	Report	N/A	N/A
Recovery rate s.8(2)(g)	Target 95%	89%	Review and improve data collection system and management.

2) Program Outline

The CBA is a national, non-profit industry organization that administers the Extended Producer Responsibility (EPR) program for LABs in British Columbia under the authority of the Environmental Management Act Recycling Regulation [B.C. Reg. 449/2004]. The CBA acts as the appointed EPR agency on behalf of its producer members including manufacturers, distributors, and importers of LABs sold into the BC market as provided under Part 1 section 2(2) of the regulation.

Products Covered

The CBA's EPR plan covers all consumer and commercial LABs, including automotive, powersport, AGM (absorbed glass mat), small-sealed lead-acid (SSLA), and commercial batteries such as golf cart, forklift, telecom, energy storage, and uninterruptible power supply (UPS) batteries. These products are regulated under Schedule 1 of the Recycling Regulation.

Governance

The CBA is governed by a Board of Directors representing its producer members. The Executive Director oversees day-to-day operations, regulatory compliance, member reporting, and coordination with provincial regulators, collection partners, and recyclers. The CBA operates as a lean national organization, and over the past several years its obligations have expanded considerably as EPR requirements have multiplied across Canadian provinces. The Association has responded by strengthening its internal systems, data processes, and reporting frameworks to keep pace with this growing regulatory landscape — reflecting its ongoing commitment to transparency, accountability, and collaborative stewardship on behalf of its members and provincial partners.

2024 Board Members:

- D'Arcy O'Neill (Crown Battery of Canada) – President
- Ian Dickie (Stryten Canada Inc) – Past President
- Michael Graper (C&D/Trojan) – Treasurer
- Michael Bouchard (East Penn Canada) – Director
- JD Surrette (Surrette Battery Company)– Director
- Randy Anderson (Canadian Energy) – Director
- Steve Stack (Terrapure Environmental) – Director
- Thomas Kettinger (Clarios) – Director
- Adam Reed (Interstate Batteries) – Director
- Osman Akhi (Enersys Canada) - Director

Collection Approach

The CBA's collection system is built on a province-wide Return-to-Retail (R2R) model, supported by additional recycling facilities serving smaller, northern, and First Nations communities. Under this model, consumers return used LABs to the retail point of purchase when acquiring a replacement, supported by a core charge incentive system. Licensed transporters collect used batteries from retail locations and deliver them to secondary lead smelters or approved consolidators for recycling. In 2024, the program maintained a network of 39 registered collection facilities (RCFs) across BC, providing service coverage to approximately 93.0% of the recognized community population.

Regulatory Context and Looking Ahead

The past three years have seen a substantial expansion of EPR obligations for LAB producers across Canada, with new and evolving provincial requirements placing increasing demands on program administration and reporting. As a small national organization managing programs across multiple jurisdictions, the CBA is working diligently to adapt its systems and processes to meet these growing obligations. The Association looks forward to continuing to work closely with the BC Ministry of Environment and Parks as it builds on this progress by strengthening reporting, deepening partnerships, and maintaining its longstanding commitment to environmental leadership in LAB stewardship across BC.

3) Public Education Materials and Strategies

Overview

In BC, the CBA continues to support awareness and compliance through indirect education efforts rather than direct public outreach. Given the province's consistently high LAB recovery rate—approaching complete collection coverage—the data do not indicate a need for additional investment in large-scale consumer education campaigns.

Instead, the CBA focuses on maintaining a clear and accessible flow of information through its members and collection partners. Educational materials, including rack cards in both French and English (Appendix 1), are made available at participating member retail locations to inform consumers about safe handling, environmental responsibility, and proper recycling options.

The Association also provides updated guidance materials and compliance information to retailers, haulers, and collection facilities, ensuring that all industry stakeholders remain aligned with all regulatory bodies. These activities help sustain strong environmental performance and uphold the high level of stewardship participation already achieved in the province.

Through this ongoing member-based approach, the CBA continues to reinforce BC's success in LAB recovery while maintaining operational efficiency and regulatory compliance without duplicating educational resources where recovery outcomes are already near perfect.

Consumer Awareness

In 2024, consumer awareness of LAB recycling continued to strengthen, reflecting the maturity of the CBA stewardship system. 72% of consumers now recognize that LABs are recyclable (up from 69% in 2022), while 58% know where to take unwanted batteries for proper disposal (See Appendix 2 for details).

Most consumers (80%) said they would go online to find recycling information—highlighting the value of maintaining clear digital guidance—while only 3% would discard a battery improperly. The most common reason for not recycling remains waiting to accumulate enough for a trip (40%), though the number of people who "don't know where to take it" fell sharply from 22% to 12%.

The DIY segment—about 18% of respondents—remains a key audience for safe-handling and return messaging. Overall, the results reaffirm that CBA's return-to-retail model continues to achieve high participation, strong consumer knowledge, and near-perfect diversion of LABs from landfill.

Waste Characterization Studies

Over the ten-year period from 2014 to 2024, LABs consistently appeared in negligible quantities in municipal waste characterization studies across British Columbia. The reported percentage of LABs in sampled waste streams ranged from 0.00% to 0.06%, with the 2024 provincial average being 0.00% — effectively indicating that LABs are almost entirely diverted from disposal through established recycling systems.

The historical data show that, despite slight variations (such as the minor 0.06% presence in 2015), no upward trend of LAB disposal was observed. Instead, the consistently low figures affirm that consumer awareness and recycling access remain strong across residential and industrial sectors.

Table 2: Percentage of LABs found in waste samples

	2024	2023	2022	2021	2020	2019	2018	2017
% of waste analyzed	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%

4) Collection System and Facilities

The CBA operates a province-wide return-to-retail (R2R) collection model in British Columbia, through which LABs are accepted at registered Return Collection Facilities (RCFs), made up of primarily automotive parts and battery retailers, industrial battery suppliers, and metal recyclers at no cost to the consumer. The model leverages existing commercial networks to maximize geographic reach without requiring dedicated depot infrastructure in most communities.

In 2024, the CBA's BC collection network consisted of 39 registered RCFs located in 20 communities across the province. See Appendix 3

It is important to note that the number of registered RCFs decreased significantly from earlier reporting periods — the 2021 BC Annual Report documented 253 RCFs across a much larger retail network. This reduction was driven primarily by amendments to BC's Hazardous Waste Regulation, which tightened registration and compliance requirements for battery collection facilities. A substantial number of previously participating locations that did not meet the updated requirements were removed from the registered network.

Accessibility

Prior BC annual reports assessed collection accessibility using a three-tier framework grouping communities by recycling option type — Return-to-Retail (3 km target), Other Recycling Option (6 km), and Go to Another Community (42 km). For the 2023 and 2024 reporting period, the CBA adopted a substantially updated methodology developed by Eunomia Research & Consulting.

The Eunomia framework uses Statistics Canada's Index of Remoteness (IoR) — a data-driven measure of geographic isolation based on proximity to service centres weighted by population — to classify all BC census areas into five accessibility tiers. Each tier carries a distance target and a minimum population-served target calibrated to reflect realistic service expectations given population density and road travel conditions.

This approach is more granular, nationally consistent, and methodologically defensible than the prior three-tier model. Because the classification criteria, distance targets, and population benchmarks differ substantially between frameworks, 2024 accessibility figures are not directly comparable to those reported in 2021, and the comparison in Table 3 below should be understood as contextual rather than trend based.

Table 3: Comparison of Accessibility Frameworks: 2022 vs. 2024

	2022 Framework	2023–2024 Framework
Classification basis	Recycling option availability (RTR / Other / Go to Another)	Statistics Canada Index of Remoteness (5 tiers)
Tiers	3	5
Distance targets	3 km / 6 km / 42 km	7.5 / 11.7 / 25 / 40 / 52.5 km
Population basis	2016 Census	2021 Census
RCFs in network	253	39
Overall population served	99.93% (community population)	93.0% (census area population)

The substantial difference in overall population-served percentages reflects both the reduction in registered RCFs following the Hazardous Waste Regulation amendments and the expanded scope of communities assessed under the Eunomia framework, which includes a larger number of small and remote census areas not captured under the prior methodology.

2024 Accessibility Results

The CBA's collection network served an estimated 93.0% of the BC population residing within recognized census areas in 2024 (4,650,989 of 5,000,879 people). The program exceeded its service targets in three of five tiers, including the two largest by population, Easily Accessible communities (99.7% served, target 95%) and Accessible communities (91.3%, target 90%), which together represent approximately 85% of BC's recognized community population. The Remote tier also met its target (52.6% served, target 50%).

In the Less Accessible tier, the program served 81.7% of the relevant population against an 85% target, a gap of approximately 3.3 percentage points. In the Very Remote tier, which encompasses sparsely populated and geographically isolated communities in northern and coastal BC, the program served 17.8% against a 25% target. Both shortfalls are attributable in significant part to the contraction of the registered RCF network following the 2023–2024 amendments to BC's Hazardous Waste Regulation. Under the prior network of 253 RCFs, coverage in less accessible and remote communities was considerably broader; the current network of 39 registered facilities is concentrated in larger urban and suburban centres. The CBA is committed to growing the compliant network and looks forward to working with the BC Ministry of Environment and Parks to identify practical pathways for improving accessibility in these tiers.

Table 4: Summary of Lead Accessibility Statistics for British Columbia

Census Areas	Census Area Classifications	Index of Remotenes s Thresholds	2021 Census Area Population	Service Target (minutes)	Travel Target (km/hr)	Census Area Target (km)	Target: Population Served	Population Served	% Served
67	Easily Accessible	<0.1500	3,232,416	15.0	30	7.5	95%	3,222,402	**99.7%**
156	Accessible	<0.2888	1,029,494	20.0	35	11.7	90%	939,664	**91.3%**
151	Less Accessible	<0.3898	368,780	30.0	50	25.0	85%	301,156	**81.7%**
258	Remote	<0.5532	349,847	40.0	60	40.0	50%	184,154	**52.6%**
119	Very Remote	>0.5532	20,342	45.0	70	52.5	25%	3,613	**17.8%**
751			**5,000,879**					**4,650,989**	**93.00%**

5) Product Environmental Impact Reduction, Reusability and Recyclability

KC Recycling Expands LAB Plastic Recycling Capacity with CleanBC Support

In September 2024, KC Recycling, Western Canada's largest LAB recycler, announced a $2 million expansion of its polypropylene processing plant at its Trail, BC facility, supported by $1.2 million from BC's CleanBC Plastics Action Fund. The expansion will increase KC Recycling's production of high-quality recycled plastic resin by 1,000 metric tons annually and will implement a contamination reduction system allowing the recycled plastic to meet the Recycling Product News most stringent quality standards , enabling it to be used as resin for a significantly wider range of products. The polypropylene recovered at KC Recycling comes directly from the plastic cases of end-of-life LABs. The recovered plastic is pelletized into resin and supplied to manufacturers across North America to produce new battery cases, paint buckets, and plastic liners, completing a genuine closed loop. The expansion directly strengthens the LAB circular economy that the CBA's EPR program supports and exemplifies how investment in recycling infrastructure generates both environmental and economic returns for BC communities.

ELBC 2024: Global LAB Innovation Conference Draws Record Attendance

In September 2024, Milan hosted the 38th European LAB Conference (ELBC), the world's premier gathering of LAB researchers, manufacturers, and industry experts. ELBC 2024 drew a record number of attendees, with over 1,000 participants from more than 50 countries across six continents, including a significant number joining ELBC for the first time. The expo included 120 or more exhibitors from more than 20 countries, representing a diverse network of suppliers across the LAB industry. The conference, jointly organized by the International Lead Association and the Consortium for Battery Innovation (CBI), featured technical sessions spanning advanced LAB performance for stationary energy storage, low-voltage battery systems for hybrid and electric vehicles, and novel materials science aimed at extending battery cycle life and charge acceptance. A dedicated pre-conference workshop focused specifically on energy storage opportunities for lead batteries in different regions of the world. A 2024 Avicenne Energy report commissioned by CBI, released the same year, confirmed that lead batteries continue to provide 30% of the world's rechargeable energy storage needs and that start-stop technology using lead batteries is eliminating nearly 10 million tonnes of greenhouse gas emissions annually in the US alone. Battery Council International The record attendance at ELBC 2024 reflects the ongoing vitality of LAB technology as an active field of global research and innovation, underscoring the strategic importance of the mature, high-performing collection and recycling infrastructure, such as BC's EPR program, that keeps this circular economy functioning at near-complete diversion rates.

US Department of Energy Funds LAB Long-Duration Energy Storage Research

In October 2024, the U.S. Department of Energy launched a three-year research project — running to September 2027 — bringing together the Consortium for Battery Innovation, Battery Council International, U.S. national laboratories, and battery manufacturers to advance LABs as a long-duration energy storage solution. The investment reflects growing recognition that LABs have a significant role to play in grid stability and renewable energy integration alongside next-generation chemistries. For the CBA, it affirms that the LAB value chain extends well beyond automotive applications and that robust end-of-life recovery programs like BC's EPR program are foundational to the North American battery supply chain that initiatives like this one depend upon.

6) Pollution Prevention Hierarchy and Product/Componant Management

Table 5: LAB Product/Component Management

Product/ Component/ Material	% of battery by weight	Recovery efficiency	Processing Methods	Final Disposition
Lead and Lead compounds	~60-65%	~99%	Refined lead ingots and alloys (with tin, antimony). Infinitely recyclable with no quality loss.	Recycled New battery plates, grids, terminals — closed loop
Sulphuric acid electrolyte	~20–25%	~100%	Neutralized to water, or processed into sodium sulphate, or purified for reuse as battery-grade acid.	Reuse or Recycled Fertilizer production, battery manufacturing, galvanizing, or water treatment
Polypropylene casing	~5–8%	~99%	Shredded, washed, melted and extruded into PP pellets. Nearly all new battery cases in North America use recycled PP from spent batteries.	Recycled New battery cases — closed loop
Cell separators (PE/ fiberglass)	~3–5%	Energy recovery	Polyethylene separators and fiberglass mats (AGM) are currently not commercially recyclable as a material. Used for energy recovery in the smelting furnace.	Energy Recovery Energy recovery in smelting process — not material recycling
Whole Battery	**100%**	**Up to ~99%**	**Most recycled consumer product in North America. All three primary components (lead, acid, plastic) are 100% recyclable by design.**	

7) Product Sold and Collected and Recovery Rate

Table 6: 2024 BC Sales and Recovery Summary

Metric	2024 Result
Total Sales (kg)	26,220,884
Total Recovered (kg)	23,327,653
Recovery Rate	89.0%
BC Population (July 1, 2024)	5,698,430
Sales per Capita (kg/person)	4.60
Recovery per Capita (kg/person)	4.09

Program Performance

In 2024, CBA members reported total BC sales of 26,220,884 kilograms and recoveries of 23,327,653 kilograms, resulting in a recovery rate of 89.0%. On a per-capita basis, BC achieved 4.60 kg sold per person and 4.09 kg recovered per person (based on a 2024 provincial population of 5,698,430).

Year-to-year variations in the recovery rate reflect normal operational factors including reporting timelines, interprovincial shipment consolidation, and shifts in commercial battery procurement patterns. The 2023 result of 73.8% reflected known reporting timing issues, an issue the CBA has been working to address through improved data reconciliation. The 2024 result of 89.0% demonstrates improved data capture and continued strong collection performance.

Table 7: 2024 Recovery of Lead Batteries by Regional District

Regional District	2024 Population[1]	Estimated kg Recovered
Alberni-Clayoquot	35,906	146,988
Bulkley-Nechako	41,663	170,555
Capital	460,000	1,883,101
Cariboo	68,730	281,359
Central Coast	3,799	15,551
Central Kootenay	67,593	276,705
Central Okanagan	252,000	1,031,611
Columbia-Shuswap	60,361	247,099
Comox Valley	78,354	320,757
Cowichan Valley RD	95,000	388,901
East Kootenay	69,931	286,276
Fraser Valley	363,000	1,486,012
Fraser-Fort George	106,000	433,932
Metro Vancouver	3,109,000	12,727,307
Kitimat-Stikine	35,283	144,437
Kootenay-Boundary	35,430	144,997
Mount Waddington	12,251	50,151
Nanaimo	186,000	761,427
North Okanagan	100,000	409,369
Northern Rockies	5,149	21,078
Okanagan-Similkameen	95,449	390,739
Peace River	70,759	289,665
Powell River	22,481	92,030
Skeena-Queen Charlotte	20,443	83,687
Squamish-Lillooet	50,669	207,423
Stikine	737	3,017
Strathcona	52,601	215,332
Sunshine Coast	33,875	138,674
Thompson-Nicola	159,000	650,898
TOTAL	5,698,419	23,327,592

[1] Population sources: Statistics Canada Table 17-10-0152-01 / BC Stats (July 1, 2024). Confirmed values for Metro Vancouver (3,109,000), Capital (460,000), Fraser Valley (363,000), Central Okanagan (252,000), Nanaimo (186,000), Thompson-Nicola (159,000), Fraser-Fort George (106,000), North Okanagan (100,000), and Cowichan Valley (95,000) from BC Stats July 2025 publication. Remaining districts estimated proportionally using 2021 Census populations calibrated to the Statistics Canada provincial total of 5,698,430 (July 1, 2024).
Sources: BC Stats, Sub-Provincial Population Estimates Highlights (July 2025); Statistics Canada Table 17-10-0152-01; BC Stats Population Projections at Regional District Level (July 2025).

Table 8: Landfill Diversion Rate (Waste Characterization Studies)

Sample Type / Study	CBA Batteries Found (#)	CBA Batteries Found (kg)	Samples (#)	Sample Volume (kg)	CBA Diversion Rate
2024 Studies — Tetra Tech / SABC					
Cowichan Valley RD (CVRD) Jul 23–Aug 2, 2024 · SF(24), ICI(6), DO(12)	0	0	42	3,920	0.00%
District of Squamish (DoS) Sept 9–17, 2024 · SF(8), MF(7)	0	0	15	1,532	0.00%
Squamish-Lillooet RD (SLRD) *Sept 9–17, 2024 · SF(8)*	0	0	8	809	0.00%
City of Surrey (CoS) Oct 28–Nov 2, 2024 · SF(20)	0	0	20	2,043	0.00%
Thompson-Nicola RD (TNRD) Dec 9–13, 2024 · SF(5), DO(12)	0	0	17	1,588	0.00%
2024 subtotal	0	0	102	9,892	0.00%
Cumulative Province-Wide Results (2014–2024, 21 Studies, 818 Samples)					
Residential (SF/MF)	0	0	397	39,239	100.0%
Drop-off (DO)	0	0	130	12,077	100.0%
Industrial / Commercial / Institutional (ICI)[2]	0	0	6	611	100.0%
Transfer Station (TS)	1[1]	0.75	33	3,277	99.98%
TOTAL (2014–2024)	1	0.75	566	55,204	99.99%

[1] *One battery fragment found during transfer station sampling (2017 study). No batteries found in any residential, drop-off, or ICI samples across all 21 studies (2014–2024).*
[2] *ICI sector first introduced in the 2024 CVRD study. Prior studies did not include ICI sampling for EPR secondary characterization.*
2024 study sectors: *SF = single-family residential; MF = multi-family residential; DO = residential drop-off; ICI = industrial, commercial & institutional.*
Source: *Tetra Tech Canada Inc., 2024 SABC Characterization Studies, Technical Memo 704-SWM.PLAN03061-10, February 5, 2025 (Issued for Review – Rev02). Studies 2014–2023 from prior SABC/MEM characterization reports.*

Recovery Rate Methodology

The calculation of the LAB recovery rate is based on data collected from reporting members of the CBA. Each member reports their sales and recovery volumes, which are adjusted for sales made to other CBA members to prevent double counting. Interprovincial sales are also tracked to ensure the batteries sold from one province into another province are properly attributed. Recovery data is compiled according to the province where the waste batteries were generated, allowing comparisons to be made against sales within the same jurisdiction to determine provincial recovery rates. However, accurately tracking the movement of both new and waste lead batteries presents challenges, as used batteries are often consolidated in other provinces before being shipped to secondary lead smelters for recycling.

The recovery rate below is calculated as the percentage of used lead batteries recovered compared to the total number of new batteries sold in the same calendar year. Using the same year for both figures provides a consistent and accurate measure of program performance. This approach is supported by the relative stability of lead acid battery sales across Canada, as demand for automotive, industrial, and marine batteries remains steady from year to year. Because sales volumes do not fluctuate significantly, aligning recovery and sales data within the same reporting period minimizes distortions caused by timing differences or market variability. This ensures that the calculated recovery rate accurately represents how effectively batteries sold each year are being collected and returned for recycling.

Recovery Rate Calculation

$$Recovery\ Rate\ (\%) = \frac{LABs\ Recovered\ (kg)}{LAB\ Sales\ (kg)} \times 100$$

Conclusion

The 2024 program results affirm British Columbia's strong performance in LAB stewardship. With a recovery rate of 89.0% and accessibility service reaching 93.0% of the recognized community population, BC's diminished return-to-retail infrastructure continues to deliver near-complete diversion of this hazardous product from the municipal waste stream.

Two accessibility tiers — Less Accessible and Very Remote — did not meet their targets, primarily because of the 2023 amendments to BC's Hazardous Waste Regulation. The CBA acknowledges these gaps and is committed to working collaboratively with the BC Ministry of Environment and Parks to identify practical pathways to restore and expand network coverage in these communities.

The CBA and its members remain committed to maintaining this high level of environmental performance, collaborating with provincial regulators, industry partners, and retailers to ensure that all LABs are safely collected, processed, and recycled in accordance with provincial and national standards.

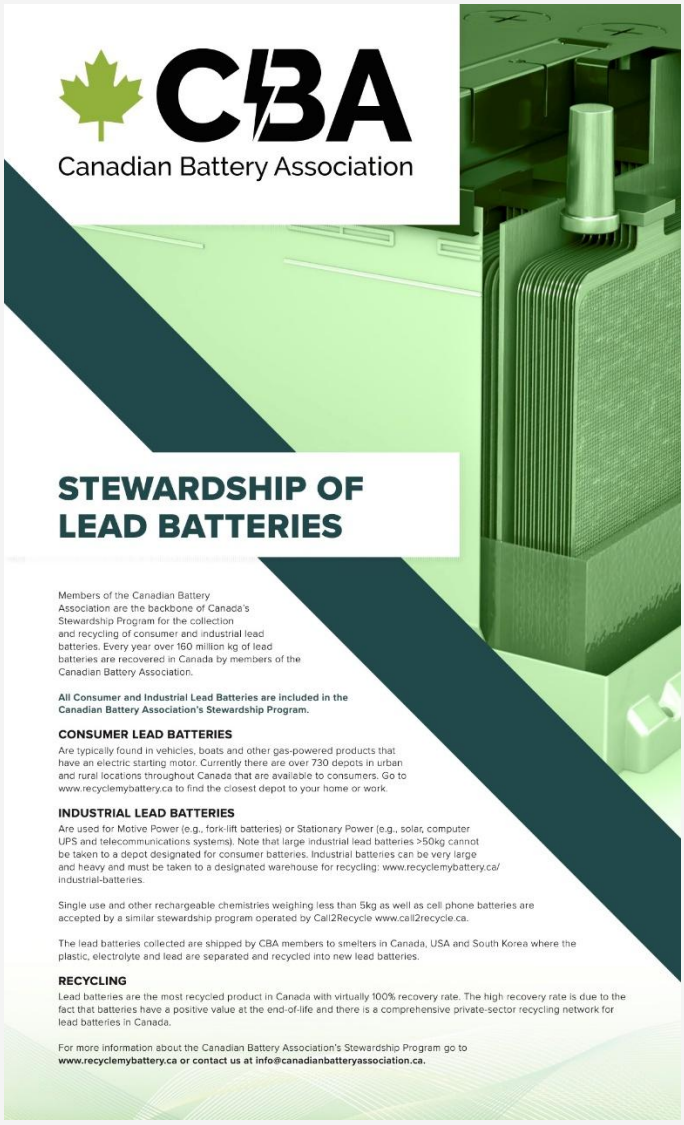
8) Program Performance

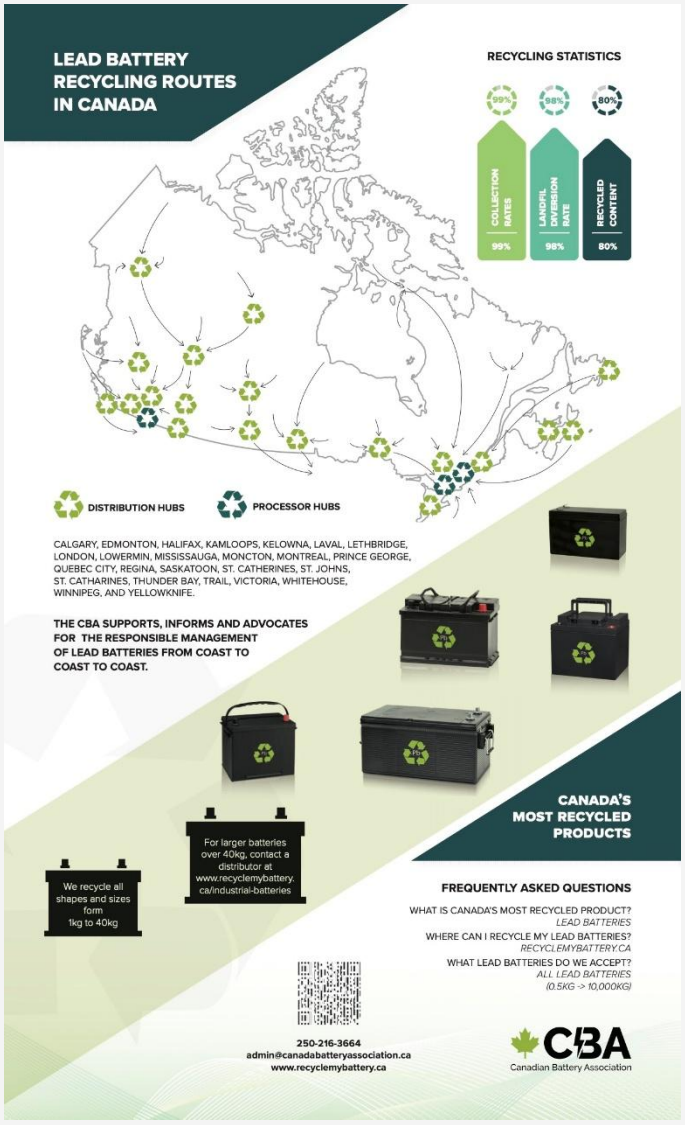
2024 LAB Sales and Recovery			
Program Metric	**Target / Report**	**Sales & Collection Results**	**Follow-Up Action**
LAB* Sales	Report	28,027,847 kg	None
LAB Recovery	Report	26,729,452 kg	None
LAB Recovery Rate	Target >90%	Recovery Rate: 89.0%	Continue to improve data collection and management.
Sales per Capita	Report	4.60 kg/person/yr	Continue to monitor and compare to other Provinces
Recovery per Capita	Report	4.09 kg/person/yr	Continue to monitor and compare to other Provinces
Landfill Diversion Rate	Report	100% - Residential See Table 8	Continue to participate in Waste Characterization Studies to corroborate recovery rates and identify priority sectors
LAB Consumer Awareness			
Per Cent Awareness based on Standardized Surveys	Report	See Appendix 2	Continue to participate in consumer awareness studies.
LAB Accessibility (Eunomia 5-Tier Framework)			
Total Number of RCFs	Report	39 RCFs in 20 communities	Work with Ministry to restore network coverage.
Easily Accessible (IoR < 0.1500)	Target: 7.5 km / 95% served	67 census areas | 3,232,416 pop | 3,222,402 served | 99.7% ✓ Target Met	Continue to work with Regional Municipalities, IZWTAG & FNRI to identify priority communities that would benefit from an RCF
Accessible (IoR < 0.2888)	Target: 11.7 km / 90% served	156 census areas | 1,029,494 pop | 939,664 served | 91.3% ✓ Target Met	
Less Accessible (IoR < 0.3898)	Target: 25 km / 85% served	151 census areas | 368,780 pop | 301,156 served | 81.7% — Target Not Met	
Remote (IoR < 0.5532)	Target: 40 km / 50% served	258 census areas | 349,847 pop | 184,154 served | 52.6% ✓ Target Met	Continuing to work with IZWTAG and FNRI expand the number of RCFs especially in small communities that do not meet the Accessibility Target

Very Remote (IoR ≥ 0.5532)	Target: 52.5 km / 25% served	119 census areas | 20,342 pop | 3,613 served | 17.8% — Target Not Met	Continue to work with IZWTAG and FNRI to expand the number of RCFs in remote locations and work with Provincial Government to harmonize the Hazardous Waste requirements with the Product Stewardship requirements
Overall Population Served	Report	93.0% of recognized census area population	
Other 2024 Lead Battery Targets & Performance Indicators			
Use of Permitted Recycling Facilities	Target 100%	100% waste lead batteries sent to Permitted Recycling Facilities Target Met	Monitor and track progress year over year
Adherence to International Hazardous Waste Commitments	Target 100%	100% Compliance to International Requirements Target Met	Continue to monitor and work with Transport Canada and Environment Canada.
Pollution Prevention Hierarchy	Report	Lead: ~99% Recovery | Acid: Recovered | Casings: Pelletized | Separators: Energy recovery	

** Includes consumer lead batteries includes automotive, small-sealed lead, AGM batteries and powersport batteries as well as commercial golf cart, forklift, telco, energy storage and UPS batteries.*

Appendix 1: Educational Materials Example






CBA
Canadian Battery Association
GESTION DES BATTERIES AU PLOMB
East Penn Canada est un contributeur majeur au Programme de Gestion de l'Association Canadienne de L'Industrie de la Batterie pour le ramassage et le recyclage des batteries au plomb de consommation courante ainsi que pour les batteries industrielles dans toutes les Provinces canadiennes. En 2012, plus de 80 millions de kg de batteries au plomb ont été récupérés au Canada par les membres de l'Association Canadienne de la Batterie.
Toutes les batteries au plomb de consommation courante et industrielles sont incluses dans le programme de gestion de l'Association Canadienne de la Batterie.
BATTERIES AU PLOMB DE CONSOMMATION COURANTE
Elles se trouvent généralement dans les véhicules, les bateaux et autres produits à essence équipés d'un moteur de démarrage électrique. Il existe actuellement plus de 730 dépôts accessibles aux consommateurs dans les zones urbaines et rurales partout au Canada. Visitez le site www.recyclemybattery.ca pour localiser le dépôt le plus proche de votre domicile ou de votre lieu de travail.
BATTERIES INDUSTRIELLES AU PLOMB
Elles sont utilisées pour l'Énergie Motrice (par exemple, les batteries de chariots élévateurs) ou pour l'Énergie Stationnaire (par exemple, l'énergie solaire, les systèmes d'urgence pour ordinateur, et les systèmes de télécommunication). Notez que les batteries industrielles au plomb ne peuvent pas être transportées à un dépôt désigné pour les batteries de consommation courante car elles sont très lourdes et volumineuses et doivent donc être acheminées à un entrepôt désigné pour le recyclage de ce type de batteries - www.recyclemybattery.ca/industrial-batteries.
Tout autres types de pile de consommation courante pesant moins de 5 kg ainsi que les piles de téléphones portables sont acceptées par un programme de gestion similaire géré par Appel à Recycler www.call2recycle.ca. Les batteries au plomb usagées ramassées par East Penn Canada sont expédiées vers des fonderies au Canada ou aux États-Unis où le plastique, l'électrolyte, et le plomb sont séparés et recyclés.
RECYCLAGE
Les batteries au plomb sont les produits les plus recyclé au Canada avec un taux de récupération de près de 100%. Le taux de récupération élevé est dû au fait que les batteries ont une valeur économique positive en fin de vie du produit, et aussi au fait qu'il existe un réseau important de recycleurs privés pour les batteries au plomb au Canada. Il n'y a pas de frais environnementaux pour les batteries au plomb au moment de l'achat. Pour plus d'informations sur le Programme de Gestion de l'Association Canadienne de L'Industrie de la Batterie, visitez le site www.recyclemybattery.ca ou contactez-nous à info@canadianbatteryassociation.ca.


ROUTES DE RECYCLAGE DES BATTERIES AU PLOMB AU CANADA
STATISTIQUES DE RECYCLAGE
99%
98%
80%
TAUX DE COLLECTION
99%
TAUX DE DIVERSION DES SITES D'ENFOUISSEMENT
98%
CONTENU RECYCLÉ
80%
CENTRES DE DISTRIBUTION
FONDERIES
CALGARY, EDMONTON, HALIFAX, KAMLOOPS, KELOWNA, LAVAL, LETHBRIDGE, LONDON, LOWERMIN, MISSISSAUGA, MONCTON, MONTREAL, PRINCE GEORGE, QUEBEC CITY, REGINA, SASKATOON, ST. CATHERINES, ST. JOHNS, ST. CATHARINES, THUNDER BAY, TRAIL, VICTORIA, WHITEHOUSE, WINNIPEG, AND YELLOWKNIFE.
NOUS SOUTENONS, INFORMONS, ET PRÉCONISONS LA GESTION RESPONSABLE DES BATTERIES AU PLOMB D'UN OCÉAN À L'AUTRE.
LES PRODUITS LES PLUS RECYCLÉS AU CANADA
Nous recyclons toutes les formes et tailles de batteries de 1kg à 40kg
Pour les batteries de plus de 40 kg, contactez un distributeur sur www.recyclemybattery.ca/batteries-industrielles
QUESTIONS FRÉQUEMMENT POSÉES
QUEL EST LE PRODUIT LE PLUS RECYCLÉ AU CANADA?
LES BATTERIES AU PLOMB
OÙ PUIS-JE RECYCLER MES BATTERIES AU PLOMB?
RECYCLEMYBATTERIE.CA
QUELLES BATTERIES AU PLOMB ACCEPTONS-NOUS?
TOUTES BATTERIES AU PLOMB (0,5KG -> 10 000KG)
250-216-3664
admin@canadabatteryassociation.ca
www.recyclemybattery.ca
CBA
Canadian Battery Association

Appendix 2: Consumer Awareness

SABC Consumer Awareness Studies – LAB Results

Question Category	Question Subcategory		2013	2016	2018	2020	2022	2024
Currently have unwanted:	Lead Batteries		6%	8%	9%	6%	5%	8%
Do-it-Yourself (DIY)	Change Lead Batteries		45%	40%	38%	19%	18%	18%
Top-of-Mind Recyclables/Returnable/Safe Disposal	Lead Batteries					<2%	<2%	<1%
Knowledge Recyclable/Safe Return of unwanted lead batteries:	Among all Respondents		76%	78%	77%	74%	69%	72%
	Among those that currently have a Lead Battery					88%	81%	75%
	Among DIYers that change Lead Batteries					90%	88%	87%
Knowledge of where to take unwanted lead batteries:	Among those that usually have a Lead Battery		44%	50%	51%	64%	59%	65%
	Among those that currently have a Lead Battery		54%	72%	69%	91%	67%	72%
	Among DIYers that change Lead Batteries		58%	68%	68%	85%	81%	84%
Likely to do if recycle/safe disposal unknown:	Among all Respondents	Go Online				81%	80%	80%
		Ask Family / Friend				8%	9%	9%
		Throw Out				4%	3%	3%
		Not Sure				4%	5%	5%
	Among those who currently have unwanted lead batteries	Go Online				73%	75%	75%
		Ask Family / Friend				10%	16%	16%
		Throw Out				15%	8%	8%
		Not Sure				1%	0%	0%
	Among DIYers that change lead batteries	Go Online				80%	84%	84%
		Ask Family / Friend				12%	9%	9%
		Throw Out				6%	4%	4%
		Not Sure				1%	1%	1%
Question Category	**Question Subcategory**		**2013**	**2016**	**2018**	**2020**	**2022**	**2024**
Usual behaviour to get rid of items	Among Those Who Usually Have lead batteries	Recycle / Return				61%	8%	65%
		Throw Out				6%	18%	9%
		Someone Else				28%	<1%	24%
		Not Sure				8%	72%	8%
	Among those who	Recycle /				73%	75%	75%

	currently have lead batteries	Return						
		Throw Out				15%	87%	18%
		Someone Else				15%	65%	13%
		Not Sure				1%	72%	0%
	Among DIYers that change Lead Batteries	Recycle / Return				84%	84%	81%
		Throw Out				5%	80%	4%
		Someone Else				7%	9%	10%
		Not Sure				2%	3%	5%
Aided Reasons for Not Recycling/Returning/Safe Disposing	Among those who have unwanted lead batteries currently or those who have thrown them away in the past	Don't know where to take				26%	5%	12%
		Will when enough to make trip				32%	75%	40%
		Not Convenient				11%	16%	17%
		Didn't know it could be				8%	8%	8%
		Can't be bothered / No time				14%	0%	13%
		Can't get to place				8%	84%	10%
		Plan to re-use / fix / sell				7%	9%	12%
Lead Battery Program Convenience - DIY Products	Among all aware		75%	67%	72%	75%	71%	68%
	Among users aware		85%	81%	81%	81%	83%	79%
	Among DIY aware		81%	73%	77%	85%	80%	76%
Trust in Lead Battery Program - DIY Products	Among all aware		84%	81%	84%	89%	86%	87%
	Among users aware		85%	88%	90%	92%	90%	90%
	Among DIY aware		85%	87%	86%	93%	89%	87%

Appendix 3: List of Return Collection Facilities 2024

Facility Name	Address	City	Postal Code	Telephone
Motive Power Products	2188 Mason Street	Abbotsford	V2T 0J8	604-210-4650
ABC Recycling	8081 Meadow Avenue	Burnaby	V3N 2V9	604-522-9727
DC Power Group	1258 Boundary Road	Burnaby	V5K 4T6	604-294-1891
Edmonds Batteries	7152 Curragh Avenue	Burnaby	V3N 1B3	604-525-8144
HUB Power	114-4238 Lozells Avenue	Burnaby	V5A 0C4	604-420-7737
ABC Recycling	4318 Terminal Place	Campbell River	V9H 1V5	250-286-3504
Radius Recycling	5551 Duncan Bay Road	Campbell River	V9H 1N6	250-287-8748
Radius Recycling	13271 Trans Canada Highway	Cassidy	V9G 1L8	250-245-5051
Interstate Batteries	1651 Old Island Hwy	Colwood	V9B 1H9	250-391-9748
Magnacharge Batteries	1279 Derwent Way	Delta	V3M 5V9	604-525-0391
Canadian Energy	791 Cave Street	Esquimalt	V9A 5T6	250-361-3933
ABC Recycling	9631 78 Street	Fort St. John	V1J 4J8	250-785-7900
Grand Forks Bottle Depot	8058 Donaldson Drive	Grand Forks	V0H 1H2	250-442-2523
Canadian Energy	1440 Battle Street	Kamloops	V2C 2N8	250-374-8914
DC Power Group	150 Victoria Street W	Kamloops	V2C 1A4	250-434-5790
ABC Metals	3258 Hwy 97 N	Kelowna	V1X 5C1	250-765-6607
Canadian Energy	1891 Springfield Road	Kelowna	V1V 5V5	250-765-6120
East Penn Batteries	1505 Hardy Street	Kelowna	V1Y 7W9	604-455-0355
Interstate Batteries	311 Banks Road	Kelowna	V1X 6A1	250-860-3444
The Battery Doctors	1972 Windsor Road	Kelowna	V1Y 4R5	250-860-2866
East Penn Batteries	26988 56th Ave	Langley	V4W 1N9	604-455-0355
Edmonds Batteries	20131 Industrial Ave	Langley	V3A 4K6	604-534-7995

Interstate Batteries	20148 102nd Ave	Langley	V1M 4B4	604-888-3446
Canadian Energy	4848 275 Street	Langley City	V4W 0A3	604-283-9804
ABC Recycling	750-C Jackson Road	Nanaimo	V9X 1J2	250-722-0303
Canadian Energy	541 1st Avenue	Prince George	V2L 2Y2	250-564-1551
Interstate Batteries	3584 Massey Drive	Prince George	V2N 2M4	250-765-3477
ABC Recycling	10338 Willow Cale Forest Service Rd	Prince George	V2N 5T3	250-963-6766
RME Energy Ltd	21331 Gordon Way	Richmond	V6W 1J9	604-241-4470
ABC Metals	19355 54 Avenue	Surrey	V3S 8E5	604-514-9411
Edmonds Batteries	6468 King George Boulevard	Surrey	V3W 4Z3	604-596-8774
EnerSys Canada	13303 78th Avenue	Surrey	V3W 4N1	604-591-3683
Phil's Batteries and More Inc.	12332 Pattullo Place	Surrey	V3V 8C3	604-588-7445
Radius Recycling	12195 Musqueam Drive	Surrey	V3V 3T2	604-580-0251
ABC Metals	2550 Queensway Drive	Terrace	V8G 3X8	250-635-1228
KC Recycling	9350 Waneta Hwy	Trail	V1R 4W6	833-267-7365
DC Power Group	5000 Silver Star Road	Vernon	V1B 3K3	250-542-4275
Radius Recycling	307 David Street	Victoria	V8T 5C1	250-381-5865