

ESG REPORT

ENVIRONMENT, SOCIAL AND GOVERNANCE

FOSTERING A CULTURE OF GOOD GOVERNANCE
AND ENVIRONMENTAL STEWARDSHIP

2022



TABLE OF CONTENTS

OVERVIEW	4
Guide to Symbols Used in this Report	4
GOVERNANCE	5
Compliance with the New Brunswick Research and Productivity Act	5
Compliance with the Accountability and Continuous Improvement Act	5
Mandate Letter	5
General Good Governance Practices	5
5-year Strategic Plan	5
RPC's Corporate Values	6
Additional Good Governance Elements	7
Compliance	8
Complying with Laws and Policies; maintaining a solid safety record	8
SOCIAL AND COMMUNITY ETHICS	10
Focusing on Our People	10
Fostering a Culture of Belonging	11
Improving Organizational Awareness of Indigenous Issues	11
Employee Engagement Committee	12
Code of Conduct/Ethical Behavior	13
Monitoring and Responding to Employee Engagement Surveys	13
Employment Equity and Work/Life Balance	14
Benefits & Employee Wellbeing	14
Generous Benefits	14
Wellness Rebate	14
Employee Engagement Committee Wellness Programs	14
Support Systems	14
Training and Development	15
Strengthening Our Communities	15
Community and Government Partnerships	15
Immigration Strategy Forum	15
Academic Institutions	15
Atlantic Canada Opportunities Agency (ACOA)	15
PETL Workplace Connections	16
NSERC Create	16
National Research Council - Industrial Research Assistance Program (NRC-IRAP)	16
New Brunswick Innovation Foundation (NBIF)	16
Regional Development Corporation (RDC)	16
Mitacs	16
The Cannabis Education and Awareness Fund	17
Environmental Trust Fund	17
Case Study: Cyanobacteria	17
Philanthropy	18
Supporting Volunteerism Where We Live	18
United Way Charity Drive	18
Greener Village Holiday Collection	18
War in Ukraine Relief Effort	18
Jobs Unlimited Contributions through Refundables Program	18
Recycling Bonus!	18

Education: Promoting science through experiential learning	19
School-age Children and Teens	19
Co-op Student: Cooperative Education 120	19
University Students	20
Education Bonus!	20
Outreach: Connecting to the Community We Serve	20
RPC Compares Illicit to Legal Cannabis Contents	20
Volunteering at Science-Based Events	20
Communication: Building knowledge of our services across the province and country	21
Social Media Presence	21
Twitter Bonus!	21
Working Groups and Speaking Engagements	21

OPERATIONS

22

Environmental Service Provision	22
Water Testing	22
Fish Health	22
Environmental Technologies and Future Factory Assessments	23
Emergency/Urgent Response Capability	23
Case Studies	23
Covid Rapid Test Production	23
HEPA Report	23
Tire Fire Emergency	23
Sustainable Operations	24
Recycling & Safe Waste Disposal	24
Recycling Snapshot	24
Laboratory and General Plastic Recycling	24
Plastic Refundables Program	24
Battery Recycling	25
Paper Recycling	25
Cardboard Recycling	25
Printer Cartridge Recycling	25
Electronics Recycling	25
Safe Waste Disposal	25
Green Initiatives	26
Paper Reduction Efforts	26
Greener Chemistry projects	26
Microbiology	26
Organic Analytical Services (OAS)	27
Operational Efficiency Improvements	27
Community Garden	28

SUMMARY

29

ESG Objectives	29
ESG Stakeholder Touchpoints	30

REFERENCES

33

Report Contributors	33
---------------------	----

OVERVIEW

The New Brunswick Research and Productivity Council (RPC) is in its 60th year of operation. It was created when the *New Brunswick Research and Productivity Act* ascended on the final day of the legislative session, April 13, 1962. Since that time, RPC has proudly served as the science and technology arm of the government of New Brunswick (GNB) and industry. One of RPC's objectives, as stated by the New Brunswick Research and Productivity Act, is to "promote innovation through the use of science and technology for the purposes of improving quality of life and building economic viability and competitiveness in the Province." We strive to do just that.

RPC's foundation is our people, and our primary driver is helping the communities we serve. We support thousands of clients across New Brunswick and Canada by providing an impressive and diverse suite of scientific and engineering services.

RPC's stakeholders include our clients, employees, suppliers, Worksafe NB, GNB, municipalities, academia, the cities in which we operate (Fredericton and Moncton), our Quality Registrars, Board of Directors, and the broader communities we serve. As a predominantly self-sustaining Crown Corporation, RPC bases our operations on the following Environment, Social, and Governance (ESG) pillars.



Further, RPC recognizes our impact on our stakeholders, and aims to continuously improve operations and to create initiatives to achieve the best possible outcomes.

GUIDE TO SYMBOLS USED IN THIS REPORT

This report uses symbols to indicate how sections tie into an international framework. These symbols are the same as those used by the Canadian government to indicate some of the goals of the United Nations 2030 Agenda for Sustainable Development. In September 2015, Canada and all 192 United Nations Member States adopted this agenda at the UN General Assembly. This initiative is a global call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030.¹ Like other organizations, we have adopted these symbols to indicate where our ESG initiatives fall within the framework of these national and international goals.



GOVERNANCE

In order to maintain our ability to meet commitments to all stakeholders, and to meet the corporate values documented in our Strategic Plan, namely Safety, Quality, Service, Integrity, Corporate Social Responsibility, and being Customer Focused and Results Driven, RPC strives to operate in a good governance framework, which begins with the Government of New Brunswick Act that created it, and flows through all facets of organizational operations.

COMPLIANCE WITH THE NEW BRUNSWICK RESEARCH AND PRODUCTIVITY ACT



As previously mentioned, RPC was created when the *New Brunswick Research and Productivity Act* ascended on the final day of the legislative session, April 13, 1962. The current version of the act is the *Research and Productivity Council Act, SNB 2017, c 3*². RPC adheres to the provisions of this Act to ensure that we deliver on our mandate while complying with the governance structure that is applicable to RPC as a Government of New Brunswick Crown Corporation.

COMPLIANCE WITH THE ACCOUNTABILITY AND CONTINUOUS IMPROVEMENT ACT



The *Accountability and Continuous Improvement Act, SNB 2013, c 27* states that “A Crown entity shall each year prepare an annual plan” that takes into account the government’s strategic direction as it pertains to the Crown entity’s mandate.³ The plan must identify objective performance measures, and must be submitted to the responsible Minister by a date determined by Executive Council. Once approved, the annual plan must be published.

RPC complies with the *Accountability and Continuous Improvement Act* by creating annual plans that meet listed criteria and getting them approved and published. RPC’s 2022-2023 Annual Plan can be found on our website’s governance page: <https://www.rpc.ca/english/governance.html>.

MANDATE LETTER



Per the *Accountability and Continuous Improvement Act*, RPC receives an annual mandate letter from our Minister, which drives our strategic and operational direction and sets performance expectations. Two of the Priority Areas listed in RPC’s 2022-2023 Mandate Letter are Operational Excellence and Sustainable Growth. A non-exhaustive list of what RPC is doing to address these Priority Areas is described in this report in later sections.

5-YEAR STRATEGIC PLAN



In addition to the Annual Plan mandated by the *Accountability and Continuous Improvement Act*, RPC also publishes a 5-year Strategic Plan. The 5-year planning process provides an opportunity for RPC to establish strategic goals that are aligned with stakeholder expectations. It serves as a framework to influence annual plans, establish priorities and guide key management decisions. The process is intended to result in a unified organization striving for a vision that is aligned with the expectations of the governing body.⁴

RPC'S CORPORATE VALUES

**SAFETY**

RPC is committed to providing a safe work environment.

QUALITY

RPC is committed to quality in the work we perform.

SERVICE

RPC is client-focused and committed to assist clients to the best of our ability. In providing our services, we will balance our not-for-profit mandate with the goal of self-sufficiency. We are results driven.

INTEGRITY

RPC is committed to treating employees, clients and suppliers with respect, honesty and fairness. We are accountable for our actions.

CORPORATE SOCIAL RESPONSIBILITY (CSR)

RPC is committed to responsibly managing the social, environmental and economic impacts of our operations. Our goal is to have a positive impact on the community and provide a workplace of which employees can be proud.

CUSTOMER FOCUSED AND RESULTS DRIVEN

Essential to RPC's continued success is our customer focus and our drive for results. We will continue to have an impact and to deliver results.

OUR VALUES



ADDITIONAL GOOD GOVERNANCE ELEMENTS



In addition to the 5-year and annual planning processes undertaken by RPC's Executive Management and Board of Directors, RPC has taken steps to ensure good governance throughout the organization. Examples include:

CORPORATE GOVERNANCE ELEMENT	CURRENT DOCUMENTATION/PROCESSES
Leadership and Responsibilities	<ul style="list-style-type: none"> The Statement of Management Commitment is a documented commitment from the executive to strive for quality and customer focus in all ongoing activities at RPC Authorities and responsibilities for every employee are documented in Organizational Charts and Job Descriptions which are reviewed annually RPC's Joint Health and Safety Committee (JHSC) and Biosafety Advisory Committee (BAC) are governed via terms of reference
Quality Policy and Objectives	<ul style="list-style-type: none"> The Quality Policy and Objectives, which tie into RPC's strategic direction, are reviewed at least annually by Senior Management to ensure currency
Quality Program and Effectiveness	<ul style="list-style-type: none"> RPC has achieved the necessary steps to maintain a number of nationally or internationally-recognized quality certifications and accreditations, which are granted by external bodies. These are audited periodically by the relevant accrediting body to ensure ongoing compliance. These include: <ul style="list-style-type: none"> ISO 9001:2015 ISO 17025:2017 ISO 17020: 2012 CSA N299.3-16 Effectiveness is also tracked via an internal audit program, and by metrics produced for review during Management Review and Leadership meetings.
Risk Management	<ul style="list-style-type: none"> RPC manages risk on an ongoing basis, to ensure potential issues are mitigated before they occur. Risk management strategies include, among others: <ul style="list-style-type: none"> Business Continuity Plan IT backup and disaster recovery practices Organization-wide emergency drills Annual Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis Safety and biosafety management programs Maintenance of RPC's Communicable Disease Prevention Plan Biosecurity Risk Assessment Local Risk Assessment Overarching Risk Assessment Pathogen Risk Assessment Documented control practices for externally provided processes, products and services Documented training and proficiency program Program for addressing deviations and other issues via Corrective Actions/ Preventative Actions (CAPAs)
Environmental Awareness	<ul style="list-style-type: none"> RPC is aware of our responsibility to the environment and takes steps to mitigate any environmental impacts. For example: <ul style="list-style-type: none"> Green Initiative: Paper Recycling Program Green Initiative: Toner Cartridge Recycling Program Green Initiative: Battery Recycling Program Green Initiative: Laboratory Plastics Recycling Program Green Initiative: Non-Petroleum-Based Elevator Operating Fluid Use Hazardous Waste Disposal/Collection Program Wellfield application/report and signed Wellfield Exemption 3900-F1-E0276
Integrity	<ul style="list-style-type: none"> Integrity is one of RPC's Core Values, and RPC takes steps to ensure that it acts with this value in mind. Examples include: <ul style="list-style-type: none"> Impartiality Statement signed annually by senior management HR Policies addressing Harassment, Conflict of Interest, Confidentiality, Gifts from Clients, Responsible Use of Social Media

COMPLIANCE

COMPLYING WITH LAWS AND POLICIES; MAINTAINING A SOLID SAFETY RECORD



Part of any good governance structure is compliance. Safety, quality, and compliance are essential to the way we work. RPC has an impressive track-record of keeping our employees, the environment, and the public safe, while also maintaining our licenses, certifications, and accreditations. The following is a sampling of RPC's compliance.

STATUTE/ REGULATION/ STANDARD	PROVINCIAL/ NATIONAL/ INTERNATIONAL	LICENSE/ CERTIFICATION/ ACCREDITATION	MEANING/APPLICABILITY
New Brunswick's Wellfield Protected Area Designation Order	Provincial	Wellfield application/ report and signed Wellfield Exemption 3900-F1-E0276	RPC complies with the program requirements to allow it to operate on a wellfield
Compliance with WorkSafe NB's Joint Health and Safety Committee (JHSC) regulations	Provincial	WorkSafeNB Employer Account, Employer Number 332996 – in good standing	RPC complies with WorkSafe NB's requirements, including those for the operation of our Joint Health and Safety Committee
Newfoundland and Labrador Construction Safety Association	Atlantic Region	Letter of Good Standing for participation in the Certificate of Recognition® (COR®) Program	RPC meets the requirements for performing medical gas inspections in Newfoundland and Labrador
Human Pathogen and Toxins Act (HPTA)/ Regulations (HPTR) and the Canadian Biosafety Manual	National	Pathogen and Toxin License #: L-R2-88916-22-XS-00 (applies to Fredericton and Moncton)	RPC meets the national requirements to allow it to safely work with pathogens and toxins
Health of Animals Act (HAA) and Health of Animals Regulations (HAR); Plant Protection Act (PPA) and Plant Protection Regulations (PPR)	National	Laboratory Compliance for Level 2 In Vitro Facilities: Fredericton CL-2022-0229-4 Moncton CL-2022-0038-4	RPC meets the national requirements to allow it to safely work with animal and plant pathogens and toxins
Canadian Standards Association Standard N299	National	Written confirmation from NB Power (PLGS) field surveillance audit that "RPC have an effectively implemented CSA N299.3-16 QA Program"	RPC has a quality assurance program that meets requirements for the supply of items and services for nuclear power plants
Compliance with Health Canada Cannabis Act and Cannabis Regulations	National	Health Canada analytical testing license for cannabis LIC-NIW8RFLE8C-2020 Health Canada research license for cannabis LIC-A0LGMSRN05-2021	Allows RPC to conduct research and analysis of cannabis and cannabis products
Compliance with the Controlled Drugs and Substances Act and its Regulations	National	Health Canada license for controlled substances License # 6-1340	Allows RPC to conduct research and analysis of psilocybin

STATUTE/ REGULATION/ STANDARD	PROVINCIAL/ NATIONAL/ INTERNATIONAL	LICENSE/ CERTIFICATION/ ACCREDITATION	MEANING/APPLICABILITY
Compliance with ISO 9001	International	Certificate of Registration (SAI Global) CERT-0117170	RPC has a Quality Management System (QMS) that supports consistent delivery of products and services to meet customer and regulatory requirements, and that aims to enhance customer satisfaction and to continuously improve.
Compliance with ISO 17025	International	Accredited Testing Laboratory accreditation certificate (SCC), File number 15213	For our scope of accreditation (listed at www.scc.ca), RPC has a QMS that complies with internationally-recognized general requirements for the competence, impartiality and consistent operation of laboratories.
Compliance with ISO 17020	International	Accredited Inspection Body accreditation certificate (SCC), File number 06015	For our scope of accreditation (listed at www.scc.ca – medical gas inspections), RPC has a QMS that complies with internationally-recognized requirements for the competence of bodies performing inspections and for the impartiality and consistency of their inspection activities.



SOCIAL AND COMMUNITY ETHICS

FOCUSING ON PEOPLE

FOSTERING A CULTURE OF BELONGING

The Research and Productivity Council is committed to fostering and sustaining a workplace that respects and protects the human rights of all employees. Every employee has the right to work in a respectful workplace that is free from harassment, and which values diversity and inclusion, courteous conduct, equality, positive communication and professional working relationships. This approach is reflected in our working policies and in our social activities.

All employees share a responsibility for creating and maintaining a respectful workplace. Employees at every level of the organization are accountable to be civil and respectful in their interactions with one another, as well as with customers, clients, and the public.

In 2022, mandatory respectful workplace training was administered to all employees to accompany RPC's Respectful Workplace Policy, and the training was recorded in training records to ensure any gaps were addressed.

RPC is also compliant with labour standards on an ongoing basis and exceeds the minimum requirements in many areas.

We also have an in-house Employee Engagement Committee (EEC) whose stated purpose is to "Plan and execute social events to help RPC build and promote a culture of belonging, wellness, engagement and fun". More on the EEC's activities can be found [herein](#).

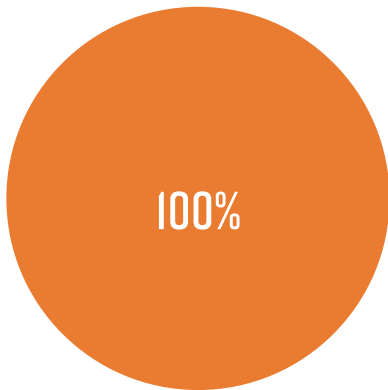


IMPROVING ORGANIZATIONAL AWARENESS OF CHALLENGES FACED BY INDIGENOUS PEOPLES

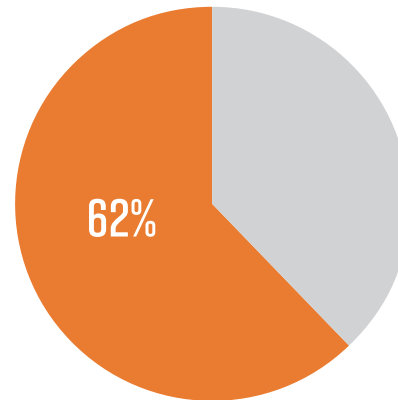


In 2022, RPC's Employee Engagement Committee (EEC), offered employees suggestions for gaining awareness of challenges faced by our Indigenous peoples. The organization offered a documentary-based Lunch and Learn. In the documentary, entitled *Inendi*, directed by Sarain Fox, the impacts of residential schools on Indigenous communities were described in first person by three generations from a single family.

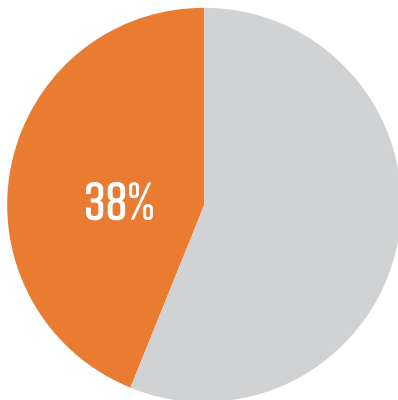
Percentage of attendees who found the event gave them new information/insight into Indigenous issues



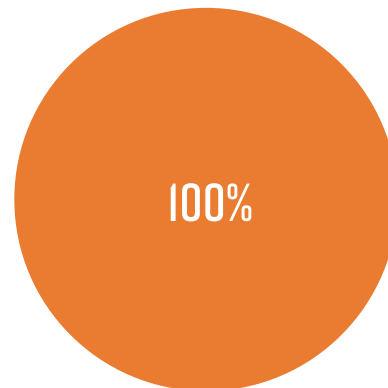
Percentage of attendees who made suggestions for future events to improve awareness of Indigenous issues



Percentage of attendees who made suggestions for future events about other cultures



Percentage of attendees who would attend similar events again



EXPANDING OUR KNOWLEDGE

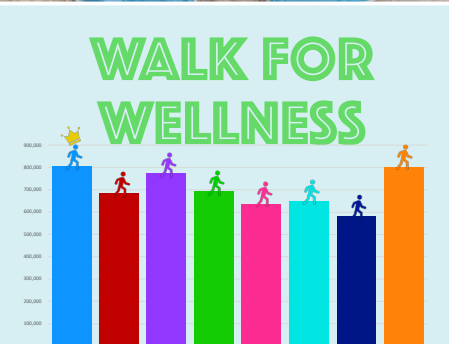
The EEC purchased new books to add to the RPC library at the Fredericton location for truth and reconciliation awareness. The target audience for the new titles includes families and children as well as adults.



EMPLOYEE ENGAGEMENT COMMITTEE (EEC)

RPC's EEC facilitates numerous activities throughout the year to support its mission to help RPC build and promote a culture of belonging, wellness, engagement and fun. Examples from 2022 include:

- ✓ Bell Let's Talk Day Social Event
- ✓ Pink Shirt Day – Be Kind Event to raise awareness for anti-bullying
- ✓ St. Patrick's Day "Find Billy Idol" Event
- ✓ Red Cross Fundraiser - Raffle for Ukraine
- ✓ RPC Summer Party
- ✓ Eggie Breakfast BBQ
- ✓ Strawberry Shortcake Break
- ✓ Halloween Social
- ✓ Holiday Lunch
- ✓ Walk for Wellness



CODE OF CONDUCT/ETHICAL BEHAVIOR

RPC's code of conduct also contributes to fostering a safe, ethical, and inclusive workplace. This code is contained in a group of policies in RPC's Administrative Policy Manual and work together to address the need for respect and ethics in the workplace. These include policies which address harassment, workplace violence, conflict of interest and integrity, confidentiality, appropriate use of computers, gifts from clients, responsible use of social media, and being fit for work.



MONITORING AND RESPONDING TO EMPLOYEE ENGAGEMENT SURVEYS

RPC works consistently on maintaining an engaged and motivated workforce. According to Gallup, “Engaged employees unlock an organization’s potential across all initiatives.”⁵ Moreover, research from Great Place to Work® shows that when employees say their work has “special meaning,” rather than being “just a job,” they are 56% more likely to experience innovation opportunities.”⁶

RPC's Human Resources department issues an Employee Engagement Survey every six months, with the aims of providing an anonymous method of feedback for employees, to monitor engagement amongst employees, and to build awareness of any issues, so that management can take swift action where appropriate.

A good average engagement score for an organization is 50% or higher⁷, but RPC strives to do better. 2022 employee engagement survey results show a Top Box Engagement Score of 62%, with the organization seeing even higher scores in the past. RPC will be launching a 2-year initiative to try to raise our scores again going forward.

EMPLOYMENT EQUITY AND WORK/LIFE BALANCE

RPC is focused on our employees maintaining a healthy work life balance. We have policies and leave options in place to help employees achieve a balance appropriate for them. Options include a hybrid work policy, pro-rated salary leave and care of dependent leave.

Our hybrid work policy allows employees the flexibility to work at home and in the office. We also recognize that at times employees may require additional vacation time, in which case they can request pro-rated salary leave.

RPC also acknowledges that our employees' vacation time should be used for vacation. As a result, we offer care of dependent leave so that if an employee has a family member who needs tending to, there are options for providing care that do not necessitate the use vacation time.

RPC believes in a fair and equitable workplace. As part of this mindset, RPC is currently participating in a pay equity review in collaboration with the Pay Equity Department within GNB. Initial feedback has been positive, with a few modifications possible upon completion of the review. In addition, RPC continually assesses its workforce demographic with a view to understanding its current state. RPC is exploring various options for assuring employment postings reach various communities so that candidates from said communities have an opportunity to apply and be considered for employment at RPC.

BENEFITS & EMPLOYEE WELLBEING

GENEROUS BENEFITS

RPC manages our policies and programs to support employee well-being and a sound work-life balance. RPC offers a generous benefits package for fulltime employees that includes health, dental, drug and vision care. Our benefits plan also includes life, AD&D, and LTD insurances. RPC also offers maternity leave top up to support families financially, as well as parental leave and care of dependent leave.

In addition, offers a 36.25 hour work week, overtime pay for hourly employees, and remote meeting capability.

WELLNESS REBATE

RPC offers a Wellness Rebate for employees to use towards a health and/or wellness activity every year. This rebate can be used for gym memberships, sports leagues, cooking classes, etc. Employees are eligible to receive up to a \$150.00 rebate each year. RPC also works in partnership with our benefits broker to offer significant savings for gym memberships.

EMPLOYEE ENGAGEMENT COMMITTEE WELLNESS PROGRAMS

Each year, RPC's Employee Engagement Committee (EEC) runs in-house wellness programs. In 2022, programs included the annual Walk for Wellness program and outdoor yoga. Also in 2002, the EEC installed a basketball net and purchased basketballs for staff use.

SUPPORT SYSTEMS

RPC is partnered with Homewood Health to give employees counselling support when they need it. Our Employee and Family Assistance Program (EFAP) helps to take practical and effective steps to improve employee well-being. Homewood Health offers a supportive, confidential, and caring environment and will provide employees with counselling for any challenge, including but not limited to depression, marital challenges, grief/bereavement, stress, and addictions. RPC also offers trauma care via Homewood Health.

RPC's EFAP also offers Life Smart Coaching for a variety of life balance and health issues, as well as offering expert support to better manage career issues. Some examples of this coaching program are nutrition, childcare and parenting, elder and family care, career planning, and pre-retirement planning.

TRAINING AND DEVELOPMENT

In July 2022, RPC launched a new online based training management program as part of transition to a new Laboratory Information Management System (LIMS). This new module of the LIMS replaces a previously paper-based process, and supports increased training planning and management at the supervisory level. This training module focuses on training management through the use of customized visual workflows. It allows RPC to maintain and record user training records electronically and to maintain compliance with the requirements of ISO 9001:2015 and ISO 17025:2017.

RPC incorporates a variety of training and learning options including in-person courses facilitated internally or externally, online training videos, self-led training, mentored training and online assessments. RPC employs scientists, engineers, technologists, and support specialists who are consistently learning and training to stay up to date with the newest developments across science and technology sectors.

COMMUNITY AND GOVERNMENT PARTNERSHIPS

RPC participates in government and academic programs to build relationships with the community, and to strengthen and diversify our employee base and project work. This helps to ensure that we are giving back to the community, and are able to meet the latest testing needs.



IMMIGRATION STRATEGY FORUM

RPC is participating in GNB's Mosaik initiative. Mosaik is an intentionally co-created newcomer hiring program for anyone who was not born in New Brunswick and is seeking meaningful employment opportunities within government. GNB Mosaik has created the frameworks to offer meaningful employment, on-the-job language support, and connections that foster a sense of belonging in and outside of the workplace. By putting newcomers and refugees at the center of this work, GNB Mosaik strives to embrace diversity and inclusion to better serve everyone who calls New Brunswick home.



ACADEMIC INSTITUTIONS

Throughout the year, RPC often posts positions through University and College job boards, such as UNB, Dalhousie, Université de Moncton, and NBCC, looking for new graduates. We also use these job boards for hiring summer students. This avenue is a great opportunity for RPC to recruit talent after they've graduated and also gives the students some real-life experience outside the classroom. RPC has posted multiple students and graduates (at all levels) working with our research team as well as co-op students both from community college and high school.



ATLANTIC CANADA OPPORTUNITIES AGENCY (ACOA)

ACOA is a long-time collaborator with RPC and has provided funding support for a number of important initiatives over the last several years, including: development of an RPC master plan for renovation/expansion to support projected growth, renewal of RPC's critical IT infrastructure components including our laboratory information management system (LIMS), funding of a technology assessment and productivity improvement program for Atlantic-Canadian small and medium-sized enterprises (SMEs) and procurement of critical instrumentation and equipment that support the delivery of our specialized services (most of which would not exist in Atlantic Canada otherwise).


 The logo for Working NB Travail NB, featuring the text "WORKING NB" in blue and "TRAVAIL NB" in red, with a stylized green leaf icon to the right.

PETL WORKING NB

RPC partners with the Department of Post-Secondary Education, Training and Labour (PETL) to match their clients with openings at RPC. The Working NB program repurposes existing wage subsidy programs, and their budgets, to invest in services that are focused on outcomes.⁸ While the initial hire under this program is partially funded, RPC, in return, has a very good track record of hiring these employees permanently once the initial work term is completed.


 The logo for NSERC CRSNG, featuring a red square with a white maple leaf icon and the text "NSERC CRSNG" in white.

NSERC CREATE

Our Chief Science Officer (CSO) participates in The Collaborative Research and Training Experience (CREATE) program with Dalhousie University. The CREATE program supports the training and mentoring of teams of highly qualified students and post-doctoral fellows from Canada and abroad through the development of innovative training programs that encourage collaborative and integrative approaches, and address significant scientific challenges associated with Canada's research priorities and facilitate the transition of new researchers from trainees to productive employees in the Canadian workforce.


 The logo for Canada NRC-CRRC, featuring the word "Canada" in black with a small Canadian flag, and "NRC-CRRC" in white on a blue rectangular background.

NATIONAL RESEARCH COUNCIL - INDUSTRIAL RESEARCH ASSISTANCE PROGRAM (NRC-IRAP)

Since the 1960s, funding from NRC has allowed RPC to support Atlantic Canadian SMEs through the provision of short-term scientific, technical and advisory assistance in support of applied research and development related innovation projects. As an NRC Contribution Agreement recipient, RPC responds to NRC-IRAP Industrial Technology Advisor (ITA) inquiries by providing SMEs access to qualified scientific and technical professionals. Typically, RPC works with 20-30 SMEs each year with the support of this program.


 The logo for NBIF, featuring the letters "NBIF" in a bold, black, sans-serif font, with a small blue triangle to the left of the "N".

NEW BRUNSWICK INNOVATION FOUNDATION (NBIF)

NBIF provides many investment and funding support opportunities to New Brunswick SME's. The stream where RPC has been most involved is in providing services funded via NBIF's Innovation Voucher Fund (IVF). The IVF was designed to provide small and medium-sized businesses in New Brunswick with the scientific expertise and facilities they need to accelerate their growth through research and development (R&D). This includes new products or operational efficiencies. Each year RPC completes several of the voucher projects for clients with exceptional results.


 The logo for New Brunswick Canada, featuring a stylized red and white sailboat icon above the text "New Brunswick" in green and "CANADA" in black.

REGIONAL DEVELOPMENT CORPORATION (RDC)

The Regional Development Corporation is the provincial Crown Corporation that plans, coordinates and implements regional and economic development initiatives for the Province of New Brunswick. RPC works with RDC via several initiatives to expand lab capabilities and help improve our laboratory spaces.


 The logo for Mitacs, featuring the word "Mitacs" in a stylized, white, sans-serif font on a blue background.

MITACS

RPC accesses the MITACS program to obtain personnel and funding for various scientific projects. Once again, a full time permanent employment offer is often made to the incumbent at the completion of the funded project. Mitacs builds a world-class, diverse community of innovators through their collaborative model, attracting and deploying top talent to industry, and matching need with expertise to create ambitious solutions to real-world challenges.⁹



THE CANNABIS EDUCATION AND AWARENESS FUND

The Cannabis Education and Awareness Fund is a special purpose trust dedicated to the provision of education and awareness programs related to cannabis, including programs concerning the prevention of cannabis abuse in vulnerable populations, the informed, responsible use of cannabis, and strategies for the reduction of the adverse health effects of cannabis. The fund also facilitates the development and implementation of policies and programs relating to the responsible consumption of cannabis, reduction of its adverse health effects and the promotion of corporate social responsibility in the distribution and sale of cannabis and research projects on cannabis and its consumption.



ENVIRONMENTAL TRUST FUND

The Environmental Trust Fund (ETF) program provides support for action-oriented projects with tangible, measurable results, aimed at protecting, preserving, and enhancing the province's natural environment. RPC received two ETF awards for the 2022/23 fiscal year for the establishment of cyanotoxin and cyanobacteria analytical services in New Brunswick. The goals of these projects are consistent with the Environmental Trust Fund (ETF) priority areas and as such will contribute to important environmental objectives for Atlantic Canada.

Through the Environmental Trust Fund Program, Dr. Taylor Sheahan has joined the RPC Bioscience Team as a Research Assistant. She is currently working on establishing analytical services for Cyanobacteria and Cyanotoxins at RPC via RPC's ETF projects. While not all blue-green algae blooms are harmful to human health, some can produce toxins. Taylor is developing analytical protocols that differentiate toxigenic species from non-toxigenic species by quantitative polymerase chain reaction (qPCR) and detection of total microcystins and nodularins in drinking water and ambient water using Enzyme-Linked Immunosorbent Assay (ELISA).



Dr. Taylor Sheahan

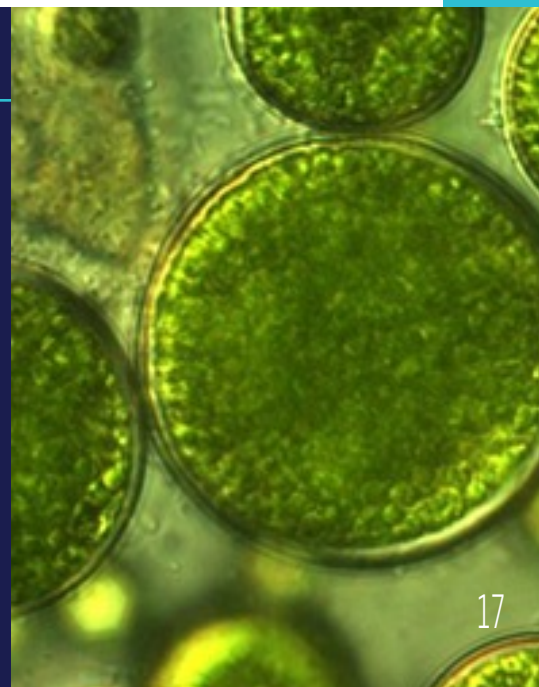
"The ETF program no doubt supports RPC's mission 'to deliver science and technology solutions for the prosperity of New Brunswick' thus increasing provincial crown laboratory capacity to detect and respond to existing and emerging threats to residents and their pets associated with toxic algal blooms."

- Dr. Attiq Rehman, Director of Applied and Experimental Biosciences, RPC

CASE STUDY: CYANOBACTERIA



RPC's current ETF projects focus on the development of cyanobacteria and cyanotoxin testing services for the province of New Brunswick. Toxic cyanobacterial blooms and their rising global occurrence pose a serious threat to human health, domestic animals, and livestock. The impact of climate change on increased prevalence of harmful algal blooms in aquatic environments locally cause these threats in the Saint John River (Fredericton to Woodstock) as well as in lakes across the province of New Brunswick. The public health advisories in our province and cyanobacteria related poisonings of pet dogs have indicated that cyanobacteria and algal blooms are a major environmental and public health concern that needs continuous attention. Establishing these services at RPC will make RPC a cyanobacterial analytical hub for the entire province. This service will help in conducting surveys of NB waterways for harmful algal blooms in a timely fashion, assisting with the development of effective risk management strategies for the province. This, in turn, will reduce risk to human and animal life by protecting, preserving, and enhancing NB's natural environment.



PHILANTHROPY

SUPPORTING VOLUNTEERISM WHERE WE LIVE

RPC encourages one day per year per employee of paid volunteer time for our employees to support the charity of their choice. If every employee uses this time in a given year, it amounts to a charitable donation of approximately \$35,700.00 per year, to registered charities in our communities.

United Way Charity Drive

For several years, RPC has embraced the opportunity to fundraise for GNB's chosen charitable organization, the United Way. In 2022, RPC met our goal of \$6,000.00. Apart from participating in the fundraising events conducted throughout GNB, such as BINGO and 50/50 draws, RPC adds our own incentive draws for prizes, and our own events, to further support the cause. The funds raised by RPC's laboratory locations go to two of the United Ways in New Brunswick, which work through a variety of community initiatives to "transform poverty to possibility, creating strong and healthy communities, and help kids be all that they can be."¹⁰ One challenge the United Way works to alleviate is homelessness. Homelessness is an increasing concern in communities throughout New Brunswick, and people trapped in the cycle of homelessness tend to have shorter life expectancies, are less likely to graduate high school, and are more likely to be victims of violence and exploitation, especially with rising inflation rates. The United Way works with local organizations to help people dealing with homelessness with the belief that everyone deserves to have their basic needs met.

Homeless Shelter Holiday Collection

During the 2022 holiday season, RPC collected donations for local homeless shelters, including Grace House, by participating in the Reverse Advent Calendar program. The Fredericton Homeless Shelters Inc. provide safe, stable, temporary refuge for individuals experiencing homelessness and foster a caring and respectful environment that promotes dignity and self-determination.¹¹ This year, RPC collected 227 items for the homeless shelters.

War in Ukraine Relief Effort

When the War in Ukraine began, RPC employees contributed \$600 to the relief effort, via the Ukrainian Red Cross Fund. RPC is also demonstrating our support for Ukraine via a ribbon-tying campaign in front of our headquarters in Fredericton.

Jobs Unlimited Contributions through Refundables Program

Throughout the year, RPC contributes to Jobs Unlimited through our bottle refundables program. In 2022, RPC collected approximately 6,361 500ml plastic bottles, with a refundable value of \$1,590.00, which went towards supporting the Jobs Unlimited mandate of providing meaningful employment to individuals who face significant employment barriers due to their disabilities.¹²

RECYCLING BONUS!

The RPC Refundables program amounts to approximately 230 pounds of recycled PET plastic per year. That alone saves the equivalent of 664 Kwh of energy¹³, and reduces the number of plastics in landfills and the oceans. 664 Kwh is roughly equivalent to running 345 loads of laundry!¹⁴



EDUCATION: PROMOTING SCIENCE THROUGH EXPERIENTIAL LEARNING

RPC believes that every child and adult should have access to a quality education, and that we are uniquely positioned, as the science and technology arm of the provincial government, to assist with growing scientific knowledge at all education levels. Moreover, attracting and retaining talent is essential to RPC's success and we recognize it is important to encourage students by supporting their studies and making them aware of the careers that are available here in New Brunswick.

School-Age Children and Teens

RPC supports school-aged science learning through organizing, funding, and developing materials for experiments to enhance the science program for middle-school students.

In 2021, RPC scientists visited grade 7 students at Harold Peterson Middle School, donated glassware to their laboratory, and guided them through some colourful acid-base chemistry experiments, with all materials prepared and supplied by RPC. RPC recognizes that engaging with young students helps to build appreciation and motivation for careers in science and engineering, and is crucial to developing the next generation of talent.

"We believe that outreach activities, such as this one, can help guide students towards rewarding careers in science, engineering, and technology."

- Andrien Rackov, Lab Supervisor, Research Science



RPC also runs a program for employees' children on Take Your Kid to Work Day, which emphasizes safety in laboratories and offers a curriculum of on-site demonstrations and applied learning experiments.

CO-OP STUDENT: COOPERATIVE EDUCATION I20

In 2022, RPC hosted a high school student who participated in a co-op program offered by the Government of New Brunswick. He worked with the RPC Facilities team for four months to determine whether he would like to pursue a career in carpentry. The program combines classroom learning with on-the-job experience to enable students to make informed career decisions. Other impacts of the program include:

- Provides assistance in making career decisions
- Develops confidence and a positive attitude
- Develops interpersonal and communication skills
- Facilitates the transition from school to work
- Provides references and contacts for future employers
- Increases opportunity for acceptance into post-secondary institutions and apprenticeship programs
- Permits training with equipment not readily available in schools
- Allows for valuable training by experts in the field¹⁵

Co-op student, Lucas Lanteigne, painting a "KEEP AREA CLEAR" zone around the hydraulic pump that operates RPC's freight elevator.



"Working at RPC has helped me to focus on my career path after I graduate."

- Lucas Lanteigne

University Students

RPC supervises CHEM 4000 students each year from September-April. The University of New Brunswick's CHEM 4000 program is a project-based course through which senior students in the Chemistry program may attain honours status. The students complete a thesis and seminar presentation via a project requiring at least 9 hours of work per week.

RPC also hosts an Applied Science Day for university students each year. This program allows 4th year UNB Chemistry students to attend talks given by employees and to work on some hands-on problems using real-world data.

RPC also sometimes donates equipment to universities in the province where timing and needs align. In 2021, RPC donated an entire Inductively coupled plasma mass spectrometry (ICP-MS) system, along with its computer and required software, to the Department of Chemistry at UNB. The value of this donation is approximately \$250,000.00 and the system will be used as an experiential teaching tool for UNB Chemistry students.



RPC staff host Applied Science Day

EDUCATION BONUS!

Some RPC semployees are adjunct professors, honorary research associates, and lecturers at UNB, strengthening our ties to higher education in New Brunswick.



OUTREACH: CONNECTING TO THE COMMUNITY WE SERVE

RPC is driven to connect to the community and its other stakeholders in meaningful ways. Examples of RPC community outreach include:

RPC Compares Illicit to Legal Cannabis Contents

In the most comprehensive study of its kind in North America, RPC conducted a self-funded Illicit Cannabis study in 2022 to contribute scientific data to the public, the Department of Health, Health Canada, and Cannabis NB. The study showed the risks associated with illicit cannabis compared to legal cannabis and garnered international attention.¹⁶ We continue to work on the next phase of comparison experiments.

Volunteering at Science-Based Events

RPC employees volunteer as judges for the Canada-Wide Science Fair, also contributing after-hours time to be able to attend required educational sessions. We also volunteer as judges for the UNB graduate student conference, evaluating graduate research projects.



COMMUNICATION:

BUILDING KNOWLEDGE OF OUR SERVICES ACROSS THE PROVINCE AND COUNTRY

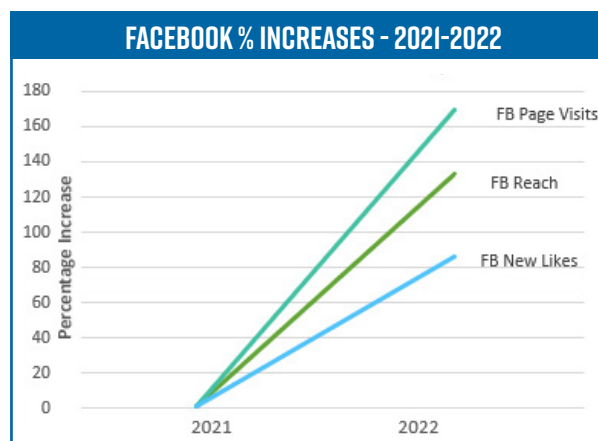


Part of RPC's objectives are to "provide services, including analyses, tests, inspections, investigations and evaluations, [and] to design, develop and test equipment, products or processes."¹⁷ To ensure that we meet these objectives, RPC works daily to build provincial and national knowledge about the services we can provide to the community and our broader stakeholder groups.

Social Media Presence

We are active on Facebook, LinkedIn, and Twitter. RPC publishes approximately three posts per week to social media, explaining our services and successes. We also release between six to ten press releases per year. The press releases are made available on the RPC website and typically publicized by a social media post to reach the widest possible audience.

Over the past year, RPC has also made a concerted, co-ordinated effort to increase our social media presence. Over that time, our Facebook reach has increased over 130%. Facebook "reach" is the number of people who saw content from a page or about a page. Facebook page visits have also increased by 169%, and new "likes" have increased by 86%.



TWITTER BONUS!

RPC's Twitter post about our Illicit vs. Legal Cannabis paper gained over 20k impressions!

Working Groups and Speaking Engagements

Part of our relationship-building strategy is to participate in scientific/engineering working groups, publications, and committees that are related to the work we do. RPC has representatives on the CSA Z180 Breathing Air Standard Committee and the C-45 Quality Association Lab Committee, and Review Editors on the Frontiers in Microbiology journal, as well as a Guest Editor for The Plant Journal and Frontiers in Microbiomes.

The Supervisor of RPC's Fish Health Group, Rebecca Liston, participated in the 2022 Women in Science Initiative, organized by the Atlantic Canada Fish Farmers Association (ACFAA). Our Fish Health Supervisor also serves on the ACFAA Board of Directors and will participate in the Women in Salmon Farming Symposium in October of 2023 in Saint Andrews, New Brunswick.

RPC employees also deliver various speaking engagements throughout the year to the industries we serve. For example, by the end of 2022 our employees delivered talks to the Department of Justice and Public Safety on our wildlife services, to the Exploration, Mining and Petroleum New Brunswick Conference about our Minerals and Industrial Services work, and to the NB Lung Annual Respiratory Health Symposium related to RPC's work with Radon. Also this past year, senior RPC scientists presented a lunch and learn session on Legionella to the members of the Environmental Services Association Maritimes (ESAM).

We also participate in engagement sessions with other government entities and/or the public, that are related to the industries we serve. In September of 2022, for example, our Director of Biosciences and RPC's Chief Science Officer (CSO) participated in a virtual engagement session regarding the second phase of the regulatory framework for cooling towers hosted by the Government of New Brunswick.



OPERATIONS

RPC was created with the mandate to “promote, stimulate and expedite continuing improvement in productive efficiency and expansion in the various sectors of the New Brunswick economy.”¹⁸ RPC defines mandated services as services offered that impact the health of New Brunswick’s citizens and the environment, while supporting growth of the New Brunswick economy.

We deliver mandated laboratory and testing services for the following sectors and GNB priority areas:



These services support the health of our communities, waterways, land, forests, and animals, as well as advancing technologies that support industrial growth and development. All of these services contribute to New Brunswick and the Atlantic Provinces’ economies.

ENVIRONMENTAL SERVICE PROVISION

RPC’s technical and testing resources serve the environmental needs of our stakeholders, including municipal and provincial governments as well as various industry sectors and individuals. With accredited laboratories and experienced employees, we conduct thousands of environmental analyses and complete dozens of projects annually for local, regional and international clients.

WATER TESTING

One aspect of the environmental testing services provided by RPC is water testing. In 2022 we conducted over 64,500 water analyses between our Organic Analytical Services, Inorganic Analytical Services and Microbiology laboratories. Roughly 35,500 of these were tests for drinking water, supporting and strengthening potable water sanitation, and the remaining 29,000 water tests were to support other types of environmental initiatives, such as environmental clean-up and/or monitoring, or industrial processes using surface water, groundwater, or seawater.

FISH HEALTH

Another aspect of RPC’s environmental services is its contributions to the aquaculture industry, and thereby to ocean health. RPC has played a key role in fish disease identification (Infectious Salmon Anemia virus), development of fish vaccines and sealice treatments, and the development of probiotic bacteria for use in hatchery culture of marine finfish and shellfish as a solution to alleviate a critical bottleneck in the production cycle while providing an alternative to more costly and less sustainable alternatives.

ENVIRONMENTAL TECHNOLOGIES AND FUTURE FACTORY ASSESSMENTS

RPC also contributes to the upgrading and retrofitting of industry solutions to make them more efficient and sustainable. Future Factory Assessments result in recommendations to increase throughput while decreasing operating costs such as labour, material, and energy. RPC's Mineral and Industrial Services team also has expertise in:

- environmental chemistry
- remediation piloting and process optimization
- greener mineral extraction technology development
- alternate fuels, energy recovery technology
- energy production efficiency technology development
- waste treatment technologies
- recycling & waste recovery technologies
- waste treatment technology development including thermal, physical, chemical and biological treatment.

EMERGENCY/URGENT RESPONSE CAPABILITY

As part of our overall service provision, RPC maintains the ability to deliver rush services, after-hours services, and rapid response in emergency situations which have the potential to impact the environment and/or health.

CASE STUDIES

Some case studies of RPC providing urgently-needed services in recent years include:

Covid Rapid Test Production

At the height of the Covid-19 pandemic, between the end of September and mid-October of 2021, RPC mobilized to prepare 9675 Covid rapid test kits (containing 5 tests per kit). The work included laboratory work as well as administrative employees working on kit assembly. This project was to support the distribution of 5-test kits in New Brunswick schools, when the raw materials were only available in packs of 25 with a single bottle of solution.



HEPA Report

In 2022, RPC scientists conducted a review of scientific literature about HEPA filtrations and provided a scientific opinion on whether HEPA systems should be installed in classrooms in NB to the Department of Education and Early Childhood Development.

TIRE FIRE EMERGENCY

In December of 2019, a tire fire broke out at a tire recycling facility in Minto, New Brunswick.¹⁹ As a result of the fire, "Do not drink the water" advisories were issued to the Minto Industrial Park, a nursing home and community health center in close proximity to the fire site. RPC analysed samples, many on a rush basis, from the fire site, surrounding houses, businesses, and schools testing for petroleum hydrocarbons, volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons. Between December 24th and January 20th, 61 related samples were processed on a rush basis, with turn around times varying between same day and 5 days maximum, depending on the nature of the test requested.



SUSTAINABLE OPERATIONS

RECYCLING & SAFE WASTE DISPOSAL

RPC looks for ways to recycle and protect the environment throughout our operations. RPC operates 10 recycling initiatives, which we may consolidate where possible over the next 24 months. Nine of these initiatives can currently be measured, and RPC is launching a project in the coming year to measure the tenth recycling initiative, which is the recycling of steel from our engineering operations.

RECYCLING SNAPSHOT

RECYCLING INITIATIVE	APPROXIMATE AMOUNT RECYCLED IN 2022	IMPACTS/RESOURCES SAVED
Laboratory plastics	253 lbs	<ul style="list-style-type: none"> 1731 kilowatt-hours (Kwh) of energy
General plastic	347 lbs	
Plastic refundables program	230 lbs	<ul style="list-style-type: none"> 664 Kwh of energy
AA or AAA batteries	142 lbs	<ul style="list-style-type: none"> Non-renewable resources such as lead, cadmium, nickel, steel, zinc, mercury, cobalt, lithium, silver and manganese
5 lb batteries	200 lbs	
Cardboard	7,535 lbs	<ul style="list-style-type: none"> Reduces sulfur dioxide pollution by up to 50% compared to using wood²⁰
Paper	12,032 lbs	<ul style="list-style-type: none"> 12 tons of wood 42,000 gallons of water reduces greenhouse gas emissions by 6 metric tons of carbon equivalent²¹
Printer cartridge	252 annually	<ul style="list-style-type: none"> 24 kg of aluminum, 202 pounds of plastic, and 2,520 litres of oil
Electronics	840 lbs	<ul style="list-style-type: none"> Resources including plastic, glass, gold, silver and copper

Laboratory and General Plastic Recycling

Recycling plastics is the most sustainable option to reduce fossil fuel consumption. A ton of recycled plastic saves 7,200 kilowatt-hours (Kwh) of electricity or about enough energy to run a household for seven months.²² RPC's annual plastic recycling from these two initiatives amounts to approximately 1700 Kwh.

Plastic Refundables Program

Throughout the year, RPC contributes to Jobs Unlimited through our bottle refundables program. In 2022, RPC collected approximately 6,361 500 ml plastic bottles, with a refundable value of \$1,590.00, which went towards supporting the Jobs Unlimited mandate of providing meaningful employment to individuals who face significant employment barriers due to their disabilities.²³ It also saves the equivalent of 664 Kwh of energy.



Battery Recycling

Batteries contain a number of heavy metals and toxic chemicals. Keeping them out of landfills limits human and environmental exposure to these chemicals and toxins.

Batteries also contain non-renewable resources such as lead, cadmium, nickel, steel, zinc, mercury, cobalt, lithium, silver and manganese, which can be recovered during the recycling process, reducing the need for mining of these raw materials.²⁴

Paper Recycling

RPC recycles approximately 12,000 lbs of paper annually, which amounts to saving 12 tons of wood per year via this initiative. It also saves approximately 42,000 gallons of water, and reduces greenhouse gas emissions by 6 metric tons of carbon equivalent.²⁵

Cardboard Recycling

Recycling cardboard saves trees, as well as the energy that would go into making cardboard from raw materials. When cardboard is recycled instead of using wood, sulfur dioxide pollution caused by the pulping process is reduced by up to 50%.²⁶

Printer Cartridge Recycling

RPC recycles 21 cartridges per month on average, or 252 annually. Recycling printer cartridges reduces air and water pollution/emissions associated with landfilling, incineration or the manufacturing of new cartridges.²⁷ It also reduces the need for the raw materials used to produce new cartridges. For instance, it can take 3.5 litres of oil to make one new toner cartridge.²⁸ For every 100,000 used cartridges recycled, 9599 kilograms of aluminum, 40 tons of plastic, and 1,000,000 liters of oil are saved.²⁹ This means that by recycling our printer cartridges, RPC is saving approximately 24kg of aluminum, 202 pounds of plastic, and 2,520 litres of oil annually.

Electronics Recycling

Resources inside our electronics, including plastic, glass, gold, silver and copper can be reused continuously without losing their properties. By recycling electronics, resources are recovered, reducing our overall carbon footprint and lessening our dependence on mining for new resources.³⁰

SAFE WASTE DISPOSAL

RPC takes safety of our employees and the general public very seriously. Our employees are trained according to Canada's Transportation of Dangerous Goods (TDG) Program, and in the safe disposal of hazardous waste. Since January of 2022, RPC has safely disposed of 3800 litres of hazardous liquids, and 90 pounds of other biohazardous waste. RPC disposes of approximately 11,000 litres per year of hazardous liquids from our operations, all with hazardous waste management and disposal companies, keeping them out of the watershed and the broader environment. 11,000 litres is approximately 70 barrels of waste.



GREEN INITIATIVES

PAPER REDUCTION EFFORTS

Paper reduction initiatives have started to make a measurable difference in RPC's paper use. Starting in 2020, and working gradually by business unit, our Finance team has reduced the 21 boxes of paper it had to archive per year to 10 boxes in Fiscal Year 2022. Finance expects to further reduce this to 1-2 boxes per year in 2023.

Our Inorganic Analytical Services team has reduced its paper use from 35 boxes in 2020 to just 5 in 2022. Other groups are starting to work on their own paper reduction efforts as well. For example, RPC's Cannabis team has recently moved to paperless reporting.

RPC's Microbiology Laboratory has reduced its paper usage by 65% in 2022 by signing documents electronically and by changing its operational workflows.

Since 2020, RPC has reduced our annual paper usage by more than 720 pounds, or equivalent to almost 18 45-foot, 8-inch diameter trees³¹.



GREENER CHEMISTRY PROJECTS

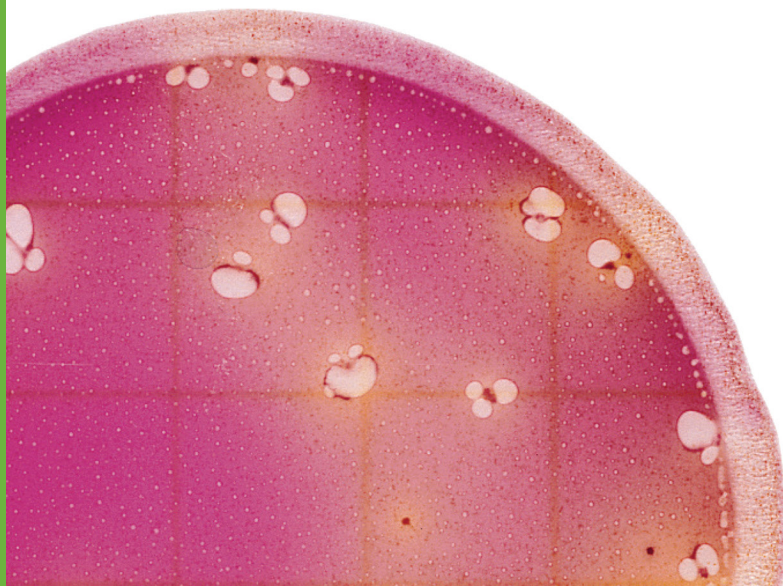
Over the past 18 months, RPC has undertaken some major "Greener Chemistry" assessments, which have led and will continue to lead to significant reductions in the amounts of solvent and plastic products used in our labs.

Microbiology

RPC's Microbiology Lab is in transition from culture plate methods to petrifilm and molecular-based methods. Petrifilms use 75% less energy and 80% less water. They produce 75% less greenhouse gas emissions and 66% less waste compared to culture methods.³²

In October of 2022 the RPC Microbiology Laboratory switched methods to Petrifilm for Yeast/Mold in cannabis products. Moving to Petrifilm has reduced the amount of media prepared, which in turn reduces the number of plastic products used like petri dishes/tubes and bags as well as the packaging of the media. It is projected that for one year for this method, the lab will reduce the amount of petri dishes used by 17 - 25%.

A total of seven analyses were also moved by microbiology from culture methods to molecular methods (qPCR/3M-MDS). These changes reduced media prepared by between 2 and 12 media per test. All transitioned molecular methods also save on petri dishes and tubes/bags used.



Organic Analytical Services (OAS)

OAS has teamed with RPC's Research Group to assess where they can conduct greener chemistry in some of their most-requested analyses. Together, they have put a plan in place to transition to greener methods for the following tests, significantly reducing solvent use.

ANALYSIS	REDUCTION IN AVERAGE MONTHLY SOLVENT USE (L)	REDUCTION IN AVERAGE YEARLY SOLVENT USE (L)
Cannabinoids	32	389
Terpenes	8	94

Organic solvents react in the atmosphere with sunlight, producing an air pollutant known as 'ground-level ozone', as well as other persistent organic pollutants. Reducing solvent use can reduce ground-level ozone's effects on human, animal and plant health, while also reducing land, air, and water pollution.³³

Additionally, the reduction in solvent used for cannabinoids analysis will also be accompanied by a complete elimination of the use of chloroform, with approximately 58 L of this hazardous chlorinated solvent eliminated per year.

OPERATIONAL EFFICIENCY IMPROVEMENTS

To operate as efficiently as possible, to increase capacity, and to take best advantage of paper-reduction efforts, RPC has also been working on a number of other efficiency improvements since 2020.

These efficiency improvements have led to greater employee well-being and reduced stress. End-of-day work is performed with less time pressure, and employees report feeling more organized and further ahead in their work.

Examples include:

DEPARTMENT	PROCESS	YEAR IMPLEMENTED	AVERAGE PERSON-HOURS SAVED PER MONTH
Inorganic Analytical Services	Electronic Excel-based data correction for raw instrument data to correct calibration drift	2022	70
Inorganic Analytical Services	Transition to electronic data entry streams across most processes	2022	91
Compressed Air and Gases	Transition to Labware, RPC's new LIMS	2022	53
Microbiology	Transition to qPCR from culture methods	2022	50



COMMUNITY GARDEN

Since 2021, RPC has been operating an employee community garden that is the shared responsibility of employee members who have signed up for the program. From June into October, the 136-square foot garden produces a wide array of vegetables for the participants' households, and occasionally enough produce to distribute to the wider organization. This year, RPC employees benefitted from the distribution of kale and tomatoes, which were bumper crops.



Community gardens have proven benefits of reducing food miles, providing new opportunities for exercise and healthier lifestyles, absorbing rainwater/preventing runoff, relieving stress and increasing wellness.

In 2022, space in the RPC community garden was reserved for pollinators. Pollinator-attracting plants were introduced into the space, improving the chance of crop pollination and doing a little something to help pollinators and especially bees, which are struggling right now.

The risk is not limited to the European honey bee, which is a non-native, commercial species. Canada's native bees are also at risk. *Bombus* bumble bees are both a native bee which has evolved with our native plants and are important to maintaining local ecosystems. The rusty-patched bumble bee is an example of this genus native to eastern Canada, and these have not been seen in Canada since 2009.³⁴








In 2023, RPC plans to expand our pollinator project to include a milkweed bed on our property, with the aims of providing habitat for monarch butterfly caterpillars and supporting the monarch butterfly's lifecycle. The Migratory Monarch is a species in decline, and has been placed on the Committee on the Status of Endangered Wildlife in Canada's endangered species list. Monarch butterfly migration is the only natural process recognized as "threatened" by the International Union for the Conservation of Nature (IUCN), and the Migratory Monarch is now on the IUCN's Red List of Threatened Species™ as Endangered.³⁵









ESG OBJECTIVES

RPC sets project-based goals to support ESG projects, benefitting our community, our customers, employees, and other stakeholders.

		GETTING STARTED	MAKING PROGRESS	GOAL ACHIEVED	GOAL DATE
Focus on Sustainable Operations/Green Initiatives 	Complete 3 additional paper reduction projects over the next 2 years	<div><div></div></div>	<div><div></div></div>		2024
	Complete the implementation of greener chemistry for Cannabinoids and Terpenes	<div><div></div></div>	<div><div></div></div>		2023
	Complete project to document RPC's steel recycling	<div><div></div></div>	<div><div></div></div>		2023
	Better document RPC's use of non-petroleum based elevator operating fluid and its benefits	<div><div></div></div>	<div><div></div></div>		2023
	Expand RPC's pollinator project to include a milkweed bed	<div><div></div></div>	<div><div></div></div>		2023
Focus on Equity, Diversity, Inclusion 	Hold annual events to improve organizational awareness of Indigenous issues (at least one per year 2022-2024)	<div><div></div></div>	<div><div></div></div>		2024
	Complete 2-year initiative to further improve Employee Engagement scores	<div><div></div></div>	<div><div></div></div>		2024
	Build on options to ensure employment postings reach diverse communities	<div><div></div></div>	<div><div></div></div>		2023
Focus on Education 	Support school-aged science learning through organizing, funding, and developing materials for experiments to enhance the science program for middle-school students yearly for the next 3 years (minimum)	<div><div></div></div>	<div><div></div></div>		2025
	Support science honours work via UNB's Chemistry 4000 program for an additional 3 years (minimum)	<div><div></div></div>	<div><div></div></div>		2025
Focus on Philanthropy 	Increase employee uptake of the volunteer program by 50% in the next year	<div><div></div></div>	<div><div></div></div>		2023
	Maintain Jobs Unlimited Refundables Program to a similar level as in 2022	<div><div></div></div>	<div><div></div></div>		2023
	Continue contributions to the United Way in at least the same amount as the current year, or the amount set for RPC by GNB	<div><div></div></div>	<div><div></div></div>		2023
Focus on Community 	Make significant progress on the Environmental Trust Fund cyanobacteria project	<div><div></div></div>	<div><div></div></div>		2023
	Complete next phase of data gathering for ongoing Illicit vs. Legal Cannabis Study	<div><div></div></div>	<div><div></div></div>		2023
	Roll out cyanobacteria and cyanotoxin testing services	<div><div></div></div>	<div><div></div></div>		2023





ESG STAKEHOLDER TOUCHPOINTS

		RELEVANT STAKEHOLDERS					
		EMPLOYEES	CUSTOMERS	SUPPLIERS	GOVERNMENT	ACADEMIC INSTITUTIONS	WIDER COMMUNITY
OUR COMMUNITY							
Maintaining Emergency Response Capability 	Emergency Response Plan	•	•		•	•	•
	Business Continuity Plan	•	•	•	•	•	•
	IT backup and disaster recovery practices	•	•	•	•	•	
	Maintenance of agility for rapid response	•	•	•	•	•	•
	Relationship with the Fire Department	•	•		•		•
	Organization-wide emergency drills	•					•
	Emergency after-hours support		•		•		
Philanthropy 	Supporting volunteerism	•					•
	United Way corporate charity drive	•					•
	Greener Village holiday collection	•					•
	Jobs Unlimited contributions through refundables program	•					•
Community Partnerships 	Immigration Strategy Forum	•			•		•
	Academic Institutions	•	•			•	•
	PETL Workplace Connections	•	•		•		•
	MITACS	•	•		•		•
	Environmental Trust Fund (cyanobacteria)	•	•		•		•
	ACOA		•		•		•
	NSERC Create	•				•	
	NBIF		•				•
	RDC	•	•				•
	IRAP		•				•
	Cannabis Education and Awareness Fund		•			•	
OUR PEOPLE							
Equity, Diversity, Inclusion; fostering a culture of belonging 	Improve organizational awareness of Indigenous issues; explore opportunities to facilitate calls to action	•	•	•	•	•	•
	Monitoring and responding to employee engagement surveys	•	•	•			
	Employee events via the EEC	•					
Benefits & employee wellbeing 	Safe work environment	•	•	•	•		
	Healthcare/Vision/Dental	•					
	Volunteering opportunities	•					•
	Work/Life Balance	•					
	Training and development	•	•				
	Operational efficiency improvements include stress-reduction in the workplace	•					
Code of Conduct 	Policies governing against harassment, accepting bribes, etc.	•	•	•	•	•	•

ESG STAKEHOLDER TOUCHPOINTS





CONTINUED

RELEVANT STAKEHOLDERS

		EMPLOYEES	CUSTOMERS	SUPPLIERS	GOVERNMENT	ACADEMIC INSTITUTIONS	WIDER COMMUNITY
THE ENVIRONMENT							
Sustainable Operations 	Proper hazardous waste disposal	•	•	•	•		•
	Pipette tips recycling program						•
	Battery recycling program						•
	Plastic refundables program						•
	General plastic recycling						•
	Cardboard recycling						•
	Paper recycling						•
Green Initiatives/ Efficiency Initiatives 	Paper reduction efforts	•					•
	Greener Chemistry initiatives	•					•
	Operational efficiency improvements	•					
	Community Garden	•					•
EDUCATION AND OUTREACH							
Education: Promoting science through experiential learning 	Host of Applied Science Day for University Students	•				•	
	Supporting science honours work via UNB's Chemistry 4000 program	•				•	
	Supporting school-aged science learning through organizing, funding, and developing materials for experiments to enhance the science program for middle-school students	•				•	•
	Providing school-aged science experiences through Take Your Kid To Work Day curriculum, including safety orientation and on-site demonstrations	•				•	•
	RPC employees are adjunct professors, honorary research associates, and lecturers at UNB, strengthening ties to higher education in New Brunswick	•				•	
	Equipment donations					•	•
Outreach: Connecting to the community we serve 	RPC carried out a self-funded Illicit Cannabis study to contribute data to the public, the Department of Health, Health Canada, and Cannabis NB. The organization continues to work on the next phase of data gathering. The study showed the risks associated with illicit cannabis as compared with legal cannabis.	•	•		•		•
	RPC employees volunteer as judges for the Canada-Wide Science Fair, also contributing after-hours time to be able to attend required educational sessions	•				•	•
	RPC employees volunteer as judges for the UNB graduate student conference, evaluating graduate research projects	•				•	

ESG STAKEHOLDER TOUCHPOINTS

CONTINUED

		RELEVANT STAKEHOLDERS					
		EMPLOYEES	CUSTOMERS	SUPPLIERS	GOVERNMENT	ACADEMIC INSTITUTIONS	WIDER COMMUNITY
Communication: Building knowledge of our services across the province and country 	RPC continues to strive to build provincial and national knowledge about what we can provide to the community by communicating about RPC's mission and work	•	•	•	•		•
	RPC participates in scientific/engineering working groups and committees. E.g.: CSA Z180 Breathing Air Standard Committee, C-45 Quality Association Lab Committee.	•	•				•
	RPC employees deliver various speaking engagements throughout the year to the industries we serve.	•	•				•
GOVERNANCE							
Safety 	Joint Health and Safety Committee (JHSC) and Biosafety Advisory Committee (BAC)	•	•		•		•
	Safety program	•	•				•
	Biosafety program	•	•				•
	Safety manual and procedures	•					•
	Biosafety manual and procedures	•					•
	Routine safety inspections	•					•
	Routine biosafety inspections	•					•
Compliance 	RPC Act	•	•	•	•		•
	Accountability and Continuous Improvement Act	•	•	•	•		•
	Human Pathogen and Toxins Act/Regulations and the Canadian Biosafety Manual	•	•	•	•		•
	Quality Standards ISO 9001/17025/17020 & CSA N299	•	•	•	•		•
	Wellfield application/report and signed Wellfield Exemption 3900-F1-E0276	•	•		•		•
Integrity 	Code of Conduct	•	•	•	•	•	•
	Risk Management	•	•	•	•		•

REFERENCES

- ¹ <https://www.canada.ca/en/employment-social-development/programs/agenda-2030.html> Retrieved 2022-12-01
- ² Research and Productivity Council Act, SNB 2017, c 3, <<https://canlii.ca/t/539kh>> Retrieved on 2022-11-30
- ³ Accountability and Continuous Improvement Act, SNB 2013, c 27, <<https://canlii.ca/t/533gm>> Retrieved on 2022-11-30
- ⁴ <https://www.rpc.ca/english/gov/RPCStrategicPlan2020-2025.pdf> Retrieved on 2022-11-30
- ⁵ <https://www.gallup.com/workplace/392219/beware-junk-employee-engagement-metrics-esg-reporting.aspx> Retrieved 2022-11-14.
- ⁶ <https://www.greatplacetowork.com/resources/blog/workplace-esg-how-purpose-in-the-workplace-drives-performance#:~:text=The%20im-pacts%20of%20workplace%20ESG%20on%20employee%20experience&text=Research%20from%20Great%20Place%20to,likely%20to%20ex-perience%20innovation%20opportunities> Retrieved 2022-11-14.
- ⁷ <https://www.apollotechnical.com/employee-engagement-statistics/> Retrieved 2022-11-14.
- ⁸ https://www2.gnb.ca/content/gnb/en/departments/post-secondary_education_training_and_labour/news/news_release.2019.11.0616.html
- ⁹ <https://www.mitacs.ca/en/about> Retrieved 2022-11-14.
- ¹⁰ <https://www.unitedwaycentral.com/>, <https://gmsenbunitedway.ca>, <https://unitedwaysaintjohn.com/> Retrieved 2022-11-14
- ¹¹ <https://www.theshelters.ca/our-purpose> Retrieved 2022-12-14.
- ¹² <https://jobsunlimitednb.ca> Retrieved 2022-11-14
- ¹³ <https://lbre.stanford.edu/pssistanford-recycling/frequently-asked-questions/frequently-asked-questions-benefits-recycling> Retrieved 2022-12-02
- ¹⁴ <https://coastalsolar.com/what-can-50-kwh-per-day-do-for-your-home/> Retrieved 2022-11-14
- ¹⁵ New Brunswick Cooperative Education 120 Student Handbook, P.2
- ¹⁶ <https://rpc.ca/english/press/ComparisonofIllicitandLegalCannabisSamples.pdf> Retrieved on 2022-11-30
- ¹⁷ Research and Productivity Council Act, SNB 2017, c 3, <<https://canlii.ca/t/539kh>> Retrieved on 2022-11-30
- ¹⁸ Research and Productivity Council Act, SNB 2017, c 3, <<https://canlii.ca/t/539kh>> Retrieved on 2022-11-30
- ¹⁹ <https://www.cbc.ca/news/canada/new-brunswick/fire-tracc-tire-recycling-minto-1.5405753> Retrieved 2022-11-28.
- ²⁰ https://citizensustainable.com/recycling-cardboard/#1_Conserve_Forests Retrieved 2022-12-05.
- ²¹ <https://archive.epa.gov/wastes/conserves/materials/paper/web/html/index-2.html> Retrieved 2022-12-02
- ²² <https://blog.impactplastics.co/blog/sustainability-in-the-workplace-5-major-benefits-of-plastic-recycling> Retrieved 2022-12-02.
- ²³ <https://jobsunlimitednb.ca> Retrieved 2022-11-14
- ²⁴ <https://www.ecobatt.net/5-benefits-of-recycling-batteries/> Retrieved 2022-12-02.
- ²⁵ <https://archive.epa.gov/wastes/conserves/materials/paper/web/html/index-2.html> Retrieved 2022-12-02
- ²⁶ https://citizensustainable.com/recycling-cardboard/#1_Conserve_Forests Retrieved 2022-12-05.
- ²⁷ <http://www.agreenerrefill.com/> Retrieved 2022-11-28
- ²⁸ <https://www.staples.co.uk/knowledge-centre/how-to-tips/how-do-i-recycle-my-ink-and-toner-cartridges/> Retrieved 2022-11-28
- ²⁹ <https://www.dme.us.com/2018/09/18/toner-recycling-why-it-matters/> Retrieved 2022-11-28
- ³⁰ <https://www.recyclemyelectronics.ca/learning/media/toronto-student-learns-that-when-it-comes-to-recycling-electronics-whats-inside-counts/> Retrieved 2022-12-05
- ³¹ <https://8billiontrees.com/trees/how-many-pieces-of-paper-in-a-tree/#ref-1> Retrieved 2022-11-14
- ³² <https://sciencecentre.3mcanada.ca/articles/agar-or-3m-petriefilm-plates-how-do-they-compare-when-it-comes-to-sustainability> Retrieved 2022-12-05
- ³³ <https://www.canada.ca/en/environment-climate-change/services/air-pollution/pollutants/common-contaminants/ground-level-ozone.html> Retrieved 2022-12-05
- ³⁴ <https://wildlifepreservation.ca/blog/the-unexpected-links-between-declining-bumble-bee-species/> Retrieved 2022-11-14.
- ³⁵ <https://www.cosewic.ca/index.php/en-ca/news-and-events/press-release-december-2016.html> Retrieved 2022-11-14.
<https://www.iucn.org/press-release/202207/migratory-monarch-butterfly-now-endangered-iucn-red-list> Retrieved 2022-11-14.

REPORT CONTRIBUTORS

Sara Cockburn, James Handrahan, Andrien Rackov, Peter Crowhurst, Bruce Philips, Attiq Rehman, Diane Botelho, Steve Holmes, Shelley Janes, Amy Brown, Jennifer Doucette, Cathy Hay, Tracy Lean, Lise Morin, Jacy Ellingwood, Emma Matchett, Gillian Travis, Corrie Maston