

# Accelerating Sustainability

2020 Sustainability Report



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# We are striving to make Tourmaline one of the most sustainable energy enterprises in North America.

**At Tourmaline, our mission is to provide the world with the cleanest and lowest-emission natural gas. In this report, we are pleased to share that we are well on our way.**

Though 2020 was a difficult year, Tourmaline built upon our positive Environmental, Social and Governance (ESG) momentum. Our diesel displacement program and water recycling initiative each won an Energy Excellence Award and, in November 2020, our sustainability efforts were recognized with an A in the MSCI Global ESG Ratings. Most recently, we increased our S&P Global ESG score by 20 points to place 33rd out of 152 oil and gas companies, as at November 2020.

Our progress speaks to the dedication of our employees, both in the field and the offices, who have demonstrated strong leadership and agility throughout the COVID-19 health crisis. When the pandemic began, we reacted quickly to protect the health and safety of our employees, contractors and communities. We were able to send our employees home without incident or disruption to our operations and, importantly, we did not let the pandemic affect our commitment to pursuing our aggressive sustainability goals.

At Tourmaline, we set ambitious goals because we are dedicated to becoming the lowest-cost, lowest-emission natural gas company in North America. I am happy to report we are delivering on our commitments. We continue to focus on monitoring and reporting our sustainability metrics, and ensuring robust policies and governance systems are in place to guide and oversee our progress.

To achieve our targets, we continue to invest heavily in innovative new technologies. From our award-winning diesel displacement and water recycling initiatives to our partnership with the Natural Gas Innovation Fund and our facility serving as Canada's first methane emissions testing centre, we are passionate about minimizing our impact on the environment as a company and an industry. In pursuing our aggressive but realistic ESG targets, we are not only bolstering a vital component of our value proposition but also continually improving our environmental performance.

We are also ensuring all stakeholders benefit from Tourmaline's success. With them in mind, I am excited to announce the following initiatives:

- Tourmaline is now in its second 5-year plan for emission reductions, with hard, achievable targets.
- A robust strategy to register and develop carbon offsets.
- The establishment of an annual contribution towards scholarships for Indigenous students by the end of 2021.

With our existing, large reserve base, decades-long drilling inventory, relentless focus on execution and cost management, strong balance sheet and industry-leading environmental performance, we are excited about Tourmaline's ability to provide clean energy to the rest of Canada and the world.

**Michael Rose**

PRESIDENT, CHIEF EXECUTIVE OFFICER & CHAIRMAN

MAKING THE GRADE

Our sustainability initiatives earned an



**in the MSCI ESG ratings assessment**

**31% reduction**

in CO<sub>2</sub> emissions intensity with a 289% increase in production since 2013

**Energy Excellence Awards Champion**

for our diesel displacement initiative

# Company Overview

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# Tourmaline is Canada's largest natural gas producer.

## WHO WE ARE

Tourmaline is Canada's largest natural gas producer. From our operations in British Columbia and Alberta, we're proud to send our natural gas across Canada, into the U.S. and to other markets, warming and powering the lives of many. Our goal is to have the largest, lowest development cost and lowest-emission natural gas supply in North America. To get there, we've set clear and aggressive targets to further reduce our emissions, recycle water and minimize our surface impact.

We focus on providing value for our shareholders in many ways. We are committed to responsibly developing natural gas, fostering a strong and passionate work force, continuously improving our environmental performance, and creating strong relationships in the communities we call home.

Tourmaline is headquartered in Calgary, Alberta and our common shares are listed on the Toronto Stock Exchange (TSX) under the symbol TOU.



2020 exit production  
**>400,000 boepd**

**5th largest**  
Canadian processing midstream operator

**75 years**  
of drilling inventory

# What makes us unique?

## Our Assets

Tourmaline is proudly Canadian. We are based in Calgary, Alberta, and have significant positions in three of Western Canada's major resource plays: the Alberta Deep Basin, the northeast British Columbia Montney complex and the Peace River High Charlie Lake complex.



## Our People

Tourmaline values and respects its people. We believe each employee plays an important role in the success of our company and we strive to empower them in order to achieve their best potential. Our work force has low voluntary turnover and the highest productivity per boe of production, reserves and cash flow amongst our peer group.



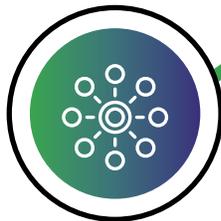
## Our Future

We believe natural gas is one of the low-carbon solutions the world seeks now and in the future. At Tourmaline, we are proud to do our part and help Canada and the world transition to a lower-carbon, lower-emission global environment.



## Our Strategy

Tourmaline's business strategy is to maximize shareholder value by increasing reserves, production and cash flows through the exploitation and development of a continually growing asset base. We believe in the power of technology and innovation, as they drive efficiency in operations, strong financial results and improved environmental performance.



## Our Stakeholders

We are committed to building strong and lasting relationships with all of our stakeholders. Through active dialogue and meaningful discussions, we prioritize stakeholder feedback and strive to ensure everyone benefits from our success.



# ESG Highlights

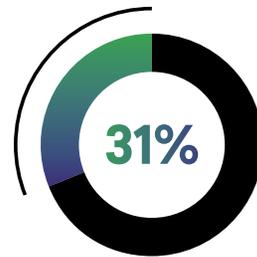
**\$1,956 per employee**  
invested in education and training

**37%** gender diversity

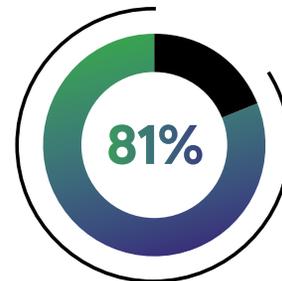


**95% percentage**  
of completion water recycled  
from gas operations

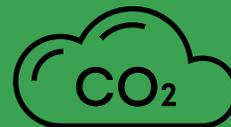
**~50% less  
land disturbed**  
with multi-well pads compared  
to single wells



REDUCTION IN CO<sub>2</sub> EMISSIONS  
INTENSITY (FROM 2013 TO 2019)



OF PRODUCTION IS  
NATURAL GAS



**~212,000 tonnes**  
CO<sub>2</sub>e annual methane emissions  
reduction due to replacement of  
high-bleed devices

**>\$2 billion**  
in value distributed to our  
stakeholders\* in 2019

\* Stakeholders include suppliers, providers of capital,  
government, employees, landowners, and communities

**100% elimination**  
of virtually all potable fresh-water usage  
in NEBC well stimulation operations

**>\$8 million**  
donated to over 650 charities  
since 2012

**Won 2 Energy  
Excellence Awards**  
for sustainability initiatives



**>6,300 vendors**

# Strategy & Approach

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# We are committed to transparent, annual reporting.

## OUR APPROACH TO SUSTAINABILITY REPORTING AND MATERIALITY ASSESSMENT

### Framework

As a responsible producer and leader in sustainability, we are committed to transparent, annual reporting on our Environmental, Social and Governance (ESG) performance. Within this report, we are pleased to share comprehensive information on the progress we made in 2019.

We've developed our report using the Global Reporting Initiative (GRI) standards as a baseline for the sustainability factors significant to Tourmaline stakeholders. For the first time, we've also included a section outlining how we're meeting recommendations from the Task Force on Climate-Related Financial Disclosures (TCFD), and we've

incorporated discussion points and metrics outlined by the Sustainability Accounting Standards Board (SASB). The specific sustainable industry classification system is SASB EM-EP - Oil & Gas Exploration & Production.

### Scope

This report details our ESG performance for the period between January 1 to December 31, 2019 and includes reference to certain actions Tourmaline undertook in 2020 and 2021.

In the fall of 2021, we plan to issue a supplemental report with data and key highlights from 2020.

We've developed our sustainability report using the **GRI, TCFD, and SASB standards.**

TOURMALINE INCLUDED THE FOLLOWING ESG FACTORS IN OUR ASSESSMENT:

- Abandonment/Reclamation
- Air Quality
- Biodiversity/Land
- Business Ethics
- Community & Local Involvement
- Community & Local Investment
- Cybersecurity
- Data Privacy
- Diversity & Inclusion
- Employee Development
- GHG Emissions
- Health & Safety
- Human Rights
- Indigenous Communities
- Political Advocacy
- Responsible Supply Chain
- Seismicity (Hydraulic Fracturing)
- Spills
- Waste
- Water

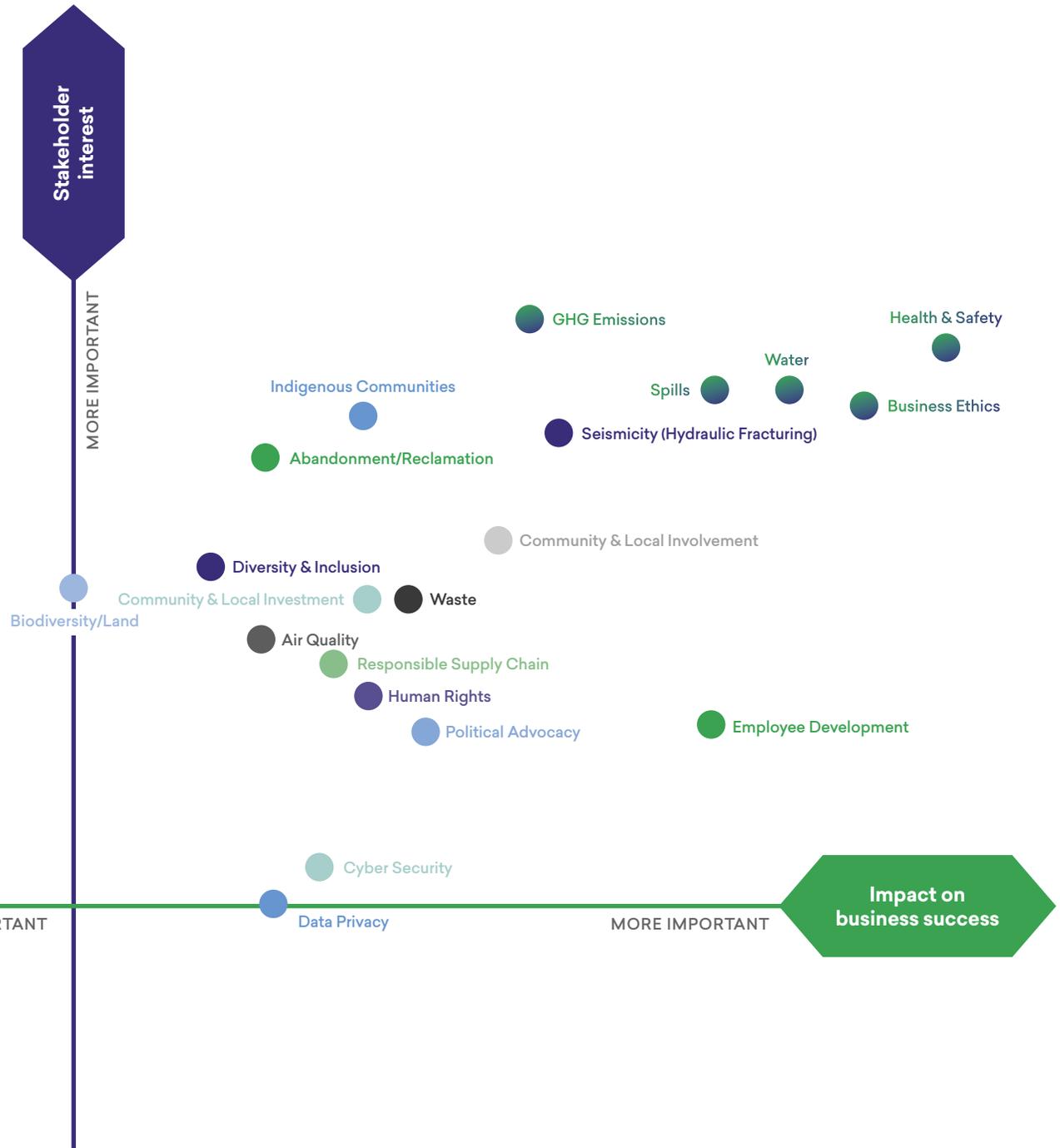
**OUR APPROACH TO SUSTAINABILITY REPORTING AND MATERIALITY ASSESSMENT**

**Materiality Assessment**

In 2020, we conducted our first formal materiality assessment, using ESG frameworks such as SASB, GRI and TCFD for reference, and taking industry peers, trends and initiatives into consideration. We also consulted a range of external stakeholders and incorporated their feedback into the assessment. The final results have allowed us to prioritize the ESG topics most impactful and relevant to Tourmaline and our stakeholders.

Tourmaline’s ESG committee approved the five key topics, that are deemed to be the focus areas of greatest importance to our stakeholders and could potentially have a significant impact on Tourmaline’s long-term value proposition. Tourmaline anticipates reviewing our materiality assessment every two years through active dialogue with our stakeholders to ensure all voices are heard. Based on stakeholders’ input, we expect the materiality assessment to continually evolve.

**Our five key ESG topics are Business Ethics, GHG Emissions, Water, Spills, and Health and Safety.**



# These are our guiding principles:

## STAKEHOLDER ENGAGEMENT

- 1** **We operate** our business in a responsible manner that respects the air, land and water. We strive to ensure future generations will enjoy a better standard of living.
- 2** **We exceed** the minimum requirements as established by regulators and government, to ensure we are the best at what we do, as is the case in all aspects of our business.
- 3** **We engage** actively with local communities to ensure we are respectful members of the community and everyone benefits from our operations.
- 4** **We ensure** our exceptional and loyal service providers benefit from Tourmaline's operations and receive fair compensation when working with us.
- 5** **We protect** our employees with a safe and respectful environment. Our people drive our business, and we encourage their continued outstanding performance.
- 6** **We invest** capital in responsible, ethical and profitable projects to deliver long-term value to our shareholders. We are strong financial stewards for our investors.



# We ensure high-quality information based on real-time data.

## ESG REPORTING ASSURANCES

At Tourmaline, we strive to track and report relevant data that's important to our stakeholders. To ensure we're sharing high quality information based on real-time data, we are constantly improving our processes and controls for data and measurement capability capture. We're also working towards third-party verification for select indicators, which will provide additional information and transparency in future sustainability reports. As a first step, we plan to have our emissions externally verified for our 2021 data. We believe that assurance is important to ensure our stakeholders have confidence in our reports.

In the fall of 2021, Tourmaline intends to report a supplemental report with data and key highlights from 2020.

### Target-Setting Process

We've set ambitious targets to guide Tourmaline's ESG performance and help our business remain resilient and

profitable as the world transitions to a lower-carbon/lower-emission economy. Our investors and stakeholders are seeking a balance between strong ESG performance and continued top-decile financial and operational results. We took time to research and develop our targets, ensuring that they are both realistic and achievable. We also believe that businesses in our sector should focus on near-term, quantifiable wins, as well as longer-term, significant improvements. Continuous improvement is the road to a lower-carbon/lower-emission world – and we are proud to do our part.

All of our business strategy and development plans include our corporate sustainability goals. We remain focused on delivering strong returns to our shareholders while pursuing our ESG targets to bolster our long-term value proposition. By becoming the lowest-cost and lowest-emission natural gas producer in North America, Tourmaline will provide business resiliency for our shareholders for decades to come.



# Pursuing our ESG strategy will enable us to provide the cleanest and most affordable natural gas to the world.

Tourmaline's Environmental, Social and Governance (ESG) strategy is based on the following pillars:

## High-Quality Reserves with Low-Supply Costs

Having a high-quality reserves inventory and a low-cost structure allows Tourmaline to provide low-emission and low-cost natural gas production to the world.

## Environmental Excellence

We strive to continuously improve our environmental performance, reducing our impacts on air, land and water in every possible way.

## Investment in Innovation

The innovative application of technology is at the heart of everything we do. It's the force that fuels continuous improvement in our ESG performance and enables us to reduce costs.

## Market Diversification

We have diversified our natural gas markets, accessing multiple sales locations to ensure the Company receives the best pricing available in the most locations for its products, ensuring the stability of our business model.

## Financial Sustainability

To provide low-cost natural gas to the world, we will maintain a conservative leverage profile. This allows Tourmaline to continue to navigate volatile commodity cycles.

## Stakeholder Engagement

We continuously engage with our stakeholders helping us to better ensure mutually beneficial outcomes for everyone involved.

# Innovation

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# Innovation is at the heart of everything we do.

It's the force that fuels Tourmaline's continuous improvement. We empower our people to implement new ideas, solutions and technologies to improve our environmental performance on all fronts, and at all times.

Tourmaline employs the same rigorous approach to environmental performance improvements as all other aspects of the business. We have an engineering team in place to develop and implement new proprietary emission-reduction technologies, execute expanded water-management initiatives, manage third-party environment-related research and, more recently, manage our emerging carbon offset business.

## A proud partner in the Natural Gas Innovation Fund

We're dedicated to not only continuously improving our own environmental performance but to elevating the performance of the industry, as a whole. Tourmaline is a proud participant and investor in the Natural Gas Innovation Fund (NGIF), initiated by the Canadian Gas Association to support the funding of cleantech innovation throughout the natural gas value chain. NGIF seeks to grow technology development in

the sector and invest in new technologies that enable cleaner natural gas from drill bit to burner tip.

## Emissions Testing Centre

Tourmaline has partnered with NGIF, Natural Resources Canada and the University of Calgary to develop the first Emissions Testing Centre (ETC) in Canada. At our West Wolf gas processing plant in Alberta, cleantech companies will be able to perform live emissions testing and field-test their technologies. The ETC is expanding to help Tourmaline test zero-methane wellsite technologies, as well as drilling and completion technologies assisting diesel displacement.

We believe this ground-breaking ETC will allow Tourmaline and other companies to test and develop the best emerging technologies to reduce our impacts on air, water and land.



Tourmaline has invested

# \$19.3 million

in ESG initiatives including cleantech since 2020

Tourmaline has received

# >\$3.2 million

in grants for projects advancing our sustainability initiatives

**WE'RE INVESTING IN PROJECTS THAT WILL HELP US:**

## Maximize energy efficiency on drilling rigs.

With the grant we received from Emissions Reduction Alberta, we're developing a mobile natural gas power unit to eliminate diesel use on rig engines and lower its use in overall power generation. The result: fewer emissions and greater efficiency.

## Eliminate methane emissions at well sites.

We are installing and testing zero-methane-emission technologies, which will help us determine the feasibility of various zero-methane-emission solutions and ultimately help us reach our methane-reduction targets.

## The innovative technologies we're investing in today with the NGIF will help us:

### Improve Our Emissions Tracking Data

GHGSat is using unique satellite and patented technology to provide greenhouse gas emissions monitoring at well sites, refineries and more, and to assist companies with leak detection and repair. Tourmaline has already received images of our operations in northeast British Columbia and we are using the data to help us reduce our emissions.



Luxmux's ARMS Smartpole is a greenhouse gas sensing and meteorological data solution that constantly detects emissions released at industrial sites. The system uses Luxmux's proprietary infrared NDIR technology to detect methane and carbon dioxide concentrations at sub-ppm levels. Environmental emission data from the site is uploaded to the cloud, where users can easily access statistics and visualizations of emissions at any time.



### Achieve Zero-Emissions Well Sites

Radmax's proposed project involves designing, building and testing a combined-cycle device that would include a natural gas expander, air compressor and electric generator. Though at an early stage, the technology is being designed to enable zero-methane well sites by providing both electricity and compressed air for pneumatic controls.



The EPOD from Westgen is an innovative hybrid power generation solution that combines solar and an advanced battery system with an industrial natural gas generator to power an air compressor delivering instrument air to pneumatic well site controls, eliminating methane emissions on site. Tourmaline will be a site host of Westgen's EPOD demonstration project through Emissions Reduction Alberta, Sustainable Development Technology Canada and NGIF.



Kinitics has developed an all-electric valve actuator to replace conventional methane-pneumatic devices. Built using the Company's shape memory alloy technology, the product addresses critical gaps in the current valve actuator marketplace. This project will help accelerate the electric route for zero-methane-emission well sites.



Packair has designed a small, lightweight compressor to deliver high air flow at modest pressures capable of running pneumatic devices. The compressor runs efficiently off low power from solar panels and will provide a zero-methane-emission well site using existing pneumatic devices.



## INNOVATIVE TECHNOLOGIES

### Use Lower-Carbon Fuels For Transportation

Zedcor is developing a mobile compressed natural gas (CNG) combined production and storage system. Initially, this system can be used to run stationary fuel combustion equipment on site to displace diesel. Eventually, it could enable vehicles to replace diesel fuel with CNG fuel, as the technology provides the ability to refuel on site. This project aligns directly with Tourmaline's diesel displacement initiative.



### Responsibly Retire Gas Wells and Mitigate Wellbore Methane Leaks

Winterhawk Well Abandonment has developed new technology for the more economical and reliable reduction and/or shutoff of greenhouse gas (methane) leakage outside of the production casing in oil and gas wells. This is commonly called a Surface Casing Vent Flow, or SCVF. This results in the emission of uncombusted methane into the atmosphere. Winterhawk's technology can be used in producing wells, suspended wells or wells undergoing the wellbore abandonment and asset retirement process.



### Support Blue Hydrogen Solutions

Ekona is developing a technology to generate hydrogen from natural gas that uses a technique known as pyrolysis to split the methane molecule into hydrogen and solid carbon.



New Wave Hydrogen is developing a technology that uses a unique method of methane pyrolysis technology through shock waves to initiate methane decomposition.

### NEW WAVE HYDROGEN INC.

### Develop Carbon Capture And Storage Technology

Hyperion Global Energy has developed a patented carbon capture and utilization system to convert waste CO<sub>2</sub> gas into high-purity materials and feedstocks. Their 'Tandem Carbon Recycling' system is a modular, drop-in unit that fits into a shipping container and can be retrofitted onto existing industrial sites and locations.



# Environment



# Task Force on Climate-Related Financial Disclosures

The Financial Stability Board established an industry-led task force, called The Task Force on Climate-Related Financial Disclosures (TCFD), to help identify the climate-related financial disclosures that would be insightful to investors, lenders and insurance underwriters. The TCFD developed four widely adoptable recommendations on climate-related financial disclosures: governance; strategy; risk management; and metrics and targets. As we continue to advance our own ongoing efforts to identify and manage potential environmental risks, we are incrementally adopting the TCFD recommendations and are pleased to share our efforts. We anticipate being fully aligned with TCFD in the future.

## Governance

Our existing governance framework allows us to effectively manage environment-related risks throughout our company. Sustainability and ESG-related issues and risks are evaluated by the Environment, Sustainability and Safety Committee (ESSC) that reports to the Board of Directors on a quarterly basis. The Committee is responsible for overseeing sustainability and ESG-related issues, and for ensuring overall corporate responsibility. The ESSC reviews and makes recommendations on corporate policies, standards and practices regarding sustainability.

Management has established a cross-discipline team (ESG Committee) to monitor and manage environment-related risks and all ESG issues. The committee meets regularly to discuss key topics and provide recommendations to management and the ESSC.

## Scenario Analysis

Tourmaline conducts scenario analysis by incorporating emissions regulations and expected costs into the current and future economic evaluation of projects.

100% of Tourmaline's operations are in jurisdictions that have carbon pricing federally and provincially (Alberta and British Columbia). We have incorporated escalating carbon prices in our future scenario analysis. We have also reviewed the International Energy Agency scenarios including Current policies, Stated Policies and Sustainable Development for global natural gas demand and global oil development. We are constantly reviewing and refining our scenario analysis and we intend to disclose more detailed information in future reports.

The world needs ever increasing quantities of all forms of energy. We believe natural gas will be the fastest-growing fossil fuel in North America and Asia, both as a primary source and as a reliable backstop for a growing renewable energy sector. Taking into account our growth trajectory, carbon taxes and changes in energy consumption based on the IEA's scenarios, Tourmaline's strategy to develop and deliver the lowest-cost and lowest-emission natural gas to the world is prudent and allows all our stakeholders to benefit.

OUR STRATEGY INCLUDES THE FOLLOWING KEY ELEMENTS:



Participate in industry policy discussions

Become active in carbon trading offsets

Generate offsets to support economic feasibility of new emissions-reducing projects

Invest in emissions-reducing projects to promote the advancement of zero-emission well sites

Invest and encourage research and development in emissions-reducing technology

Measure, track and record carbon emissions

### Climate-Related Risk Management

Climate-related considerations are integrated into key business planning and risk management processes throughout the Company. The Board and its committees are required to identify and oversee the management of significant risks to Tourmaline and ensure appropriate mitigation strategies are in place. Tourmaline uses the feedback from its materiality assessment to identify macro and micro specific risks facing our company. Risks are assessed considering health and safety, operational, financial, environmental, regulatory and reputational impacts.

RISKS		
Risks	Potential Risk	Mitigation
<b>Acute (Physical)</b>	Severe weather events such as flooding, wildfires, and others that impact/damage our infrastructure and/or, disrupt business operations.	<ul style="list-style-type: none"> <li>Operations are located throughout Alberta and British Columbia minimizing the concentration of assets to specific weather events.</li> <li>Exposure to extreme weather, such as winter conditions and forest fires, require robust ERP, insurance and other mitigation strategies.</li> </ul>
<b>Chronic (Physical)</b>	Long-term changes in weather impacting operations (ex. long-term weather patterns increasing road bans or other operational issues).	<ul style="list-style-type: none"> <li>Reviewing assets and operations to ensure assets in high-risk or exposed areas are monitored.</li> </ul>
<b>Policy &amp; Legal (Transitional)</b>	Changing government policy federally and provincially regarding emissions and the transition to net zero.	<ul style="list-style-type: none"> <li>Internal carbon sensitivity analysis.</li> <li>Discuss policy opportunities and risks with stakeholders, including government agencies.</li> </ul>
<b>Technological (Transitional)</b>	Lack of technological advancement, scalability and cost effectiveness to assist in the reductions of emissions.	<ul style="list-style-type: none"> <li>Participation in the Natural Gas Innovation Fund.</li> <li>Test, develop and integrate new technologies into our operations that both reduce emissions and are economically feasible.</li> <li>Hire and support new graduates to generate new ideas and explore new technologies.</li> </ul>
<b>Markets (Transitional)</b>	Decreased market demand due to political factors, lack of pipeline access, discrepancies in carbon policies in pricing in different jurisdictions and substitution from natural gas to alternatives.	<ul style="list-style-type: none"> <li>Active dialogue with stakeholders, including public policy discussions, industry action and investor meetings to explain the performance, sustainability and competitiveness of natural gas.</li> <li>Sustainability reporting and other forms of communication to tell our story in becoming the most sustainable natural gas producer in North America.</li> </ul>
<b>Reputational (Transitional)</b>	Potential for political and regulatory rhetoric to negatively impact the reputation of Canada's energy sector providing difficulty to operate and access capital.	<ul style="list-style-type: none"> <li>Active dialogue with stakeholders, including public policy discussions, industry action and investor meetings to explain the performance, sustainability and competitiveness of natural gas.</li> <li>Sustainability reporting and other forms of communication to tell our story in becoming the most sustainable natural gas producer in North America.</li> </ul>

**OPPORTUNITIES**

Opportunities	Potential Benefit	Actions
<b>Resource Efficiency</b>	Reduction of operational costs and reducing GHG emissions through the application of best practices by implementing technology and constantly reevaluating our operations.	<ul style="list-style-type: none"> <li>• Retrofitting pneumatic devices.</li> <li>• Substituting diesel with natural gas to reduce GHG emissions and air pollutants.</li> <li>• Modernizing drilling and completion fleet to reduce emissions by reducing time on site.</li> </ul>
<b>Energy Source</b>	Opportunities to reduce emissions through electrification using renewables.	<ul style="list-style-type: none"> <li>• Converting from high-carbon intensive energy to low- or zero-carbon intensive energy to power our operations, including infrastructure.</li> </ul>
<b>Product/Services</b>	<p>Opportunity to create revenue from the development of carbon offsets to then re-deploy in other company ESG efforts.</p> <p>Opportunity to leverage skills and experience to develop other sources of energy generation.</p>	<ul style="list-style-type: none"> <li>• Fostering a culture of increased emissions reduction throughout the Company and reinvesting revenue in more emissions-reduction projects.</li> <li>• Biogas, carbon capture and storage, and hydrogen.</li> </ul>
<b>Markets</b>	Access new investors and other providers of capital.	<ul style="list-style-type: none"> <li>• Provide adequate disclosure to demonstrate that environment-related risks and opportunities are prudently managed.</li> </ul>
<b>Resilience</b>	To increase shareholder value by developing a robust and resilient business model.	<ul style="list-style-type: none"> <li>• Continued focus on implementing the best technology into our operations and investing in new/exciting technologies.</li> </ul>

## Our Emission Data and Discussion

**Combustion:** Over 74% of Tourmaline’s emissions (Scope 1) are from using our own natural gas to power our gas plants, compressors, wells, and drilling and completions activities, including infrastructure electrification. While the majority of Tourmaline’s operating areas are not within reach of the existing electrical grid, we consider and actively look for opportunities to electrify our projects. For example, we are one of the few operators to use highline grid electricity to power a drilling rig, where feasible.

**Venting:** 21% of our Scope 1 emissions are from venting. Tourmaline is investing significant resources into reducing methane from our operations, including pneumatic device replacement and regular monitoring/inspecting, because we believe reducing methane is the most feasible and impactful way to lower emissions in the short term.

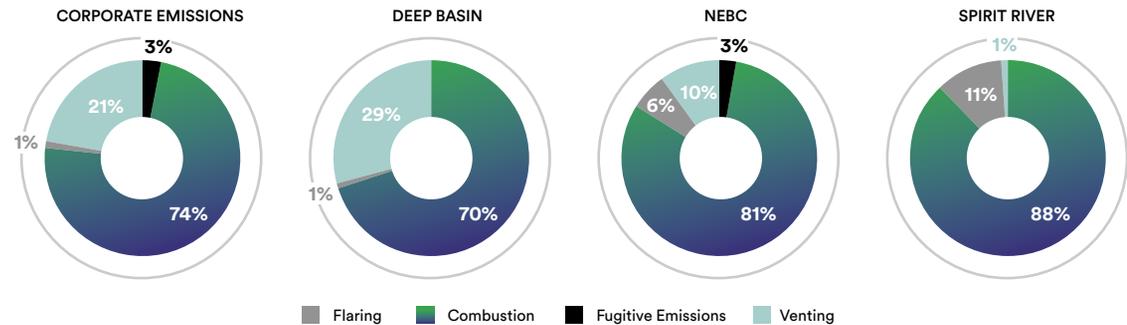
**Flaring:** Our in-line testing has almost completely eliminated flaring emissions.

**Fugitive:** Our fugitive emissions are not significant relative to other emission sources. However, Tourmaline follows the most stringent fugitive emissions compliance monitoring obligations by inspecting sites regularly with industry-leading technology, as we believe working onsite is the best way to understand and reduce fugitive emissions.

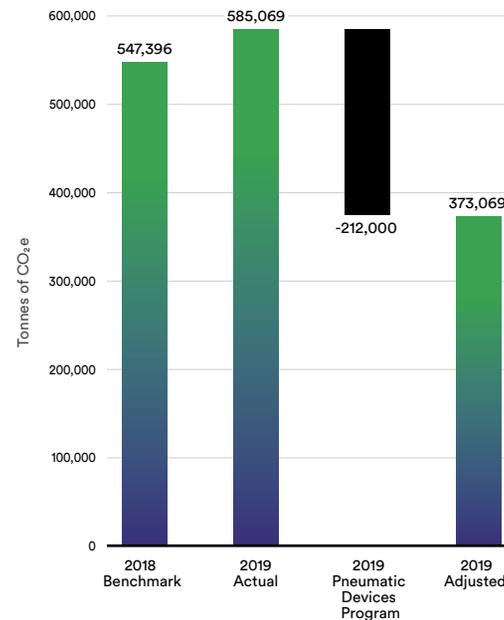
**Metrics & Targets:** In our last sustainability report, Tourmaline announced aggressive environmental targets that continue to guide our initiatives.

- Reduce our total methane emissions by 25% from 2018 levels by 2023. With current initiatives, we anticipate future reporting will show that we achieved this target with our 2021 data.
- Achieve a 25% reduction in corporate emissions intensity (Scope 1) from 2018 levels by 2027.
- Eliminate the use of fresh water throughout our core gas operations.

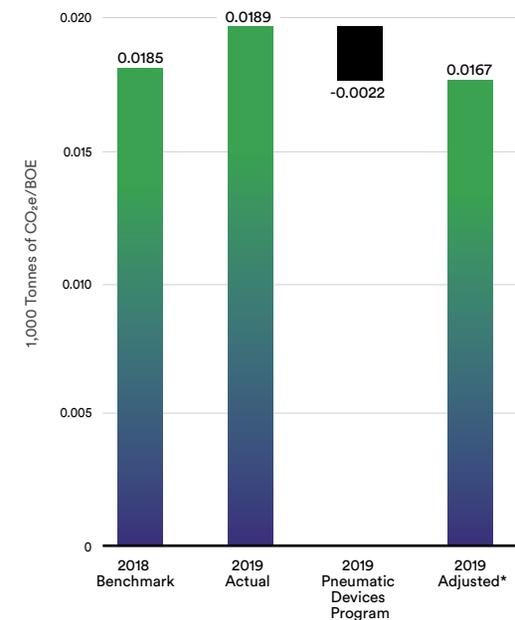
### EMISSIONS BY TYPE (SCOPE 1)



### METHANE EMISSIONS (SCOPE 1)



### EMISSION REDUCTION (SCOPE 1)



\* Tourmaline replaced over 3,400 pneumatic devices in Q3 and Q4 of 2019 resulting in the impacts not fully being reflected in 2019 data. Tourmaline expects to see the following reduction in methane ~212,000 tonnes CO<sub>2</sub>e/annually in 2020 from these efforts. We adjusted 2019 to show the dramatic effect.

### Restatement of 2018 Data

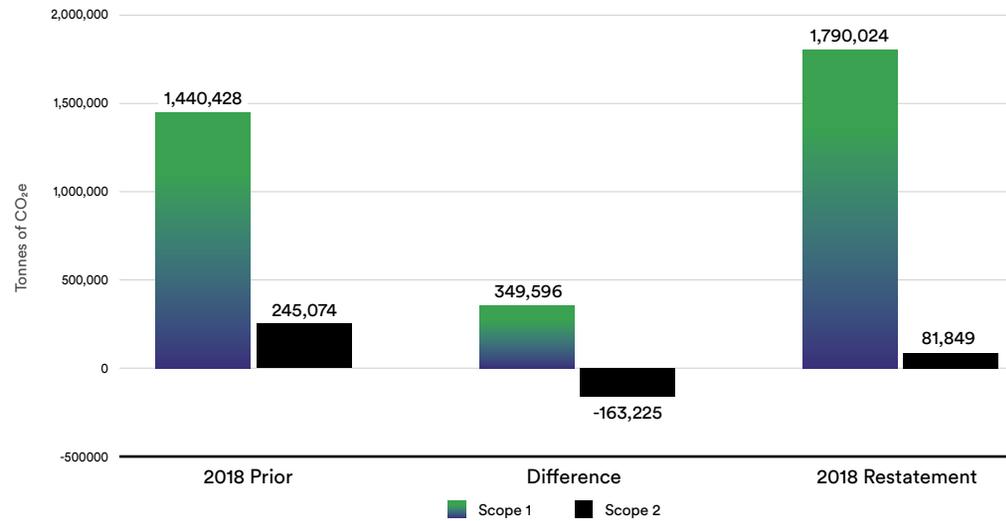
In 2020, the scope of fuel, flare and vent reporting in Directive 60 from the Alberta Energy Regulator was expanded to properly redefine fuel gas that is released routinely in oil and gas operations as “vented” to distinguish it from fuel that is combusted. The implication is that vented fuel gas (primarily methane) is weighted very differently in GHG accounting than combusted fuel. Due to this change, industry reported a significant increase in GHG emissions in 2019 over 2018 levels.

Tourmaline restated its 2018 emissions using this change in accounting methods to benchmark our aggressive methane-reduction efforts in 2019 and beyond. We restated 2018 figures by increasing Scope 1 emissions by 349,596 tonnes CO<sub>2</sub>e and reducing Scope 2 by 163,225 CO<sub>2</sub>e.

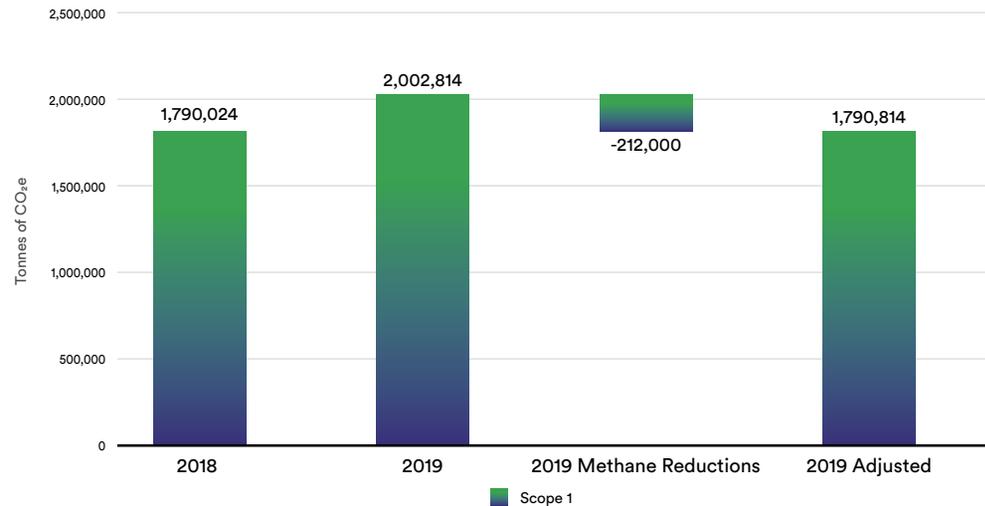
### Methane

Tourmaline replaced over 3,400 pneumatic devices in the second half of 2019, therefore 2019 data does not reflect the program’s full impacts. In 2020, Tourmaline expects to see methane emissions reduced by approximately 212,000 tonnes.

2018 EMISSIONS RESTATEMENT (SCOPE 1 AND SCOPE 2)



2019 ADJUSTED EMISSIONS FOR FULL YEAR IMPACTS OF METHANE REDUCTION PROGRAM (SCOPE 1)



# We strive to continually improve all aspects of environmental performance.

## AIR

We are committed to reducing our emissions – and our results demonstrate our progress. Since 2013, Tourmaline has reduced its CO<sub>2</sub> emissions intensity by 31% while increasing production by 289%. To underscore our commitment as a sustainable producer, we've created an internal Energy Efficiency Task Force to share learnings and review technologies that reduce emissions and increase efficiencies.

In addition to our own high standards for minimizing our impacts on the atmosphere, we comply with all applicable regulatory requirements relating to emissions reporting and reduction in the jurisdictions in which we operate. We are also actively monitoring regulatory changes in our operating areas to ensure we comply with new and emerging requirements.

Since 2013, Tourmaline has reduced its CO<sub>2</sub> emissions intensity by **31% while increasing production by 289%.**



We are a participant in the

## Carbon Disclosure Project

a not-for-profit organization that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts.

---

TO MINIMIZE OUR IMPACTS  
ON AIR, WE PLAN TO:

### Reduce our total methane emissions

by 25% from 2018 levels by 2023

### Achieve a 25% reduction

in corporate emissions intensity (Scope 1) from 2018 levels by 2027

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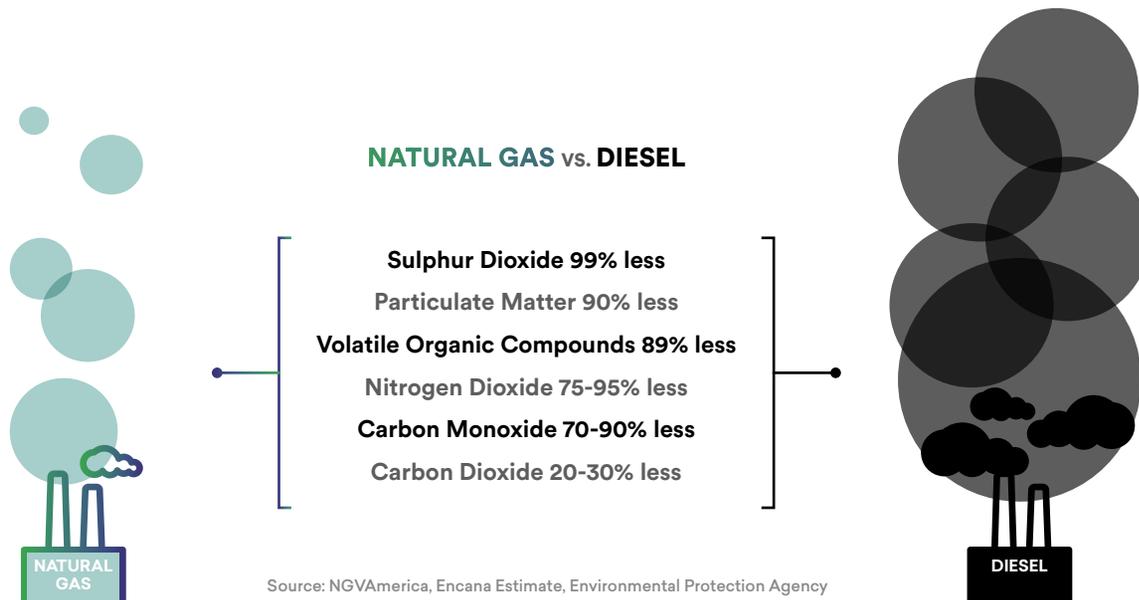
# Focusing on diesel displacement to reduce emissions.

## DIESEL DISPLACEMENT

Utilizing diesel fuel for drilling and completions operations was a significant contributor to our greenhouse gas emissions.

For the past five years, we have been systematically displacing diesel with our own natural gas in the field. Tourmaline is utilizing natural gas to operate our hybrid drilling rigs and to fuel portable generators that generate on-site electricity for our completions equipment. Displacing high-carbon diesel with cleaner natural gas allows the Company to reduce both our emissions and capital costs.

To support our company-wide initiative, the Company has also constructed extensive infrastructure to perform in-line testing and supply natural gas to our sites. Not only do we reduce emissions and costs using our own natural gas, but we improve safety by removing unnecessary diesel transport trucks off the road.



**\$8 million**

invested into diesel displacement infrastructure

**>20 million**

litres per year diesel reduction

**>\$75 million**

in fuel cost savings in the next 5 years

**Energy Excellence Award Champion**

in Innovation & Technology Excellence for our diesel displacement initiative

**0.73 Net CO<sub>2</sub>e reduction (tonne)**

using 1e<sup>3</sup>m<sup>3</sup> of natural gas instead of diesel

# We've made big strides with our diesel displacement initiative, but there's a lot more underway.

We've partnered with Precision Drilling and Caterpillar to develop a plug-and-play mobile natural gas generator and energy storage system for electric-powered drilling rigs. The technology uses clean-burning natural gas and a smart energy management system, storing electricity that would otherwise be wasted. This high-efficiency system reduces GHG emissions and power-generation costs.

Looking ahead, our diesel displacement initiatives also include:

- Using fuel cell and solar energy to power our well electrical equipment.
- Powering our entire completions and stimulation program with natural gas.
- Reducing emissions further by using natural gas and electric pumps for our water operations.

## Methane

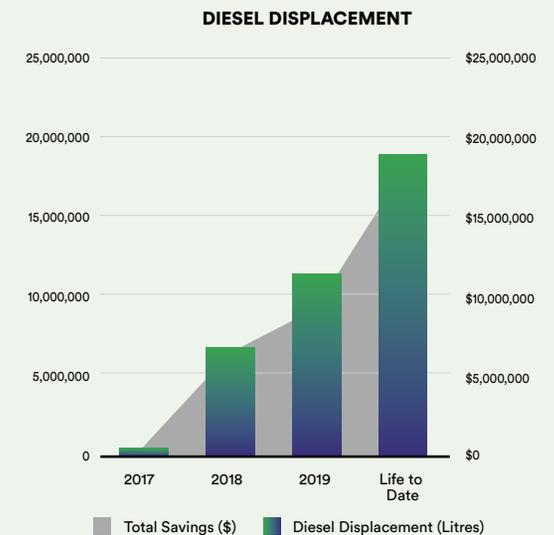
In addition to diesel displacement, we are also focused on reducing methane emissions. We're targeting a 25% reduction in total methane emissions from 2018 levels by 2023. To accomplish this, we are:

- Implementing innovative detection and repair technology to identify and mitigate leaks quickly.

- Replacing methane-venting valves with low/zero-bleed valves.
- Initiating the implementation of electric controls that mitigate methane venting.
- Utilizing grid-independent, hybrid power solutions to operate in remote areas while mitigating emissions.
- Avoiding methane emissions completely by changing where and when we perform flow-meter testing.

Our future plans to minimize methane include:

- Increased monitoring of fugitive emissions through infrared cameras, drones, satellites and other related technologies.
- Eliminating three-phase separation and associated venting sources (pneumatic devices) with the use of three-phase metering.
- Replacing pneumatic pumps with low-voltage electrical pumps.
- Expanding the size of multi-well pads, allowing for shared infrastructure and significant methane emissions reduction.



Since 2019, our valve replacement program has been eliminating approximately

**212,000 tonnes of CO<sub>2</sub>e per year**

And we are continuing with other programs to generate carbon offsets

### Carbon Offsets

Tourmaline's assets are located in British Columbia and Alberta, both of which employ carbon pricing and robust environmental standards to allow producers to develop in a responsible manner while encouraging innovation. Tourmaline believes that carbon offsets are an important tool in facilitating emissions reductions. As such, we are actively developing a portfolio of carbon offsets. Our primary focus for offset generation is in Alberta, where we've replaced 3,400 pneumatic devices so far.

The carbon offset market encourages the expedited use of low-emissions equipment, which has an immediate impact on reducing Tourmaline's emissions intensity. The ability to generate carbon offsets also allows other emitting facilities or companies to benefit from Tourmaline's proven track record in execution excellence.

The uptake of low-emissions equipment supports the growing service sector and the benefit of providing skills and knowledge to other jurisdictions.

**Tourmaline believes that carbon offsets are an important tool in facilitating emissions reductions.**

### Other Notable Highlights

#### In-Line Flow Testing

Tourmaline is an industry leader and one of the first companies in Canada to use this technology, long before it was mandated by the Alberta Energy Regulator (AER) through Directive 60.

Traditionally, when a new well is drilled and completed, gas is produced and flared at the well site as the well is initially cleaned up. The flaring, or burning, of this associated gas releases emissions into the atmosphere. However, Tourmaline has installed pipelines that capture the natural gas that would otherwise be flared during completion and directs this gas to processing facilities. This ensures that Tourmaline mitigates continuous flaring at the well pad while systematically reducing our emissions footprint.

#### Waste Heat Recovery Units

Tourmaline is systematically installing and testing waste heat recovery units at company-operated facilities. This allows for the capture of heat from compressor engines, which we then reuse in our gas processing facilities. This significantly reduces emissions, as we require less natural gas overall to operate our facilities. We are excited that the first phase of our state-of-the-art Deep Cut Plant in Gundy was built using waste heat recovery.



# Tourmaline continuously strives to be the industry leader in water management.

## WATER

Tourmaline continuously strives to be an industry leader in water management, with over 95% of our frac water recovered after completion for reuse. We believe responsible water management is a critical aspect of our overall environmental performance improvement. The goal is to ultimately eliminate the use of any fresh water in completion activities throughout our core operating areas.

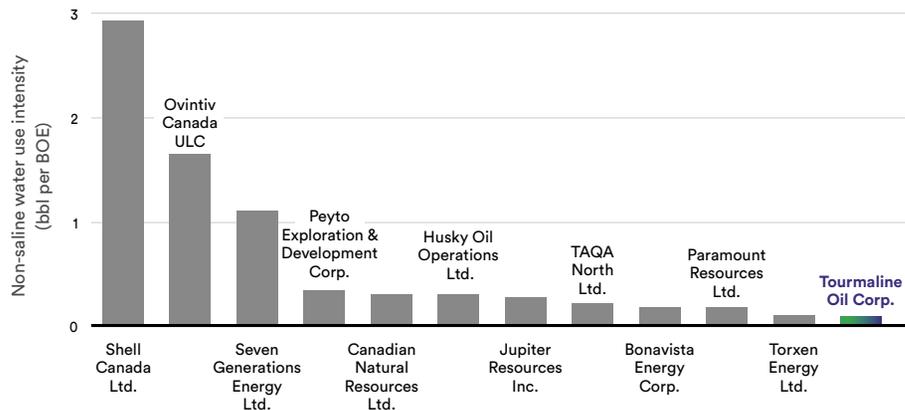
### Responsible water management: Reducing, reusing and recycling our water

Tourmaline is dedicated to minimizing water usage and has built extensive and award-winning water infrastructure to continually improve our performance. Our company-wide

initiative allows us to reduce the amount of fresh water we utilize, reuse water that would otherwise be injected into disposal wells and recycle the majority of the water employed in our natural gas fracking operations.

Tourmaline continues to be at the forefront of technology-driven change in reducing the consumption of fresh water. Since 2015, the Company has decreased fresh water usage per well by 32%. In Alberta and British Columbia, we are also active in multi-operator water-sharing groups which allow for a more efficient and low-cost use of water.

2019 NON-SALINE WATER USE INTENSITY IN ALBERTA



Source: Alberta Energy Regulator

**>95%**  
of produced water recycled in B.C.

**250,000 m<sup>3</sup>**  
of produced water storage

**125km+**  
dedicated waterlines

**Energy Excellence Award Champion**  
for leadership in reducing fresh water use

In addition to conserving water, our recycling initiative results in a huge reduction of trucking activity, fewer emissions, increased safety and less disturbance to our communities.

# Collaborating for a cleaner tomorrow.

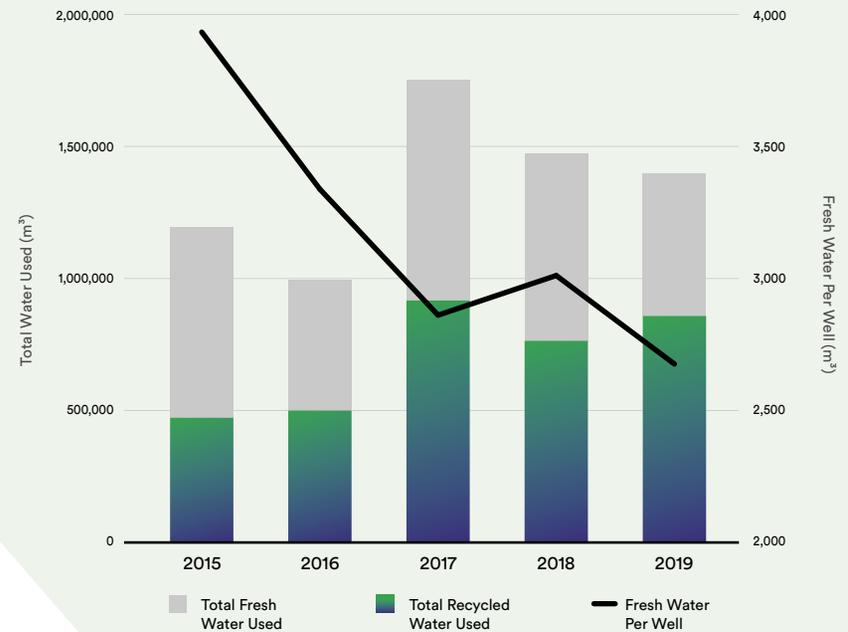
## WATER

Tourmaline participates in multi-operator water-sharing associations, such as the British Columbia Montney Water Operators Group and Alberta Water Operators Group. Collaborating with other operators to share produced and flow-back water not only enhances the efficiency of our water use but further minimizes our reliance on fresh water for our hydraulic fracturing operations. We also prioritize consultation with various First Nations communities to ensure projects are planned outside of hydrologically sensitive areas.

Looking ahead, our water infrastructure and dedication to using alternative sources of water, including recycled flow-back fluid and produced water, means Tourmaline is in a unique position to eventually eliminate fresh water use.

**We believe responsible water management is crucial to our long-term success.**

### FRESH WATER USAGE



# We strive to conserve and protect the lands on which we operate.

## LAND

Tourmaline strives to conserve and protect the lands on which we operate. While minimizing surface impact, we maintain the highest standards of safety and environmental stewardship. In addition to many of our ongoing initiatives, such as pursuing plant expansions on existing sites rather than new standalone facilities and utilizing existing pipeline right-of-ways to minimize surface impact, we are pleased to report on the following activities.

### Biodiversity

Industry operations have potential impacts to aquatic and terrestrial ecosystems. To minimize and avoid such disturbances at every stage of resource development, our approach includes:

- Performing assessments during the planning and completion stages of each project.
- Managing our construction and development activities to minimize the surface footprint.
- Implementing wildlife management plans.
- Supporting regional biodiversity programs.

- Monitoring continuously throughout the life cycle of the asset.
- Investing systematically in reclamation activities.

### Well Pad Design

In western Canada, Tourmaline is a leader in the utilization of large, efficient multi-well pads. As Tourmaline continues to develop steadily larger multi-well pads across our core operating areas, we are significantly reducing surface disturbance. A single multi-well pad, which occupies no more surface area than half a football field, can support between 10 and 40 wells.

### Tree Planting

We are currently investigating a variety of nature-based solutions to improve our land performance, including a tree-planting program that would begin in 2021. Once implemented, Tourmaline plans to invest \$100,000 per year in tree planting across Alberta and British Columbia.

Tourmaline's approach results in

**~50% less land disturbance**

when we use multi-well pads instead of single-well leases.

Tourmaline plans to invest

**\$100,000 per year**

in tree planting across Alberta and B.C.

## LAND

### Reclamation

Conserving and protecting land is an ongoing commitment. Managing asset retirement obligations is a crucial piece of our environmental stewardship and plays an important role in maintaining the social license to operate. By industry standards, Tourmaline is a relatively young company. This means our facilities and wells are younger and better designed, resulting in a lower Asset Retirement Obligation.

#### Alberta:

- Tourmaline contributes to the Orphan Well Association.
- The Company supports the Alberta Government's initiative regarding area-based closures.

#### British Columbia:

- Tourmaline contributes to the Orphan Site Reclamation Fund.
- The Dormant Site Regulation was enacted in 2019. This regulation specifies timelines and stages for decommissioning of inactive wells and reclamation of inactive well sites. Decommissioning and reclamation targets for Type A wells (those that were inactive for five years up to the end of 2018) have been set for the end of 2021 and the end of 2024, respectively, while the restoration deadline is 2024. Tourmaline is on schedule to exceed these targets.

### Seismicity

Tourmaline is acknowledged as an industry leader in monitoring, measuring, mitigating and communicating in seismicity areas related to completion operations. The vast majority of Tourmaline's operating areas exhibit no seismic activity. We manage seismic activity where it occurs with great care. To prepare for our hydraulic fracturing operations, Tourmaline conducts extensive research and complex modeling to determine the optimal parameters, such as depth and geological hazards. With research complete, and prior to undertaking any operations, we conduct extensive public consultation and communication with landowners and regulators. In the event seismic activity is observed, the Company proactively monitors data to ensure minimal impacts to the land and our stakeholders. This comprehensive approach minimizes seismic impacts and allows us to exceed regulatory requirements at all times.

Tourmaline believes it's the first company in British Columbia to acquire 3D seismic utilizing zero-cut receiver lines. Eliminating the need to create pathways for communication cables dramatically reduces the environmental impact. Not only is our seismic impact reduced by over 50%, but our HSE risk is reduced by over 60%, as using 3D seismic eliminates the need for manpower to clear pathways and lay communication cables.

**9 wellsite**  
certifications received

**47 seismometers**

in KSMMA area of B.C. to  
detect seismicity

One multi-well pad can support between  
**10 and 40 wells**

# Social



# We prioritize the safety of our employees, contractors and the public.

## HEALTH & SAFETY

At Tourmaline, safety is critically important. We ensure every employee and contractor is aware of, understands and complies with our health and safety policies, as well as all government regulations.

### Our Program

Our Health, Safety and Environment program is based on hazard identification, assessment and control. To ensure utmost preparedness, the Company conducts regular inspections of all of our facilities, equipment and general infrastructure. Asset integrity and maintenance programs also ensure that safe and reliable equipment and facilities on site meet or exceed the requirements of government regulations and industry best practices. Management ensures a continuous presence at all field sites and on-going operations.

### Data Tracking

We diligently track and report comprehensive safety statistics, including worker near misses, hazard identification reports, injuries, vehicle incidents, equipment-related damage and environment-related releases. Tracking data allows for identification of incident trends and any potential weaknesses or risks associated with our health and safety procedures. Management reviews the data on a regular basis, with the ultimate goal of improving safety and working towards incident prevention.

### Strict Adherence

In addition to our focus on our employees' safety performance and ensuring strict adherence to existing policies, all Tourmaline contractors providing services to Tourmaline must complete a pre-qualification process by submitting appropriate worker compensation, insurance and safety program documentation for review. As part of the responsibility and accountability process, employees, contractors and subcontractors who deviate from safety, health, environmental and regulatory rules and guidelines may face disciplinary action, dismissal or legal action.

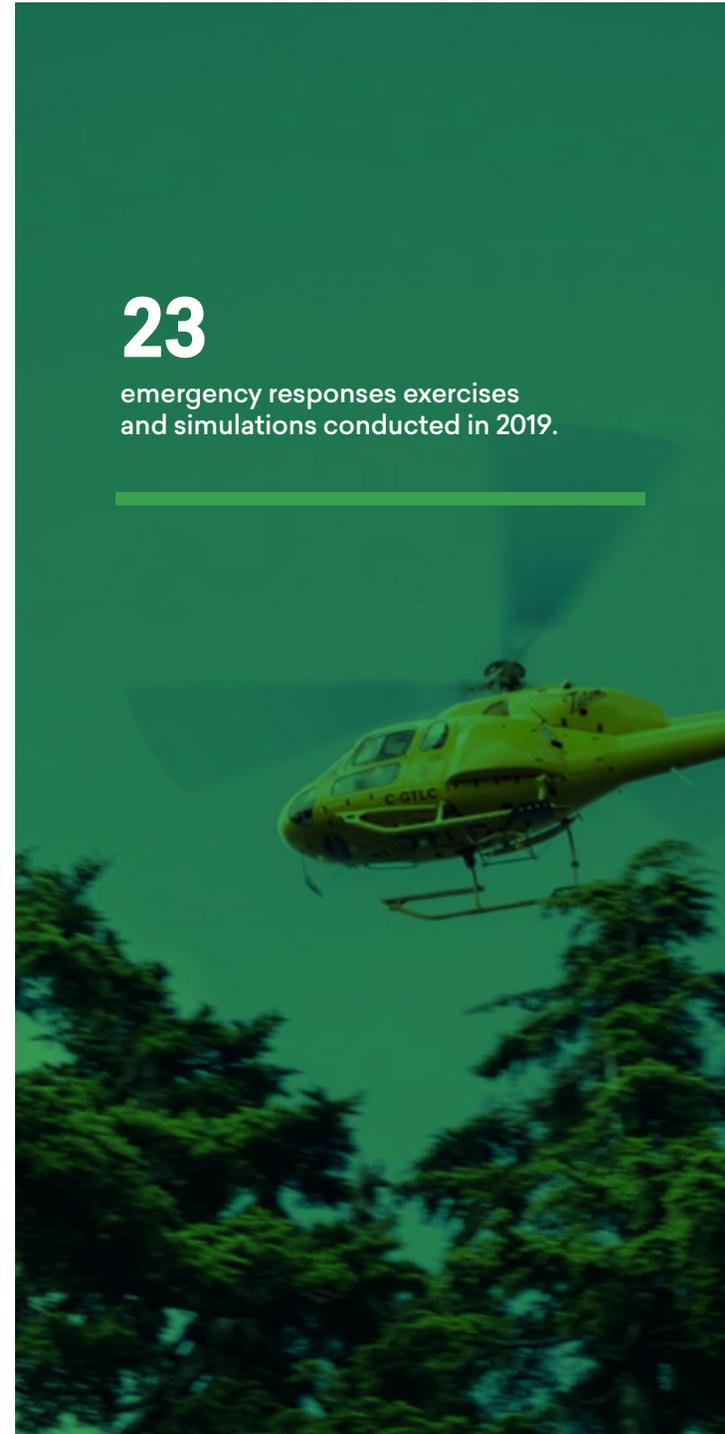
### Emergency Response Plan

Tourmaline has a robust Emergency Response Plan (ERP) in place to ensure it can react immediately to any incident and reduce the risks involved for our people and the communities in which we operate. Our ERP sets out the safety precautions, emergency actions and procedures to be implemented if an incident occurs during operations that creates a potentially hazardous situation. All Tourmaline employees and contractors are familiar with our ERP and, to ensure their readiness, the Company conducts regular training drills.

Tourmaline's Board of Directors has delegated authority to the Environment, Safety and Sustainability Committee to oversee policies relating to environment, health, safety and sustainability. Employees and contractors are responsible for complying with policies and rules, maintaining their required level of training, and reporting unsafe conditions or activities.

# 23

emergency responses exercises and simulations conducted in 2019.



# We are committed to working with Indigenous communities.

## INDIGENOUS ENGAGEMENT

### Committed to working with Indigenous communities

The Company continuously engages with all First Nations whose traditional territories in Alberta and British Columbia may be impacted by Tourmaline's operations. Traditional boundaries are prescribed areas and dictated by the regulators in each province in consultation with the First Nations. In Alberta, we consult with Indigenous communities as directed by the Aboriginal Consultation Office (ACO) of the Government of Alberta. In British Columbia, the regulator is responsible for consultation, but heavily encourages companies and proponents to work inclusively with the regulator and the relevant First Nations in the consultation process, with an emphasis on pre-consultation.

### Our engagement with First Nations is based on:

#### Regular Consultation

Consultation and collaboration with Indigenous communities is crucial to our business. We are in continuous conversations with First Nations, allowing the Company to meet their unique needs and accomplish our operational goals.

#### Active Community Involvement

Through the consultation and engagement process, Tourmaline is continually available to communicate and interact with Indigenous communities.

### Supporting Indigenous Communities

Whenever possible, we strive to hire First Nation-preferred vendors and contractors who work in the communities in which we operate. As part of the approval process, we fund site visits for community members and elders to view the location of our proposed projects.

### Investing in the Future

Tourmaline strives towards reconciliation by developing scholarships for students in Indigenous communities across Alberta and British Columbia. We seek to empower First Nations youth with skills and job opportunities.

### Indigenous Awareness

Tourmaline is committed to developing our inaugural Indigenous Training Program for deployment in late 2021. We believe education and active dialogue are crucial as we move towards reconciliation.



# Our people are dedicated, engaged and highly productive.

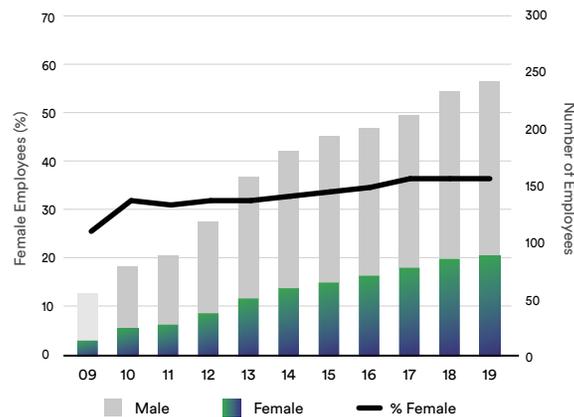
## EMPLOYEES & DIVERSITY

At Tourmaline, we are proud of our employees and believe our people set us apart. We continue to support them in many ways, including:

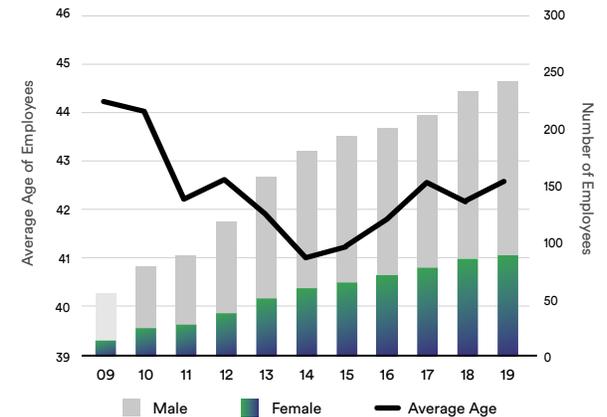
- Increasing our education and training per employee by more than 300% since 2017.
- Fostering an inclusive and diverse culture, ensuring equal opportunity.
- Hiring talented new graduates to ensure our employee base is continually regenerating.
- Mentoring and developing younger employees.
- Encouraging employees to present and share their knowledge with groups such as universities and other stakeholders.

The Company has a highly motivated and dedicated work force. Over the last five years, voluntary turnover at Tourmaline has been approximately 1%. Our employees are also highly productive; with a staff count per boe which exceeds 1,000 boepd per employee – double the industry average. The Company had no layoffs during the COVID-19 and oil price crises of 2020.

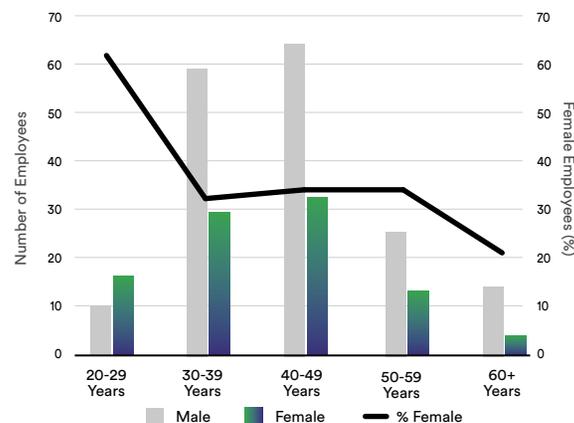
EMPLOYEE GENDER PROFILE



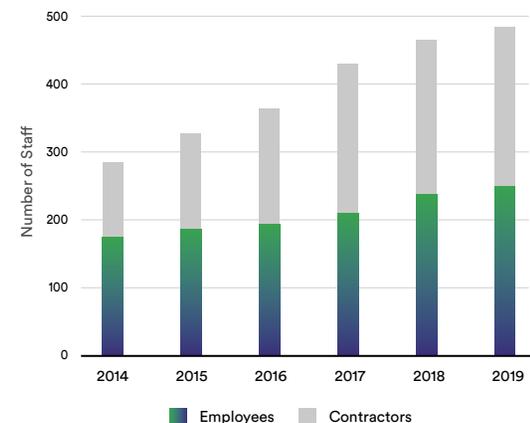
EMPLOYEE DEMOGRAPHICS BY YEAR



EMPLOYEE DEMOGRAPHICS BY AGE & GENDER



TOTAL STAFF COUNT



# We are a proud member in the communities we call home.

## COMMUNITY ENGAGEMENT

Tourmaline is proud to be a responsible and contributing member to the Alberta and British Columbia communities in which we operate, including Fort St. John, Spirit River, Edson, Hinton, Grande Prairie and Calgary. We contribute to these communities primarily through our exploration and production program, which creates jobs, generates tax revenue and benefits local suppliers and vendors. Our more than 6,300 vendors are critical to our long-term success and play a key role in helping protect the health and safety of the communities in which we work.

As a company and as individuals, we also contribute money and our volunteer time to many charitable organizations across western Canada. We support initiatives and causes that promote youth education, health and sports.

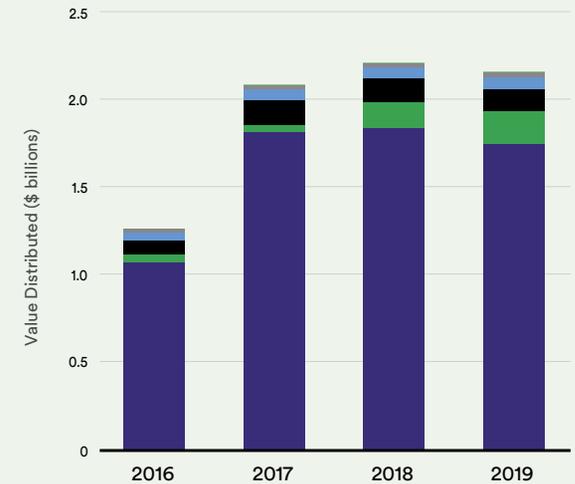
Though COVID-19 has put a pause on some of our in-person volunteering activities, our employees are still able to offer a helping hand where health and safety protocols can be followed. Whether it be participating in charitable races,

fundraising for a cause or volunteering at a local food bank, our people are dedicated to making a difference in the communities we call home.

Our recent contributions to community-based organizations include donations to:

- Food banks across British Columbia and Alberta.
- The United Way of Calgary and Area, which provides services to improve lives in the communities we operate.
- Ronald McDonald House of Southern Alberta.
- Inn from the Cold, an organization offering shelter to homeless families.
- Veterans' Angels, which provides financial and emotional support to Canada's veterans.
- A wide range of community-based initiatives to help build playgrounds and sports facilities for children.

VALUE DISTRIBUTED TO STAKEHOLDERS



In 2019, we distributed to our stakeholders:



- Suppliers
- Providers of Capital
- Governments
- Employees
- Landowners
- Communities

# Governance



# We believe that strong corporate governance is a key driver in long-term value creation.

Our management team and Board of Directors believe that strong corporate governance is a key driver in long-term value creation for all stakeholders. Tourmaline has an Environment, Safety and Sustainability Committee (ESSC) comprised of independent board members.

The ESSC has ultimate responsibility for oversight of the overall ESG strategy. The Chairman and CEO, along with the rest of Tourmaline's leadership team, is responsible for implementing Tourmaline's sustainability strategy. We believe that responsible sustainable development requires the input of many people in a respectful and collaborative way.

## Board of Directors

Tourmaline's Board of Directors is committed to playing an active role in supporting the execution of Tourmaline's strategy through upholding the highest standards of corporate governance and fulfilling its duties of stewardship and accountability. The Board's oversight encompasses strategic planning processes, risk management and communication with investors and other stakeholders, while ensuring appropriate standards of business conduct. The Board is also responsible for selecting, monitoring and evaluating executive leadership and aligning management's decision-making with long-term shareholder interest.

Tourmaline's Board of Directors consists of 10 directors, 8 of whom are independent. The role of the Lead Director is assumed by an independent director and is separate from the role of Chief Executive Officer. All Board committees are comprised entirely of independent directors.

## Management

All members of Tourmaline's management team are responsible for Tourmaline's ESG performance, while the CEO has ultimate accountability. Management discusses ESG items with the Board and ESSC on a quarterly basis.

## 30% female

members on the Board of Directors

## 8 of 10 directors

are independent

## 100%

meeting attendance

## ~8%

insider ownership (as of Q1 2021)

# Our risk management system is overseen by our senior management and Audit Committee.

## RISK MANAGEMENT

We believe many aspects of our business require the ability to react swiftly and precisely to any change or incident. As such, we must be prepared at all times to react to material risks. Below are the risks management has deemed most material and the ways we are mitigating their potential impacts.

Risks	Potential Impact	Mitigation
<b>Legislation</b>	Tourmaline has operations impacted by provincial (Alberta and British Columbia) and federal government legislation. Legislation and policy determined by any level of government could have a material impact on our operations and financial performance.	<ul style="list-style-type: none"> <li>Engagement with industry, government, regulatory and other stakeholders to understand potential changes.</li> <li>Operate in low-risk jurisdictions.</li> </ul>
<b>Public Perception</b>	Increased scrutiny from stakeholders about oil and gas production and its impact on the environment, which would reduce our ability to raise capital and alter our corporate image.	<ul style="list-style-type: none"> <li>ESG reporting to demonstrate to stakeholders our commitment in being a sustainable and thoughtful company.</li> <li>Increased public awareness regarding the benefit energy provides to Canadians and the world.</li> <li>Consultation with our stakeholders.</li> </ul>
<b>Environmental Issues</b>	Impacts Tourmaline's operations in numerous ways, including legislation, perception, market access, risk associated to weather events to our operations and more.	<ul style="list-style-type: none"> <li>Please refer to the TCFD disclosure.</li> </ul>
<b>Material HSE Incident</b>	The nature of Tourmaline's operations involves operational and natural hazards that have the potential to harm the environment or people.	<ul style="list-style-type: none"> <li>HSE performance indicators reviewed regularly by management and Board of Directors.</li> <li>Experienced staff.</li> <li>Annual review of our Emergency Response Plan.</li> <li>Asset integrity inspections.</li> <li>Emergency Response Plan exercises.</li> </ul>

RISK MANAGEMENT CONTINUED

Risks	Potential Impact	Mitigation
<b>Market Access</b>	For Tourmaline to be profitable, it needs egress opportunities to receive an adequate price for its products.	<ul style="list-style-type: none"> <li>• Member of multiple CAPP committees regarding takeaway capacity.</li> <li>• Diversification strategy through hedges and physical hubs.</li> <li>• Publicly advocating for pipelines and LNG opportunities for Canada.</li> </ul>
<b>Attracting/Retaining Key Staff</b>	The loss of essential staff could negatively impact our operations.	<ul style="list-style-type: none"> <li>• Maintain a market-competitive compensation package.</li> <li>• Advocate and promote a learning culture, including leadership development.</li> </ul>
<b>Cyber Security</b>	Failure of any of our systems could disrupt regular operations.	<ul style="list-style-type: none"> <li>• Regular back-ups.</li> <li>• End user education.</li> <li>• Proactive defense.</li> </ul>

For additional risks please refer to Tourmaline's Annual Information Form.

# Tourmaline's policies uphold our values, ethics and integrity.

## POLICIES

### Code of Business Ethics Policy

Our focus on maintaining a strong ethical culture has allowed us to play a material role in Canada's natural gas sector, and we strive to keep the trust we have worked hard to earn. All of Tourmaline's directors, officers and employees must act in accordance with our code of business conduct and ethics policy.

[www.tourmalineoil.com/business-ethics](http://www.tourmalineoil.com/business-ethics)

### Whistleblower Policy

Our whistleblower policy provides the opportunity for employees, contractors, consultants and external stakeholders to raise concerns in a confidential manner. Employees are reminded to report any concerns or issues to management or to directly call our whistleblower hotline. We encourage all our employees to speak up and report any concerns. To review our policy, please find it under our Code of Business Conduct and Ethics, section II.

[www.tourmalineoil.com/whistleblower](http://www.tourmalineoil.com/whistleblower)

### Human Rights Policy

All Tourmaline agents must uphold and respect human rights as reflected in the UN Universal Declaration of Human Rights and The Canadian charter of Rights and Freedoms.

[www.tourmalineoil.com/human-rights-policy](http://www.tourmalineoil.com/human-rights-policy)

### Environmental Policy

Tourmaline integrates environmental considerations into its business plans, spending decisions, performance management, project development, operations, communications and stakeholder relations.

We pursue measurable and meaningful targets that are achievable with current or emerging technology complementing our scientific approach to problem-solving. Tourmaline tracks and reports on a broad range of environmental metrics as part of its commitment to environmental stewardship and continuous improvement. The Company is committed to limiting impact on the air, land and water by investing in technology and continuously improving its operating practices. We believe in collaborating with our peers, industry associations and entrepreneurs to find innovative solutions to minimize impact on the environment and maximize business value.

Before any major project is undertaken, Tourmaline conducts a comprehensive baseline assessment that includes biodiversity and wildlife species concerns. The mitigation hierarchy steps followed are:

- avoid impacts to high value biodiversity areas (such as wetlands or other areas with important wildlife habitat);
- minimize effects; and
- restore/reclaim to an equivalent capability so the impact is temporary.

When possible, Tourmaline contributes to creating and restoring ecosystems, including fisheries lakes and wetlands, and takes an active involvement in managing species of concern, such as caribou habitat restoration.

### Diversity Policy

The Board and the Corporation are committed to ensuring a diverse and inclusive culture across the organization, including at the executive level, by promoting equality of opportunity. The Board will encourage and support the Corporation in its efforts, including seeking external independent advisory services as appropriate, to foster a collaborative and innovative workforce.

[www.tourmalineoil.com/diversity-policy](http://www.tourmalineoil.com/diversity-policy)

### Disclosure, Confidentiality and Trading Policy

The Disclosure Policy documents the disclosure policies and practices of Tourmaline and aims to promote an understanding of the legal requirements among Tourmaline's directors, officers and employees.

[www.tourmalineoil.com/disclosure-confidentiality](http://www.tourmalineoil.com/disclosure-confidentiality)

### Commitment to Transparency

Tourmaline publishes its reported payments to governments as required by the Extractive Sector Transparency Measures Act.

# We believe in having active dialogue with our stakeholders.

## ADVOCACY

Tourmaline believes having active dialogue with our stakeholders, including advocacy and public policy engagement, is crucial to our long-term success. We are pleased to provide transparent disclosure regarding our efforts to ensure our advocacy is appropriate and balances the needs of our stakeholders.

### Policy Discussions and Disclosure

Tourmaline believes open communication and collaboration are crucial to optimal government policy development and decision-making, and ultimately benefit all stakeholders, including our own. Tourmaline participates in a vast array of policy discussions that are relevant to our business. This engagement occurs in a number of ways, including via the efforts of the two lobbyist consultant firms we have engaged. We encourage the development of policies that provide certainty and consistency for the energy sector.

### Transition Policies

Tourmaline engages with the federal and provincial governments in respect to climate policy regarding pricing, offset generation, benchmarking and other items. Tourmaline believes carbon taxes and emission

regulations must result in meaningful reductions in greenhouse gas emissions while ensuring the competitiveness of the oil and gas sector in Canada.

### Political Contributions

Tourmaline did not donate to any political organizations in 2019.

### Industry Associations

As part of our engagement with various levels of government across jurisdictions, Tourmaline works actively with numerous industry associations. Though Tourmaline may sometimes hold different positions than those ultimately adopted by associations, we believe industry associations are beneficial because they do, on the whole, promote public policy that is mutually beneficial to our stakeholders.



# Performance Data



## Performance Data

	2017	2018	2019
<b>Production</b>			
Sales gas (MMcfd)	1,221,529	1,305,025	1,413,160
Liquids (bbl/d)	38,737	47,540	55,338
boe/d	242,325	265,044	290,865
<b>Energy Efficiency</b>			
Direct energy consumption (GJ)	20,578,659	21,678,813	23,611,159
<b>Emissions Restated<sup>1</sup></b>			
GHG emissions intensity (direct) (1000 tonnes CO <sub>2</sub> e/boe)	0.0156	0.0185	0.0189
GHG emissions intensity (direct + indirect) (tonnes CO <sub>2</sub> e/boe)	0.0177	0.0191	0.0196
GHG emissions intensity (direct + indirect) (1000 tonnes CO <sub>2</sub> e/m <sup>3</sup> OE)	0.1113	0.1202	0.1235
Direct GHG emissions (tonnes CO <sub>2</sub> e)	1,381,730	1,790,024	2,002,814
Indirect GHG emissions (tonnes CO <sub>2</sub> e)	183,180	58,568	81,849
Nitrogen oxides (NO <sub>x</sub> ) (tonnes)	7,984	7,229	6,191
Sulphur dioxide (SO <sub>2</sub> ) (tonnes)	712	846	982
Methane emissions (tonnes CO <sub>2</sub> e)	186,131	547,396	585,069
Flared gas (1000m <sup>3</sup> )	2,069	759	644
Vented gas (1000m <sup>3</sup> )	245	99	75
<b>Spill Prevention</b>			
Reportable spills (number)	14	13	10
Total volume of reportable spills (m <sup>3</sup> )	148.4	65.33	78.25
Number of fines and penalties	0	0	0
Average reportable spill (m)	10.6	5.0	7.8
<b>Water Management<sup>2</sup></b>			
Total water used for fracturing (m <sup>3</sup> )	1,753,634	1,477,515	1,402,698
Total recycled water used (m <sup>3</sup> )	918,218	765,181	859,369
Total fresh water used (m <sup>3</sup> )	835,415	712,334	543,329

## Performance Data (continued)

	2017	2018	2019
Total number of wells	292	237	203
Water per well (m <sup>3</sup> )	6,006	6,234	6,910
Fresh water per well (m <sup>3</sup> )	2,861	3,006	2,676
Frac flowback water produced (m <sup>3</sup> ) <sup>3</sup>	438,409	343,500	384,350
Frac flowback water recycled (m <sup>3</sup> ) <sup>3</sup>	416,488	326,325	365,133
Frac flowback water disposed (m <sup>3</sup> ) <sup>3</sup>	21,920	17,175	19,218
Percentage frac flowback water recycled (%)	95%	95%	95%
<b>Reclamation</b>			
Producing wells (gross)	2,258	2,332	2,541
Inactive wells (gross)	496	639	642
Abandoned (gross)	5	6	2
Reclaimed - certificate received	0	2	1
<b>Safety</b>			
Recordable injuries (number)			
Employee	0	0	0
Contractors	50	44	41
Recordable injury frequency (injuries/200,000 work hours)			
Employee	0	0	0
Contractors	0.89	1.02	0.94
Lost time injuries (number)			
Employee	0	0	0
Contractors	12	5	6
Lost time injury frequency (injuries/200,000 work hours)			
Employee	0	0	0
Contractors	0.21	0.12	0.14
Fatalities (employee and contractor)	0	0	0

## Performance Data (continued)

	2017	2018	2019
<b>People</b>			
Total employees	210	237	243
Total staff (employees and contractors)	429	464	484
Production per employee (boed/person)	1,154	1,118	1,197
Production per staff (employee and contractors) (boed/person)	565	571	601
Voluntary turnover (number)	6	2	6
Gender diversity of employees (% women)	35%	37%	37%
Voluntary turnover (%)	3%	1%	2%
Education and training	\$94,686	\$264,099	\$475,261
Education and training per employee	\$451	\$1,114	\$1,956
<b>Donations</b>			
Total donations	\$557,169	\$2,496,034	\$1,086,517
<b>Value Distributed (\$Millions)</b>			
Suppliers <sup>4</sup>	\$1,810	\$1,833	\$1,742
Providers of capital <sup>5</sup>	\$44	\$152	\$187
Governments <sup>6</sup>	\$139	\$132	\$125
Employees <sup>7</sup>	\$62	\$65	\$70
Landowners <sup>8</sup>	\$24	\$21	\$30
Communities <sup>9</sup>	\$2	\$3	\$3

<sup>1</sup>Emissions are calculated using locally regulated methodology or locally recognized industry standards. Refer to page 23 regarding the restatement disclosure.

<sup>2</sup>Water management data was not recorded for NEBC and Spirit River prior to 2015. 2018 water volumes restated based on internal data verification that was performed in 2021.

<sup>3</sup>Frac flowback data excludes oil operations.

<sup>4</sup>Economic value distributed to suppliers comprises all operating, transportation and general and administrative expenses as well as capital expenditures that are paid to suppliers other than employees, landowners, governments and for purposes of charitable donations. All figures are presented on an accrual basis.

<sup>5</sup>Economic value distributed to providers of capital includes interest expense paid in cash and cash dividends paid.

<sup>6</sup>Economic value distributed to governments includes Crown royalty obligations, corporate income taxes, property and business taxes, carbon taxes, provincial sales taxes as well as consideration paid to governments for surface rights of Crown-owned land and government licenses, fees and permits. Excludes contributions to government pension plans and government employment insurance premiums made on behalf of employees. All figures are presented on an accrual basis. Due to the use of different reporting frameworks, figures presented will not necessarily conform to those presented under the Extractive Sector Transparency Measures Act (ESTMA).

<sup>7</sup>Economic value distributed to employees comprises salaries, bonus and employee benefits. Employee salaries and benefits includes stock option benefits and amounts paid to governments on behalf of employees.

<sup>8</sup>Economic value distributed to landowners comprises land access payments and royalty obligations to individuals and corporations associated with non-Crown owned lands.

<sup>9</sup>Economic value distributed to communities comprises contributions to Indigenous communities, charitable and not-for-profit organizations.

# Disclosures

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# SASB

## SPECIFIC SUSTAINABLE INDUSTRY CLASSIFICATION SYSTEM: SASB EM-EP – OIL & GAS EXPLORATION & PRODUCTION

Accounting Metric	Unit of Measure	Code	Location in Report (Pages)
<b>Greenhouse Gas Emissions</b>			
Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations	Metric tonnes CO <sub>2</sub> -e (t), Percentage (%)	EM-EP-110a.1	19, 44
Amount of gross global Scope 1 emissions from: (1) flared hydrocarbons, (2) other combustion, (3) process emissions, (4) other vented emissions, and (5) fugitive emissions	Metric tonnes CO <sub>2</sub> -e	EM-EP-110a.2	44
Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	n/a	EM-EP-110a.3	19-27
<b>Water Management</b>			
(1) Total fresh water withdrawn, (2) total fresh water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Thousand cubic meters (m <sup>3</sup> ), Percentage (%)	EM-EP-140a.1	24, 28 No operations are in regions with high or extremely high baseline water stress
Volume of produced water and flowback generated; percentage (1) discharged, (2) injected, (3) recycled; hydrocarbon content in discharged water	Thousand cubic meters (m <sup>3</sup> ), Percentage (%), Metric tonnes (t)	EM-EP-140a.2	44-45
Percentage of hydraulically fractured wells for which there is public disclosure of all fracturing fluid chemicals used	Percentage (%)	EM-EP-140a.3	100% <sup>1</sup>
Percentage of hydraulic fracturing sites where ground or surface water quality deteriorated compared to a baseline	Percentage (%)	EM-EP-140a.4	None noted (0%)
<b>Biodiversity Impacts</b>			
Description of environmental management policies and practices for active sites	n/a	EM-EP-160a.1	30, 31, 33, 41
Number and aggregate volume of hydrocarbon spills, volume in Arctic, volume impacting shorelines with ESI rankings 8-10, and volume recovered	Number, Barrels (bbls)	EM-EP-160a.2	44
Percentage of (1) proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat	Percentage (%)	EM-EP-160a.3	(1) 22% (2) 16%

<sup>1</sup>Please refer to [www.fracfocus.ca/en](http://www.fracfocus.ca/en)

## SASB (continued)

Accounting Metric	Unit of Measure	Code	Location in Report (Pages)
<b>Business Ethics &amp; Transparency</b>			
Percentage of (1) proved and (2) probable reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Percentage (%)	EM-EP-510a.1	0%
Description of the management system for prevention of corruption and bribery throughout the value chain	n/a	EM-EP-510a.2	41
<b>Workforce Health &amp; Safety</b>			
1) Total recordable incident rate (TRIR), (2) fatality rate, (3) near miss frequency rate (NMFR), and (4) average hours of health, safety, and emergency response training for (a) full-time employees, (b) contract employees, and (c) short-service employees	Rate, Hours (h)	EM-EP-320a.1	45 Tourmaline did not report item 3 and item 4
Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle	n/a	EM-EP-320a.2	33, 39
<b>Activity Metrics</b>			
Production of: (1) oil, (2) natural gas, (3) synthetic oil, and (4) synthetic gas	Thousand barrels per day (Mbbbl/day); Million standard cubic feet per day (MMscf/day)	EM-EP-000.A	44
Number of offshore sites	Number	EM-EP-000.B	None noted (0)

# TCFD

Category	Disclosure	Location in Report (Pages)
Governance (a)	Board oversight	19
Governance (b)	Management's role	19
Strategy (a)	Identification of climate-related risks and opportunities	20-21
Strategy (b)	Impact of climate-related risks and opportunities	20-21
Strategy (c)	Scenario analysis and strategy resilience	19
Risk Management (a)	Risk identification and assessment process	20
Risk Management (b)	Risk management process	20
Risk Management (c)	Risk integration	20
Metrics and Targets (a)	Metrics	22
Metrics and Targets (b)	GHG emissions	44
Metrics and Targets (c)	Targets and performance	22

# GRI

## General Standard Disclosures

## Location in Report (Pages)

Strategy & Analysis		
102-1	Name of the organization	5
102-2	Activities, brands, product and services	5
102-3	Location of headquarters	5
102-4	Location of operations	5
102-5	Ownership and legal form	5
102-6	Markets served	5
102-7	Scale of the organization	5
102-8	Information on employees and other workers	45-46
102-9	Supply chain	46
102-11	Precautionary principle or approach	39-40
102-12	External initiatives	42
Strategy		
102-14	Statement from senior decision-maker	3
102-15	Mechanisms for advice and concerns about ethics	41
Ethics & Integrity		
102-16	Values, principles, standards and norms of behavior	41
102-17	Mechanisms for advice and concerns about ethics	41
Governance		
102-18	Governance structure	38, 2021 Information Circular
102-19	Delegating authority	38, 2021 Information Circular
102-20	Executive-level responsibility for economic, environmental, and social topics	38, 2021 Information Circular
102-21	Consulting stakeholders on economic, environmental and social topics	38
102-22	Composition of the highest governance body and its committees	2021 Information Circular
102-23	Chair of the highest governance body	2021 Information Circular
102-24	Nominating and selecting the highest governance body	2021 Information Circular

## GRI (continued)

### General Standard Disclosures

### Location in Report (Pages)

102-26	Role of highest governance body in setting purpose, values, and strategy	2021 Information Circular
102-27	Collective knowledge of highest governance body	38, 2021 Information Circular
102-28	Evaluating the highest governance body's performance	2021 Information Circular
102-29	Identifying and managing economic, environmental and social topics	39, 40, 2020 AIF
102-30	Effectiveness of risk-management processes	39
102-31	Review of economic, environmental, and social topics	19-36
102-32	Highest governance body's role in sustainability reporting	39-40
102-33	Communicating critical concerns	41
102-35	Remuneration policies	2021 Information Circular
102-36	Process for determining remuneration	2021 Information Circular
102-37	Stakeholders' involvement in remuneration	2021 Information Circular
102-38	Annual total compensation ratio	2021 Information Circular
102-39	Percentage increase in annual total compensation ratio	2021 Information Circular
102-40	List of stakeholder groups	11
102-41	Collective bargaining agreements	Tourmaline did not have any collective bargaining agreements
102-42	Identifying and selecting stakeholders	11
102-43	Approach to stakeholder engagement	11
102-44	Key topics and concerns raised	10
<b>Reporting Practices</b>		
102-45	Entities included in consolidated financial statements	5
102-46	Defining report content and topic boundaries	9
102-50	Reporting period	9
102-52	Reporting cycle	9
102-53	Contact point for questions regarding the report	55-56
102-54	Claims of reporting in accordance with GRI Standards	This report references the GRI
102-56	External assurance	Standard but has not met all criteria to be in accordance

## GRI (continued)

### General Standard Disclosures

### Location in Report (Pages)

GRI 200 - Economic Topics		
201-1	Direct economic value generated and distributed	46
201-3	Defined benefit plan obligations and other retirement obligations and other retirement plants	Tourmaline does not have any defined benefits plan or other retirement obligations
GRI 205 - Anti-Corruption		
205-2	Communication and training about anti-corruption policies and procedures	41
GRI 206 - Anti-Competitive Behavior		
206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	Tourmaline was not involved in any legal actions related to anti-competitive practices
GRI 302 - Energy		
302-1	Energy consumption within the organization	44
302-3	Energy intensity	44
302-4	Reduction of energy consumption	22-25
GRI 303 - Energy		
303-3	Water withdrawal by source	44-45
GRI 305 - Emissions		
305-1	Direct (Scope 1) GHG emissions	44
305-2	Energy indirect (Scope 2) GHG emissions	44
305-4	GHG emission intensity	44
305-7	Nitrogen oxides (NO <sub>x</sub> ), sulphur oxides (SO <sub>x</sub> ), and other significant air emissions	44

## Forward-Looking Statements

Certain information regarding Tourmaline set forth in this document, including management's assessment of the Company's future plans and operations, contains forward-looking statements that involve substantial known and unknown risks and uncertainties. The use of any of the words "anticipate", "continue", "estimate", "expect", "may", "will", "project", "should", "believe" and similar expressions are intended to identify forward-looking statements. Such statements represent Tourmaline's internal projections, forecasts, estimates or beliefs concerning, among other things, an outlook on the estimated amounts and timing of capital investment or expenditures, production, cash flow and revenues or other expectations, beliefs, plans, objectives, assumptions, intentions or statements about future events or performance. These statements are only predictions and actual events or results may differ materially. Although Tourmaline believes that the expectations reflected in the forward-looking statements are reasonable, it cannot guarantee future results, levels of activity, performance or achievement since such expectations are inherently subject to significant business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause Tourmaline's actual results to differ materially from those expressed or implied in any forward-looking statements made by, or on behalf of, Tourmaline.

In particular, forward-looking statements included in this document include, but are not limited to, statements with respect to: the size of, and future net revenues and cash flow from, crude oil, NGL (natural gas liquids) and natural gas reserves; future prospects; the focus of and timing of capital expenditures; the performance characteristics of the Company's crude oil, NGL and natural gas properties; crude oil, NGL and natural gas production levels and product mix; Tourmaline's future operating and financial results; emissions intensity, water use, spills, site reclamation, the health, safety, and environment of our employees and contractors and the attraction and the retention of our employees; community and stakeholder engagement and investment; Aboriginal relations and procurement practice.

These forward-looking statements are subject to numerous risks and uncertainties, most of which are beyond the Company's control, including the impact of general economic conditions; industry conditions; liabilities inherent in crude oil and natural gas operations; environmental risks; hazards such as fire, explosion, blowouts, cratering, and spills, any of which could result in substantial damage to wells, production facilities, other property and the environment or in personal injury; and the other risks considered under "Risk Factors" in Tourmaline's most recent annual information form available at [www.sedar.com](http://www.sedar.com).

Management has included the above summary of assumptions and risks related to forward-looking information provided in this document in order to provide shareholders with an understanding of Tourmaline's future operations and such information may not be appropriate for other purposes. Tourmaline's actual results, performance or achievement could differ materially from those expressed in, or implied by, these forward-looking statements and, accordingly, no assurance can be given that any of the events anticipated by the forward-looking statements will transpire or occur, or if any of them do so, what benefits that the Company will derive therefrom. Readers are cautioned that the foregoing lists of factors are not exhaustive.

These forward-looking statements are made as of the date of this document and the Company disclaims any intent or obligation to update publicly any forward-looking statements, whether as a result of new information, future events or results or otherwise, other than as required by applicable securities laws.

## Directors

### **Michael Rose**

Chairman, President and Chief Executive Officer  
Tourmaline Oil Corp., Calgary, Alberta

### **William Armstrong**

President and Chief Executive Officer  
Armstrong Oil & Gas Inc., Denver, Colorado

### **Lee Baker**

Independent Businessman  
Calgary, Alberta

### **John Elick**

Independent Businessman  
Calgary, Alberta

### **Andrew MacDonald**

Independent Businessman  
Vancouver, British Columbia

### **Jill Angevine**

Managing Director, Palisade Capital  
Calgary, Alberta

### **Brian Robinson**

Vice President, Finance and Chief Financial Officer  
Tourmaline Oil Corp., Calgary, Alberta

### **Lucy Miller**

Independent Businesswoman  
Calgary, Alberta

### **Ron Wigham**

Independent Businessman  
Calgary, Alberta

### **Janet Weiss**

Independent Businesswoman  
Anchorage, Alaska

## Officers

### **Michael Rose**

Chairman, President and Chief Executive Officer

### **Brian Robinson**

Vice President, Finance and Chief Financial Officer

### **Allan Bush**

Vice President  
Chief Operating Officer

### **Colin Frostad**

Vice President, Exploration

### **Drew Tumbach**

Vice President, Land and Contracts

### **Earl McKinnon**

Vice President, Operations

### **Scott Kirker**

General Counsel

### **Sherra Aspin**

Vice President, Marketing

### **Sarah Tait**

Controller

### **Katie Beck**

Secretary



3700, 250 6th Ave SW, Calgary, Alberta T2P 3H7

[tourmalineoil.com](http://tourmalineoil.com)

