

# BUILDING A SUSTAINABLE CANADIAN ENERGY BUSINESS COAST TO COAST



## 2022 ENVIRONMENT, SOCIAL, & GOVERNANCE REPORT





# ABOUT THIS REPORT

This 2022 Environmental, Social, and Governance (“ESG”) Report is Headwater Exploration Inc.’s (“Headwater”) inaugural ESG Report. The information within this report is intended as a resource for our stakeholders, illustrating our sustainability journey as we work to build a sustainable business. This ESG Report details activities, initiatives, and progress metrics from January 1, 2021 to December 31, 2021. It was compiled using the Sustainability Accounting Standards Board (“SASB”) Standard for Oil & Gas Exploration & Production (2018-10) as a guide. The information herein was reviewed by Headwater’s Board of Directors (the “Board”) and senior management.

The terms Headwater, HWX, our, we, us, the Company, the Organization, and the Corporation refer to Headwater Exploration Inc.

Headwater’s ESG disclaimers are included at the end of this ESG Report; for additional information or any questions regarding Headwater’s sustainability journey, contact: [info@headwaterexp.com](mailto:info@headwaterexp.com).



# LETTER FROM OUR CEO AND PRESIDENT

Headwater is very pleased to issue our inaugural ESG report highlighting our ability to deliver responsibly produced energy and offer long term sustainable value for our shareholders. We are incredibly proud of our employees and the culture they have created. This culture is founded on honesty, respect, and integrity. We integrate the best interests of our people, communities, and the environment into our pursuit of creating value for our shareholders and our country.

2021 was our first year of operation in the Clearwater play, located in Alberta. We grew our corporate production by more than 200% while reducing corporate emissions intensity by approximately 50%. Over 1 million working man hours were required to produce these results and we can proudly say we finished 2021 without any lost time accidents and materially outperformed our total reportable incident frequency target.

Headwater is passionate about reducing our environmental footprint and being a responsible neighbor within our local communities. Throughout the year we implemented technologies including oil-based drilling fluid recycling practices and the use of saline water sources for waterflooding. Combined, these technologies took our corporate fresh water usage to less than 5 liters of water per barrel of oil produced, an 80% reduction throughout 2021. In addition, more than 5% of the capital spent in 2021 was awarded to local Indigenous companies; these companies are important to Headwater, and we will continue to build these relationships in 2022 and beyond. We also established a strong presence in our local communities by growing our local workforce.

As Headwater continues to grow, we recognize the importance of maintaining a foundation of strong governance practices with a focus on continual improvement. Headwater's governance is demonstrated through compensation aligned with shareholders and ESG-related improvements, risk management and Board diversity with a focus on shareholder value creation and free cash flow generation. As part of Headwater's commitment to increasing diversity, we have formalized our commitment to increase female representation on the Board to 30% by the 2023 annual general meeting.

We are very proud of the organization we have built and look forward to continuing to provide responsibly produced Canadian energy to the world. On behalf of the Board and management team, we would like to say thank you to our staff, Indigenous partners, local communities, service providers and investors for your continued support.

Sincerely,



**NEIL ROSZELL, P.Eng.**  
CEO & Chairman



**JASON JASKELA, P.Eng.**  
President & COO

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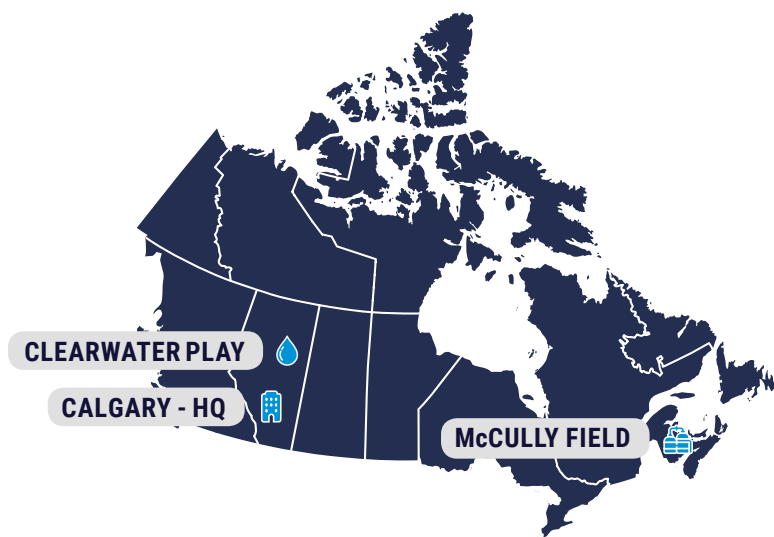
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# ABOUT US

Headwater is a TSX-listed, growth oriented Canadian natural resource company. Headwater is actively engaged in development, production, and exploration of petroleum and natural gas. We are committed to delivering strong corporate returns while striving for continuous improvement in sustainability-related elements. We are actively working to reduce our environmental impacts, while improving our asset quality, economic performance, strength, and resiliency.

From our headquarters in Calgary, we are focused on developing our high-quality heavy oil production, reserves, and lands in the prolific Clearwater play in Northern Alberta and our low decline natural gas production and reserves in the McCully field near Sussex, New Brunswick.

Headwater does not own or operate assets outside of Canada and all sites are on land, so there is no deep-water drilling. We have no areas of operation in conflict and are not involved in any significant incidents or controversies.



# 2021 OPERATIONAL HIGHLIGHTS

## SITES

- 35 Producing Sites
- Alberta:
  - 19 Sites
- New Brunswick:
  - 16 Sites

## ACREAGE

- Total of 440,036 gross acres
  - 47.3% in AB
  - 49.3% in NB
  - 3.4% in SK
- Total of 419,989 net acres
  - 49.6% in AB
  - 46.9% in NB
  - 3.5% in SK

## FIELDS

- Marten Hills: 250 km north of Edmonton, AB (Year-round operations)
- McCully Field: 10 km northeast of Sussex, NB (Winter operations, Nov – April)

## REVENUE & PRODUCTION

- \$190.94MM generated sales revenue\*
- 7,393 boe/d
  - 6,665 bbls/d Heavy Oil
  - 4.4 mmcf/d Natural Gas
  - 2 bbls/d NGL
- 2021 average production of 7,393 boe/d is more than a 700% increase from Headwater's 2020 average production of 882 boe/d
- Grew production from 1,646 boe/d in Q4 2020 to 10,449 boe/d in Q4 2021
- Initiated a waterflood pilot
- Commissioned Marten Hills joint gas processing facility and associated pipeline infrastructure in Q3 2021
- Drilled 51 crude oil wells, 4 source wells, & 3 stratigraphic test wells
- Started construction on a major oil processing facility

## EGRESS









- AB Gas: Transcanada Pipeline
- AB Oil: Rangeland Marten Hills Pipeline to Plains Rainbow Pipeline
- NB: Connects to the northeast US Gas Market via the Maritimes and Northeast Pipeline

\*Per Headwater's audited consolidated annual 2021 financial statements



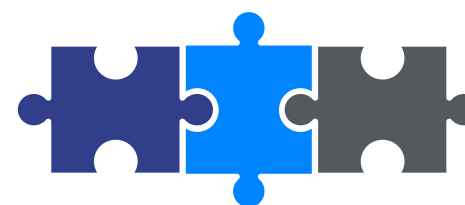
# HEADWATER'S SUSTAINABILITY VISION

Headwater's sustainability vision is built on the interaction between technological innovation, sustainable infrastructure, and increased resource productivity. This is illustrated through our operational strength, capital discipline, and relentless focus on economic, environmental, social, and governance performance. It is demonstrated in our environmental protection, health and safety, and community engagement as we actively work to reduce our impacts on the environment while we responsibly develop our assets. Headwater is a young and evolving company currently experiencing rapid growth. We look forward to establishing more targets and baselines for our business as we evolve.

HEADWATER'S FOCUS	ACTIONS
 Emissions Reduction	Invested \$51.5MM on gas conservation infrastructure reducing emissions in 2021 by approximately 50% and qualified for Emissions Reduction Fund ("ERF") funding
 Environmental Footprint	Top decile asset retirement obligation ("ARO") with a liability management ratio ("LMR") of ~38 as of December 31, 2021 and an inactive well count of 23
 Fresh Water Usage	Utilizing recycled oil for drilling and saline sources for waterflood reducing fresh water usage by 80%
 Safety	A culture focused on accountability, leading indicators and a safe workplace with no lost time incidents in 2021
 Indigenous Engagement	Continuous and committed integration with Indigenous communities and businesses in our operating areas
 Community Engagement	Engaging with communities around our field operations and head office with volunteer days and an active donation budget
 Diversity on Board & Workforce	Board diversification commitment to increase women on the Board to 30% by the 2023 AGM
 Governance	Ensure the Board and management team are committed to corporate responsibility and ethical business conduct

## HEADWATER'S BELIEFS:

- ✓ Safe Work Environment & Operations
- ✓ Environment & Climate Responsibility
- ✓ Sustainable Growth & Development
- ✓ Corporate Governance & Ethical Conduct
- ✓ Inclusion, Diversity, & Community Involvement



## OUR ESG FRAMEWORK



### ENVIRONMENT

- Emissions Management
- Fresh Water Management
- Biodiversity Impact Management
- Spill Management
- Waste Management
- Regulatory Management



### SOCIAL

- Health & Safety
- Emergency Response
- Indigenous Engagement & Relations
- Community Engagement
- Our People
- Diversity & Inclusion



### GOVERNANCE

- Management Team
- Risk Management
- Board of Directors
- Responsible Governance



# ENVIRONMENT

## OUR ENVIRONMENT. OUR FUTURE.

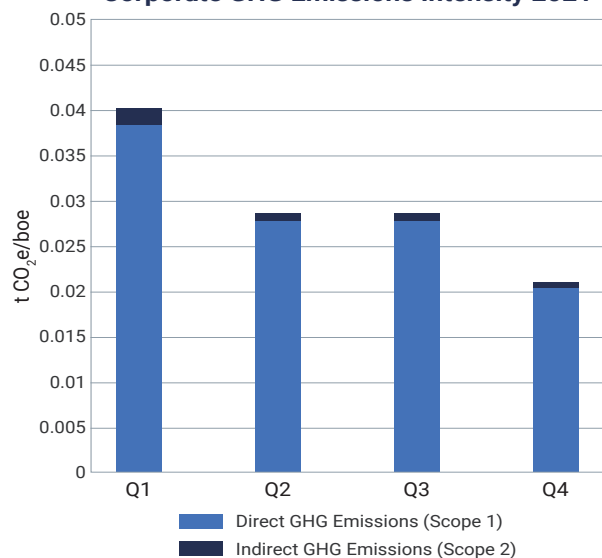
Headwater is committed to conducting our activities in an environmentally responsible manner. We start by including and evaluating environmental considerations in the early planning of all our activities, including emissions, wetlands, watercourses, sensitive wildlife, and potential rare plants. We believe that sound environmental practices translate into improved efficiency, and reduces impacts on the environment in the areas we operate.



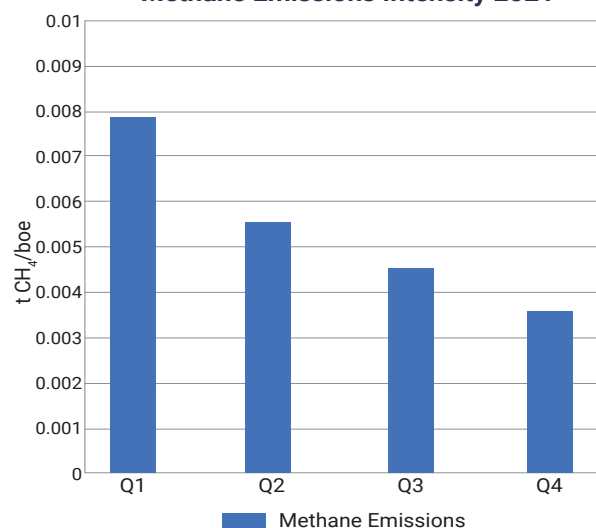
# EMISSIONS MANAGEMENT

Headwater's production operations and activities generate Greenhouse Gas ("GHG") emissions, including carbon dioxide (CO<sub>2</sub>), nitrous oxides (N<sub>2</sub>O), and methane (CH<sub>4</sub>). GHG emissions contribute to the global stock of GHG emissions, impacting climate change. As part of our commitment to the protection of the environment, we are working to reduce our GHG emissions and our emissions intensity, utilizing innovative technology to reduce and eliminate fugitive emissions, venting, and flaring at Headwater sites. Our direct emissions (Scope 1) are from fuel combustion (including fuel gas, diesel, and propane), flaring, venting, fugitive emissions, and our indirect emissions (Scope 2) are from utility-supplied power for our offices and McCully field assets. Headwater's emissions are reported based on the equity-share approach. Our emissions program monitors, measures, collects, analyzes, and reports our emissions in compliance with site-specific and provincial regulatory requirements. Headwater is engaging in direct and indirect discussions with both the Alberta and Federal governments regarding changes to current emission policies. We are evaluating increased gas conservation and unconventional methods of emissions reduction to meet current and potential requirements. We plan to release emissions targets in the future as we progress and continue our understanding of our asset base.

**Corporate GHG Emissions Intensity 2021**



**Methane Emissions Intensity 2021**



## HEADWATER FACTS

- Our McCully Gas Plant in Penobsquis, New Brunswick is designed to be a zero-emission facility; under normal operating conditions, there are no releases of contaminants into the environment.
- In 2021, Headwater voluntarily joined Alberta's Technology Innovation and Emissions Reduction ("TIER") program.



**50%** approximate drop in CO<sub>2</sub>e intensity

## EMISSIONS REDUCTION SPOTLIGHT

Headwater constructed a gathering system and commissioned a joint-interest gas plant to conserve and process natural gas streams from Headwater well sites in Marten Hills.

This commissioning resulted in an approximate 50% reduction in Headwater's CO<sub>2</sub>e emissions intensity per barrel of oil equivalent produced over the 2021 calendar year and qualified Headwater to participate in Natural Resources Canada's Emissions Reduction Fund.

The ERF is a program that reimburses up to 75% of costs on a proven emissions reduction project.



# FRESH WATER MANAGEMENT

Headwater uses minimal fresh water in our operations. In early 2021, Headwater transitioned away from water-based mud (“WBM”) to a recycled oil-based mud (“OBM”) in our drilling strategy. In addition, Headwater uses saline water from drilled source wells and produced water in our waterflood program. All wells are open hole drills and do not require hydraulic fracturing. We do not operate in any areas of significant water stress.

WATER	
Fresh Water Usage	28,881 m <sup>3</sup>
Fresh Water Intensity	0.0100 m <sup>3</sup> /boe

## OIL-BASED MUD

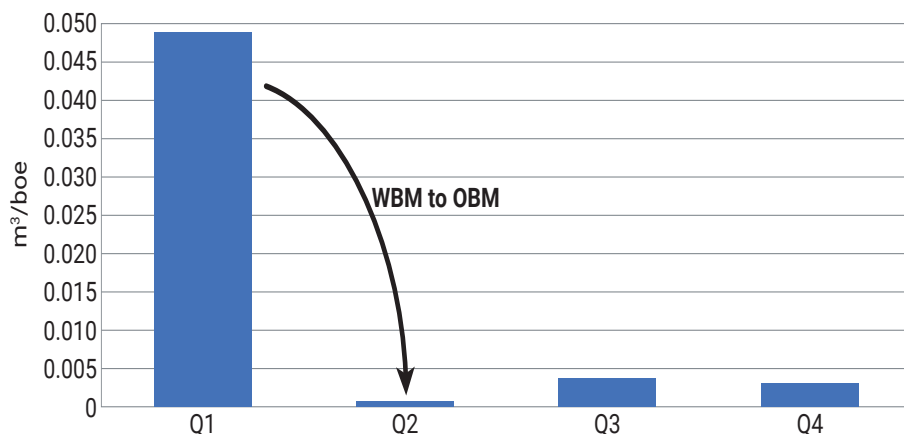
Headwater utilizes OBM when drilling crude oil wells in the Marten Hills field instead of WBM. Fresh water usage intensity decreased by greater than 80% from Q1 2021 with the change in drilling strategy. The flowback oil is recycled and reused within the program. This results in a reduced environmental footprint and reduced cost for the company.



**Almost 16,000 m<sup>3</sup> of oil recycled and reused**

**80% Drop in fresh water use in 2021 due to OBM**

2021 Fresh Water Usage Intensity



## WATERFLOOD



Headwater’s Marten Hills waterflood utilizes saline and produced water, without any fresh water usage. Saline water source wells are used as makeup volume to support offsetting oil production. Headwater injects water in the lowest portion of the reservoir to promote a bottom-up water drive, increasing the overall recovery factor. Performance of existing wells in the scheme area confirms significant oil in place volumes that can be better swept through water injection. Injector configuration will consist of quad leg horizontal wells approximately 25 metres laterally and 10 metres below the currently producing wells. The incremental recovery is achieved with minimal surface disturbance as existing wells pads are utilized for waterflood operations.



# BIODIVERSITY IMPACT MANAGEMENT

Headwater's Environmental Management Manual ("EMM") details our environmental protection planning measures. We are committed to minimizing any potential impacts associated with preparing a site for construction, exploration and production. Headwater's EMM follows regulatory and industry standards for conducting ecological assessments, including the review of wildlife, species at risk and migratory patterns. We do not currently operate within any sensitive areas, but should conditions change, we intend to respond to protect ecosystems and species at risk.



## HEADWATER'S POTENTIAL IMPACTS MINIMIZATION PHILOSOPHY

### ✓ MINIMIZE SURFACE DISTURBANCES

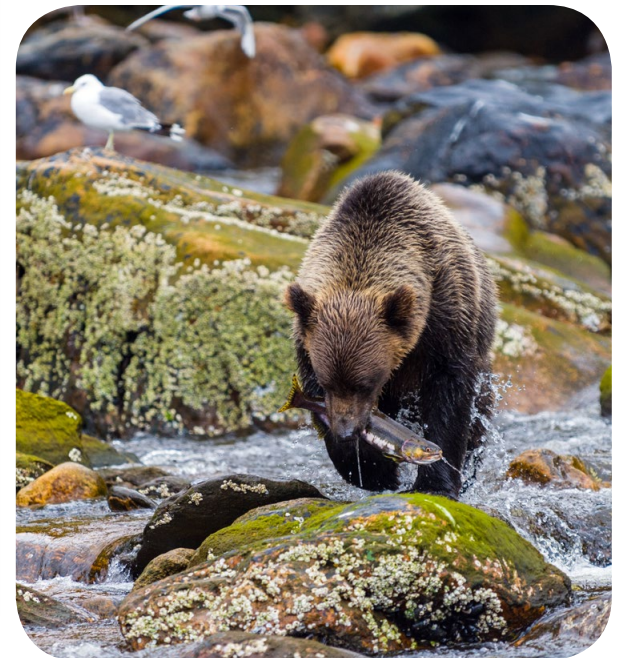
- Clearing of vegetation will be kept to a minimum and undertaken in a manner that reduces the potential impact of erosion, flooding, and soil saturation

### ✓ AVOID HARMFUL INTERACTION WITH FISH AND IMPACT TO THEIR HABITATS

- Disturbances to waterways and fish habitats will be kept to a minimum
- Develop erosion and sediment control plans

### ✓ MAINTAIN WILDLIFE CORRIDORS AND MINIMIZE SENSORY DISTURBANCES TO WILDLIFE

- Work activities will be scheduled during periods of the lowest sensitivity to wildlife





# SPILL MANAGEMENT

Headwater follows rigorous standards to ensure that accidental spills or releases do not occur. In the event of such an occurrence, Headwater personnel are trained in spill response, reporting, and incident investigation to determine the root cause and corrective actions. Headwater's Spill Response Manual ("SRM") provides spill response details to help Headwater and its contractors anticipate and plan for situations that may not otherwise be contemplated.

REPORTABLE SPILLS	COUNT
2021 Target	3
2021 Actual	2
2022 Target	3

No spill had a lasting impact on the environment based on testing from a 3rd party environmental company

# PROACTIVE PIPELINE INTEGRITY

- Emulsion & water pipelines are built with non corrosive materials--composite or steel lined with high-density polyethylene
- All pipelines in Alberta are newly constructed
- Visual inspections and pressure tests were completed with the commissioning of each pipeline
- Annual 3rd party inspections of Cathodic Protection System and corrosion coupons
- Weekly pigging on all lines
- Monitored with low pressure indicators and automatic emergency shutdowns



Outperformed our  
target for spill count

## HEADWATER'S SPILL MANAGEMENT APPROACH

- ✓ Ensure the health and safety of Headwater employees and contractors
- ✓ Train employees and contractors on the requirements of the SRM
- ✓ Audit major contractor spill response plans and their associated training
- ✓ Regularly audit spill kits to confirm and ensure they are kept stocked with items needed to respond to a spill
- ✓ Active member of Western Canadian Spill Co-op

## HEADWATER'S SPILLS & RELEASES RESPONSE

- ✓ Implement the SRM in the event of a spill or release
- ✓ Determine the appropriate response and implement it
- ✓ Follow applicable regulatory reporting requirements
- ✓ Mobilize the response team
- ✓ Complete a spill and hazard assessment
- ✓ Undertake surveillance and/or countermeasures, including monitoring
- ✓ Ensure containment and recovery
- ✓ Conduct reclamation of location to original condition

# WASTE MANAGEMENT



Headwater recycles 60%  
of our drilling fluid

All projects and activities (e.g., drilling and completions, facility construction, and production) generate waste. Headwater's Waste Management Plan ("WMP") focuses on minimizing waste at the source through reduction, reuse, recycling, and recovery activities. For waste streams that cannot be reused or recycled, Headwater ensures they are manifested, treated, disposed of, and tracked in accordance with provincial regulatory requirements.

## HEADWATER'S WASTE MANAGEMENT APPROACH

- ✓ Comply with applicable environmental laws and regulations
- ✓ Conduct operations in a manner that demonstrates respect for the quality of the environment
- ✓ Provide and promote training for employees, emphasizing individual responsibility for sound waste management
- ✓ Minimize and manage waste through recycling, recovery, and re-use
- ✓ Maintain corporate monitoring programs to ensure compliance with internal and external requirements





# REGULATORY MANAGEMENT

Our assets meet or exceed current industry safety, regulatory, and environmental standards in both Alberta and New Brunswick. We also collaborate with government and other organizations to develop and refine sustainable energy policies.

## LIABILITY MANAGEMENT RATIO

In Alberta, the Alberta Energy Regulator (“AER”) calculates a company’s LMR based on the organization’s deemed assets (production) divided by deemed liabilities (abandonment and reclamation costs). The LMR is a revolving calculation over time. In 2021, Headwater’s average LMR was 31.52 compared to the industry average LMR of 4.95. This means Headwater’s deemed asset value by the regulator is 31.52 times greater than our deemed liability.

### LMR STATISTICS

~32 average in 2021

~38 as of December 31, 2021

Compared to an industry average of ~5

## ASSET RETIREMENT OBLIGATION

We evaluate and manage Headwater assets from a viewpoint of our ARO.



**OUR ASSETS OUTWEIGH  
OUR LIABILITIES**

### ARO SPOTLIGHT AS OF DECEMBER 31, 2021

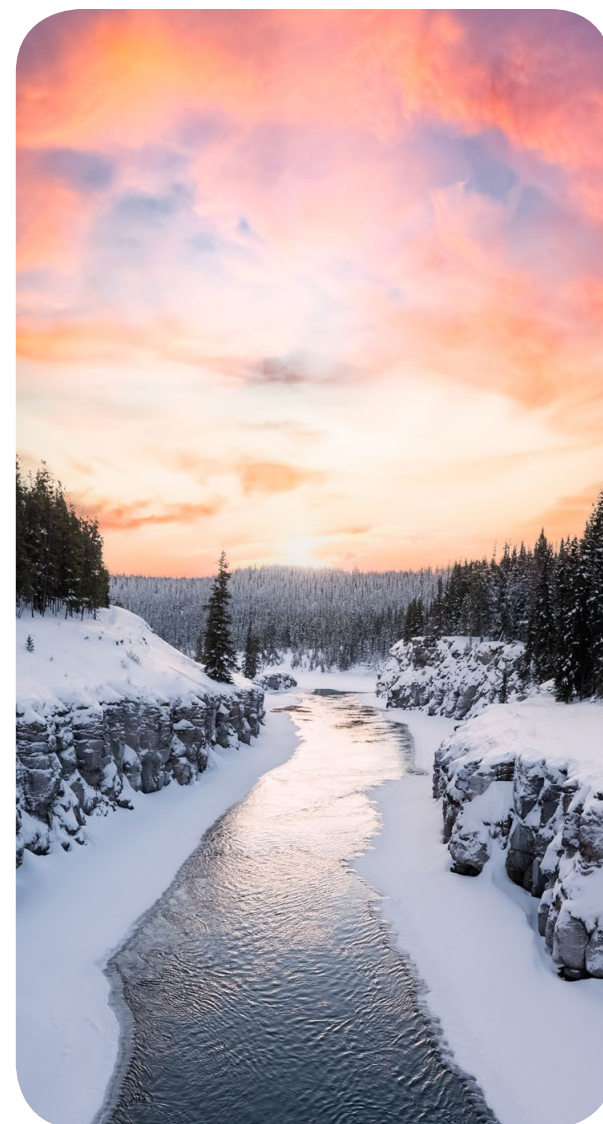
Pristine ARO of **\$27.6MM**

Total Well Count of **135 gross & 125.5 net**

Inactive Well Count of **23 gross & 21.5 net**

**Top Percentile in the Industry**

\*Includes abandoned, water source and stratigraphic wells.





# SOCIAL

## OUR PEOPLE. OUR FUTURE.

Headwater believes that our people and the relationships we've developed are essential to our inclusive culture and success.



# HEALTH & SAFETY

Our number one priority is to proactively protect the health and safety of all individuals associated with Headwater activities. Our goal is to provide a healthy, safe, and productive workplace with zero recordable incidents and injuries. We train our people to ensure they can conduct their jobs safely, know how to identify hazards, assess and control risks, report and investigate any potential incidents, identify corrective actions, and prevent future recurrences. By implementing and tracking leading indicators, such as hazard assessments, safe operating procedures, and inspections, we ingrain risk control and measurements into our daily activities. The result of our strong safety-focused culture is evident in lagging indicators with low reportable incidents and zero lost time injuries.

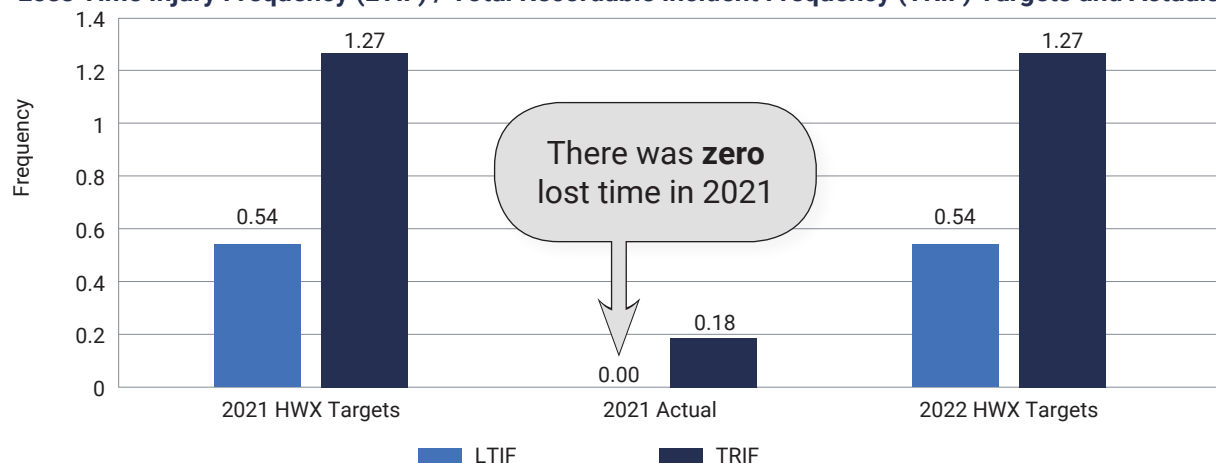


Zero lost time in 2021



2,000 General Safety Orientations filled out in 2021

Loss Time Injury Frequency (LTIF) / Total Recordable Incident Frequency (TRIF) Targets and Actuals



2021 HWX Actual Man hours **1,080,577**

2022 HWX Estimated Man hours **1,248,586**

## 2021 STATS

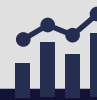


Safety Kick-off Meetings: **9**

Operations Safety Meetings: **20**

Hazard Identification: **>400**

Safety Inspections: **>1600**



## LTIF/TRIF 2021 ACTUALS

LTIF: **0.00** TRIF: **0.18**

**4X** below the Industry Average Rate

**80%** under Headwater's Target for 2021



## LTIF/TRIF 2022 TARGETS

LTIF: **0.54** TRIF: **1.27**

## HEALTH AND SAFETY POLICY

Identifies Headwater's commitments and the principles that form Headwater's Health and Safety Program

## SAFETY PROGRAM

Focuses on risk assessment, accident prevention, and emergency preparedness and response; it also includes standard operating procedures and various response plans for incidents of varying type

## SAFETY GOAL

Zero recordable incidents and injuries

## SAFETY MEMBERSHIPS

Alberta OneCall, ComplyWorks, Western Canadian Spill Co-op

# EXTERNAL EMERGENCY RESPONSE PLANS

Headwater is a member of various regulatory, safety and environmental programs. These resources guide Headwater on how we consistently and effectively respond to potential incidents which could impact the environment and communities we work in.

Our toll-free, 24-hour emergency lines provide the public, first responders, and regulators with immediate information from a live dispatcher.

# INTERNAL EMERGENCY RESPONSE PLANS

Our Emergency Response Plans (“ERPs”) are developed to effectively mitigate the impact of an incident or emergency on our staff, our stakeholders, the environment, and/or our assets. These ERPs are updated annually, and they provide clear instructions on the actions to be taken during an emergency. Headwater conducts regular training (tabletop exercise or mock training) to ensure all Headwater personnel understand and can execute their roles and responsibilities in the event of an emergency.



## IN 2021, WE CONDUCTED TWO ERP DRILLS

Drilling Operations ERP Drill: **Completed March 2021**

Headwater wide (Alberta and New Brunswick) Operations: **Completed October 2021**

## 24-HR EMERGENCY NUMBERS

Alberta:  
**1-833-390-1027**

New Brunswick:  
**1-506-433-3066**

## MEMBERSHIP PROGRAMS

- One Call
- Industrial Wildfire Control Plan
- Western Canadian Spill Co-op





# INDIGENOUS ENGAGEMENT & RELATIONS

Headwater's production operations and activities are within traditional First Nations and Metis lands in Alberta and New Brunswick. Headwater recognizes, values, and respects traditional cultures and the diversity of Canada's Indigenous and Metis communities. We actively engage with these communities building long-term relationships which includes qualified local Indigenous businesses in our supply chain. In addition, we support Indigenous employment opportunities.



**5%** of 2021 capital spend awarded to Indigenous companies



# COMMUNITY ENGAGEMENT & RELATIONS

Headwater is committed to supporting economic and social initiatives, which benefit our stakeholders. We are growing with the communities where we work by hiring local employees, sourcing local service providers and contractors, and supporting local community development through our donations and municipal tax contributions.



## SPOTLIGHT ON CAMP KINDLE

Camp Kindle is part of the Kids Cancer Care Foundation of Alberta; it is a camp for kids and their families affected by childhood cancer. On June 24, 2021, 20 Headwater team members had the opportunity to spend the day at Camp Kindle, helping them build a deck, a fence, and a retaining wall.



## COAST TO COAST COMMUNITY SPONSORSHIPS

ORGANIZATION	TYPE OF SPONSORSHIP
Penobsquis Family Fun Day	Annual community picnic
Havelock Lions Club	Annual auction sale
Crosswinds Activity Centre	Across town for crosswinds 5k, 10k 1/2 marathon
Penobsquis Community Enrichment Committee	Community centre fundraising
Town of Sussex	Ice sponsorship
Kiwanis Club of Sussex	Community fundraising programs
Sussex Sharing Club	Christmas food donations
Salvation Army	Christmas campaign
SPOT – Petittcodiac	Christmas campaign
Sussex Schools	Breakfast program
Sussex & Petittcodiac High Schools	Scholarships
Sussex Regional High School	Grad flags
Sussex Middle School	End of year academic awards
Havelock Elementary	June academic awards
Canada Action Sponsorship	Industry advocacy
Saskatchewan Oil & Gas Hall of Fame	Industry advocacy
Camp Kindle	Material costs donation for volunteer day
Stars Air Ambulance	Community fundraising program
Kidsport at the Shaw Charity Golf Classic	Community fundraising program
Calgary Food Bank	Community fundraising program
Providence School	Community fundraising program
The Alex Community Health	Community fundraising program
Lionheart Foundation	Girl power hour
Hockey Helps the Homeless	Community fundraising program
Bigstone Cree Nation Community Investment	Turkey drive for the Peavine Metis settlement
Bigstone Cree Nation	Christmas hampers for elders



# OUR PEOPLE



FULL-TIME



PART-TIME



CONTRACT

HEAD OFFICE	21	1	4
MARTEN HILLS	0	0	7
McCULLY FIELD	4	0	1



**33%** FEMALE REPRESENTATION



**4** WOMEN IN LEADERSHIP ROLES



**4** WOMEN IN OPERATIONS

# A CULTURE OF INCLUSION

Headwater is committed to creating a culture of inclusion, equality, and diversity. We provide the opportunity for all our personnel to work under fair and equitable conditions in a safe, open, and welcoming environment, which is free from bullying, harassment, and victimization. Our labour practices do not exploit workers, and we believe in fair pay given the competitive nature of the industry. Headwater has no human rights violations in 2021 and none are expected in 2022.







# GOVERNANCE OUR PRACTICES. OUR FUTURE.

Effective corporate governance is essential to the wellbeing of an organization and its stakeholders. At Headwater, we are committed to the highest standards of corporate responsibility and ethical business conduct. Our business practices are compatible with the economic and social priorities of each location in which we operate. We believe in the principles of good governance built on a culture of honesty, integrity, and accountability. We uphold both the letter and spirit of the laws, rules, and regulations applicable to our business. Our governance practices and mandates are regularly reviewed and updated/revised by Board committees to ensure the current expectations are met and best practices maintained. **Governance policies are publicly available on our website.**



# MANAGEMENT TEAM



Headwater's management team is responsible for the day-to-day running of the Company. They evaluate, prioritize, and manage Headwater risks which they report regularly to the Board. They work with Headwater's personnel to responsibly and sustainably develop our resources.

# RISK MANAGEMENT

Headwater's management team is responsible for managing the real and potential risks to our corporation, our stakeholders, and the environment. We actively evaluate risks and implement strategies to eliminate or mitigate them. Risks are weighted by various means including scale, impact to shareholders, chance of occurrence, and speed of onset. As we have grown rapidly, we look forward to sharing more on enterprise risk management procedures in the future.

## PRIOR TO CONDUCTING ANY ACTIVITIES:

The potential environmental impacts of the proposed project are identified and assessed early in the planning process. Measures are identified to avoid negative environmental impacts from occurring or to reduce the severity of the impact. After the project is completed, monitoring is undertaken to detect and measure changes in the receiving environment and to determine the effectiveness of the mitigation implemented.



## CYBER SECURITY

Headwater added a new Board member at the 2022 AGM with strong information technology skills

- All staff, management, and Board members must undergo cyber security training
- We have developed a cyber ERP with the ability to identify, contain, and respond to any potential threats while also being able to be operational within days
- Headwater does not have customer facing cyber security or privacy risks given the nature of our revenues

# BOARD OF DIRECTORS

Headwater's Board stewards the company with oversight of the management team. They ensure that Headwater's activities are undertaken in compliance with the rules, regulations, and standards of oil and gas activities in Alberta and New Brunswick.



## THREE INDEPENDENT COMMITTEES:

- AUDIT COMMITTEE
- CORPORATE GOVERNANCE & SUSTAINABILITY COMMITTEE
- RESERVES AND SAFETY COMMITTEE



## BOARD MEETINGS:

- HELD QUARTERLY AND AS REQUIRED FOR BUSINESS NEEDS
- INDEPENDENT DIRECTORS HAVE IN CAMERA MEETINGS WITHOUT MANAGEMENT



IN 2021 OUR BOARD OF DIRECTORS HAD 9 MEMBERS, 2 OF WHICH WERE FEMALE<sup>1</sup>

IN 2022 OUR BOARD OF DIRECTORS HAS 9 MEMBERS, 2 OF WHICH ARE FEMALE<sup>2</sup>



**COMMITTED TO ACHIEVING 30% FEMALE REPRESENTATION ON THE BOARD BY THE 2023 AGM**

<sup>1</sup> One female departed from the Board in Q4 2021

<sup>2</sup> One female elected to the Board in Q2 2022

# SUSTAINABILITY STEWARDSHIP

The Board's Corporate Governance and Sustainability Committee ("CG&S Committee") is responsible for overseeing Headwater's policies, procedures, practices, and strategies related to environmental, climate, social, governance, and sustainability related issues. Headwater measures performance quarterly against targets and benchmarks.

## EXECUTIVE & STAFF COMPENSATION

The CG&S Committee designed a Short-Term Incentive Plan ("STIP") to be used to determine cash bonus amounts for the executive and staff. ESG goals are weighted to be 20% of the STIP.

Our ESG STIP goals are realistic, but ambitious. More details on this and governance policies can be found in [Headwater's Management Information Circular](#) available on our website.



**BASE SALARY SHARE OWNERSHIP FOR CEO**



**BASE SALARY SHARE OWNERSHIP FOR OTHER EXECUTIVE OFFICERS**

## CORPORATE GOVERNANCE POLICIES

- Code of Business Conduct and Ethics
- Corporate Bylaws
- Disclosure, Confidentiality and Trading Policy
- Contains anti-hedging provisions
- Majority Voting Policy
- Whistleblowing Procedures
- Board Evaluation Process
- Clawback Policy
- Double Trigger in Change of Control
- Lead Independent Director



# RESPONSIBLE GOVERNANCE



The CG&S Committee annually reviews Headwater's Board of Directors skills and experience to assess whether any area needs to be strengthened. This review also includes the knowledge and character of all members as well as the independence of our directors to ensure that the Board is operating effectively and independently of management.

The director skills matrix below provides a listing of skills and competencies that the Board has determined are important to Headwater's continuing success.

Headwater recently added a female Board member who is a founder and CTO of a leading private technology firm, which adds depth to our skills matrix.

## Diversity of Board Member Skills - 2022

Number of members out of 9

Executive Leadership	9/9	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil and Gas Operations	6/9	✓	✓	✓	✓	✓	✓			
Financial Literacy	7/9	✓	✓	✓	✓	✓	✓	✓		
Corporate Governance	8/9	✓	✓	✓	✓	✓	✓	✓	✓	
Strategic Planning/Business Development	8/9	✓	✓	✓	✓	✓	✓	✓	✓	
Human Resources	9/9	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sustainability	6/9	✓	✓	✓	✓	✓	✓			
Health & Safety	5/9	✓	✓	✓	✓	✓				
Information Technology	1/9	✓								
Enterprise Risk Management	7/9	✓	✓	✓	✓	✓	✓	✓		
Government Relations	3/9	✓	✓	✓						
Reserves Evaluation	6/9	✓	✓	✓	✓	✓	✓			



22%

of Directors are Female



7/9

Directors are Independent



Meeting Attendance



Share/DSU of Annual  
Cash Retainer Requirement  
for Directors

# PERFORMANCE & INDEX TABLES

ECONOMIC	UNIT	2021
Sales Revenue	thousands of dollars	190,940 <sup>1</sup>
Royalties	thousands of dollars	25,938 <sup>1</sup>
Production Expenses	thousands of dollars	12,513 <sup>1</sup>
Blending and Transportation Expenses	thousands of dollars	31,778 <sup>1</sup>

EMISSIONS	UNIT	2021
Scope 1 - Direct		
Scope 1 Total Emissions	tonnes CO <sub>2</sub> e/yr	78,346
Scope 1 Emissions Intensity	tonnes CO <sub>2</sub> e/boe	0.0272 <sup>2</sup>
Scope 1 Total Methane	tonnes CH <sub>4</sub> /yr	14,373
Scope 1 Methane Intensity	tonnes CH <sub>4</sub> /boe	0.0050 <sup>2</sup>
Scope 1 Emissions by Source		
Fuel	tonnes CO <sub>2</sub> e/yr	22,124 <sup>3</sup>
Flare	tonnes CO <sub>2</sub> e/yr	49,955
Vent	tonnes CO <sub>2</sub> e/yr	4,719
Fugitives	tonnes CO <sub>2</sub> e/yr	1,548
Scope 2 - Indirect		
Scope 2 Total GHG Emissions	tonnes CO <sub>2</sub> e/yr	1,667
Scope 2 Emissions Intensity	tonnes CO <sub>2</sub> e/boe	0.0006 <sup>2</sup>
Scope 1 & 2 - Total		
Total Emissions	tonnes CO <sub>2</sub> e/yr	80,013
Total Emissions Intensity	tonnes CO <sub>2</sub> e/boe	0.0278 <sup>2</sup>

PRODUCTION	UNIT	2021
Total	boe/d	7,393
Heavy Oil	bbl/d	6,665
Natural Gas	mmcf/d	4.4
Natural Gas Liquid	boe/d	2

ENERGY	UNIT	2021
Total Energy Consumption	kWh/yr	6,060,922

WATER	UNIT	2021
Fresh Water Withdrawals	m <sup>3</sup> /year	28,881
Fresh Water Intensity	m <sup>3</sup> /boe	0.0100 <sup>2</sup>

SPILLS	UNIT	2021
Number of Reportable Spills	count	2
Total Volume of Reportable Spills	m <sup>3</sup>	28

WELLS	UNIT	2021
Gross Total Wells	count	135
Gross Active Wells	count	112
Gross Inactive Wells	count	23
Wells Drilled with Hydraulic Fracturing	count	0

<sup>1</sup> Per Headwater's audited consolidated annual 2021 financial statements

<sup>2</sup> Intensity is calculated with the TIER Methodology using wellhead production as the denominator

<sup>3</sup> Includes produced fuel, propane, natural gas and diesel



SITES	UNIT	2021
Total Sites	count	35
Offshore Sites	count	0
Terrestrial Sites	count	35

HEALTH AND SAFETY	UNIT	2021
Total Injuries	count	11
Lost-Time Injury Frequency (LTIF)	per 200,000 man hours	0.00
Total Recordable Injury Frequency (TRIF)	per 200,000 man hours	0.18
Total Fatalities	count	0

TOTAL EMPLOYEES AND OFFICE CONSULTANTS	UNIT	2021
Full Time Employees	count	25
Part Time Employees	count	1
Contract Employees - Office	count	5
Contract Employees - Field	count	7
Employees covered by collective bargaining agreements	count	0

EMPLOYEE RETENTION	UNIT	2021
Voluntary Turnover	count	0
Involuntary Turnover	count	0

EMPLOYEE AND OFFICE CONSULTANT DIVERSITY	UNIT	2021
Total Female	count	13
Total Male	count	18
Women in Management Positions	count	4
Women in Operations	count	4
Under 30	count	1
30-50	count	24
Over 50	count	6
Human Rights Violations	count	0

<sup>4</sup> For additional information relating to the governance policies and structure of the Company see the Company's management information circular dated April 1, 2022 for the annual and special meeting of the shareholders held on May 12, 2022, which is available on SEDAR at [www.sedar.com](http://www.sedar.com) and the information under the heading Corporate Responsibility on the Company's website at [www.headwaterexp.com](http://www.headwaterexp.com)

<sup>5</sup> Completed in 2022

BOARD COMPOSITION AND DISCLOSURE <sup>4</sup>	UNIT	2021
Size of Board	count	9
Executive directors	count	2
Independent directors	count	7/9
Independent directors	percentage %	78
Compensation committee independence	Y/N	Y
Women on the Board	count	2
Board education	Y/N	Y
Board oversight of ESG	Y/N	Y
Board meeting attendance	percentage %	100
Disclosure on Board member ages and biographies	Y/N	Y

SHAREHOLDER RIGHTS <sup>4</sup>	UNIT	2021
Shareholder voting on executive compensation ("Say on Pay")	Y/N	N
Board engagement contact information	Y/N	Y
Clawback policy	Y/N	Y
Holding period for CEO shares	Y/N	N
Double trigger in place	Y/N	Y
Are stock options excessively dilutive	Y/N	N
Is there a vesting period for CEO's options	Y/N	Y
Disclosure on burn rate as a % of shares outstanding	Y/N	Y
Shareholder equal voting rights	Y/N	Y

BUSINESS ETHICS & TRANSPARENCY <sup>4</sup>	UNIT	2021
Code of business conduct	Y/N	Y
Breaches of code of conduct	count	0
Whistleblower complaints	count	0
Incidents of corruption (current year for previous years)	count	0
Incidents of corruption (current year for current year)	count	0
Percentage of (1) proved and (2) probable reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	percentage %	0
Number of reportable cybersecurity breaches	count	0
Eligible employees who completed cybersecurity training	count	N/A <sup>5</sup>

# SASB

## INDEX TABLE

We referenced SASB Accounting Standards for Upstream Oil and Gas in developing the content of this report. Specific disclosures reported are listed in the SASB Index below.

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE	DATA OR REPORTING LOCATION
GHGs	<ul style="list-style-type: none"> <li>Gross Scope 1 emissions</li> <li>Percentage methane</li> <li>Percentage covered under emissions-limiting regulations</li> </ul>	Quantitative	t CO <sub>2</sub> e and %	EM-EP-110a.1	Gross: 78,346 t CO <sub>2</sub> e Methane: 18.3 % Emissions Limiting Regulation: 100%
	Amount of gross Scope 1 emissions from: <ul style="list-style-type: none"> <li>Flared hydrocarbons</li> <li>Other combustion</li> <li>Process emissions</li> <li>Vented releases</li> <li>Fugitive emissions/leaks</li> </ul>	Quantitative	t CO <sub>2</sub> e	EM-EP-110a.2	Flared: 49,955 tCO <sub>2</sub> e Combustion: 22,124 tCO <sub>2</sub> e Vented: 4,719 tCO <sub>2</sub> e Fugitives: 1,548 tCO <sub>2</sub> e Process: Included in flaring, but not delineated in 2021. Target for 2022.
	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	Discussion & Analysis	N/A	EM-EP-110a.3	Emissions
Air Quality	Air emissions for: <ul style="list-style-type: none"> <li>NO<sub>x</sub>, excluding N<sub>2</sub>O</li> <li>SO<sub>x</sub></li> <li>VOCs</li> <li>PM<sub>10</sub></li> </ul>	Quantitative	t	EM-EP-120a.1	<ul style="list-style-type: none"> <li>NO<sub>x</sub>: 181.4939 t</li> <li>SO<sub>x</sub>: 0.0 t</li> <li>VOCs: 32.9283 t</li> <li>PM<sub>10</sub>: 47.6882 t</li> </ul>
Water Management	Fresh Water: <ul style="list-style-type: none"> <li>Total fresh water withdrawn</li> <li>Percentage recycled</li> <li>Percentage in regions with high or extremely high baseline water stress</li> </ul>	Quantitative	m <sup>3</sup> and %	EM-EP-140a.1	Total Fresh Water: 28,881 m <sup>3</sup> Recycled: 7.5% Regions with high baseline water stress: 0%
	Volume of produced water and flowback generated: <ul style="list-style-type: none"> <li>Percentage discharged</li> <li>Percentage injected</li> <li>Percentage recycled</li> <li>Hydrocarbon content in discharged water</li> </ul>	Quantitative	m <sup>3</sup> , %, and t	EM-EP-140a.2	Target for 2022 Operating Year
	Hydraulically fractured wells <ul style="list-style-type: none"> <li>Percentage from which there is public disclosure of all fracturing fluid chemicals used</li> </ul>	Quantitative	%	EM-EP-140a.3	Headwater does not hydraulically fracture wells. All wells are open hole drilling.



TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE	DATA OR REPORTING LOCATION
<b>Biodiversity Impacts</b>	Description of: • Environmental management policies • Practices for active sites	Discussion & Analysis	N/A	EM-EP-160a.1	Environment Biodiversity Impact Management
	Hydrocarbon spills: • Number and aggregate volume of spills with ESI rankings 8-10 • Volume recovered	Quantitative	bbl	EM-EP-160a.2	Number: 2 Volume: 176 bbl/28m <sup>3</sup> Volume recovered: 176 bbl/28m <sup>3</sup> Reported to AER Spill Management
	In and near sites with protected conservation status or endangered species habitats, percentage of: • Proved reserves • Probable reserves	Quantitative	%	EM-EP-160a.3	Headwater does not currently report on this topic.
<b>Security, Human Rights &amp; Rights of Indigenous Peoples</b>	In or near areas of conflict, percentage of: • Proved reserves • Probable reserves	Quantitative	%	EM-EP-210a.1	0%: Headwater does not operate in areas of conflicts; operations are solely within Canada.
	In or near areas of Indigenous lands, percentage of: • Proved reserves • Probable reserves	Quantitative	%	EM-EP-210a.2	Headwater's assets are located on Crown and Freehold Land near traditional Indigenous and Metis Lands.
	Discussion of engagement processes and due diligence practices, regarding human rights, Indigenous rights, and operation in areas of conflict	Discussion & Analysis	N/A	EM-EP-210a.3	N/A: Headwater does not operate in areas of conflicts; operations are solely within Canada.
<b>Community Relations</b>	Discussion of process to manage risks and opportunities associated with community rights and interests	Discussion & Analysis	N/A	EM-EP-210b.1	Community Engagement
	Number and duration of non-technical delays	Quantitative	Number, Days	EM-EP-210b.2	0
<b>Workforce Health &amp; Safety</b>	Totals: • Recordable incident rate (TRIR) • Fatality rate • Near miss frequency rate (NMFR) • Average hours of health, safety, and emergency response training for: ◦ Full-time employees ◦ Contract employees ◦ Short-service employees	Quantitative	Rate and h	EM-EP-320a.1	Health and Safety
	Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle	Discussion & Analysis	N/A	EM-EP-320a.2	Health and Safety

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE	DATA OR REPORTING LOCATION
<b>Reserves Valuation &amp; Capital Expenditures</b>	Sensitivity of hydrocarbon reserve levels to future price projection scenarios that account for a price on carbon emissions	Quantitative	MMbbls, MMscf	EM-EP-420a.1	Headwater does not currently report on this topic.
	Estimated carbon dioxide emissions embedded in proved hydrocarbon reserves	Quantitative	t CO <sub>2</sub> e	EM-EP-420a.2	60,529 t CO <sub>2</sub> e
	Amount: • Invested in renewable energy • Revenue generated by renewable energy sales	Quantitative	Reporting currency	EM-EP-420a.3	\$0
	Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets	Discussion & Analysis	N/A	EM-EP-420a.4	Letter from our CEO & President and COO
<b>Business Ethics &amp; Transparency</b>	In countries that have the 20 lowest rankings in Transparency International's Corruption Percentage Index, percentage of: • Proved reserves • Probable reserves	Quantitative	%	EM-EP-510a.1	0%: Canada is ranked 74, so it is not ranked within the 20 lowest rankings in Transparency International's Corruption Percentage Index.
	Description of the management system for prevention of corruption and bribery throughout the value chain	Discussion & Analysis	N/A	EM-EP-510a.2	Governance
<b>Management of the Legal &amp; Regulatory Environment</b>	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	Discussion & Analysis	N/A	EM-EP-530a.1	Regulatory Management
<b>Critical Incident Risk Management</b>	Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of greater consequence (Tier 1)	Quantitative	Rate	EM-EP-540a.1	Headwater does not currently report on this topic.
	Description of management systems used to identify and mitigate catastrophic and tail-end risks	Discussion & Analysis	N/A	EM-EP-540a.2	Risk Management Headwater does not currently report on catastrophic risks.
<b>Activity Metrics</b>	Production of: • oil • natural gas • synthetic oil • synthetic gas	Quantitative	MMbbl/day MMscf/day	EM-EP-000.A	2021 Highlights
	Number of offshore sites	Quantitative	Number	EM-EP-000.B	0 Sites
	Number of terrestrial sites	Quantitative	Number	EM-EP-000.C	35 Producing Sites



# IMPORTANT INFORMATION CONCERNING THIS ESG REPORT

## FORWARD-LOOKING INFORMATION AND OTHER ADVISORIES

This ESG Report contains certain forward-looking statements and forward-looking information (collectively, “forward-looking statements”), which are based on our current internal expectations, estimates, projections, assumptions and beliefs. These forward-looking statements relate to future events and performance. All statements other than statements of historical fact may be forward-looking statements. Forward-looking statements are often, but not always, identified by the use of words such as “seek”, “anticipate”, “plan”, “continue”, “estimate”, “expect”, “may”, “will”, “project”, “predict”, “potential”, “targeting”, “intend”, “could”, “might”, “should”, “believe”, “would” and similar or related expressions. These statements are not guarantees of future performance.

In particular, forward-looking statements in this ESG Report include, but are not limited to, statements regarding our strategy, plans, objectives, priorities and focus and the benefits to be derived therefrom; that Headwater will continue to build relationships with local Indigenous companies in 2022 and beyond; Headwater’s commitment to increase female representation on the Board to 30% by the 2023 annual general meeting of shareholders; Headwater’s commitment to deliver strong corporate returns while striving for continuous improvement in sustainability-related elements and reduction of environmental impacts while improving the Corporation’s asset quality, economic performance, strength and resiliency; the Corporation’s focus on developing high-quality heavy oil production, reserves and lands in the Clearwater play and its low decline natural gas productions and reserves in the McCully field; Headwater’s ability to continue to deliver responsibly produced energy and offer long term sustainable value for its shareholders; Headwater’s plan to establish additional ESG targets and baselines as the Corporation evolves; Headwater’s commitment to conducting its activities in an environmentally responsible manner; Headwater’s plan to reduce GHG emissions and emissions intensity, utilizing innovative technology to reduce and eliminate fugitive emissions, venting and flaring at its sites; the Corporation’s plan to release emissions targets in the future; Headwater’s plan for injector configurations to consist of quad leg horizontal wells approximately 25 meters laterally and 10 meters below currently producing wells; the Corporation’s plan to protect ecosystems and species at risk if it operates in any sensitive areas; the Corporation’s plan to (i) keep clearing of vegetation and disturbances to waterways and fish habitats to a minimum and undertaken in a manner that reduces potential impact of erosion, flooding and soil saturation and (ii) schedule work activities during periods of the lowest sensitivity to wildlife; Headwater’s 2022 targets with respect to emissions, spills, volume of produced water and flowback, man hours, human rights violations, LTIF and TRIF; Headwater’s commitment to the highest standards of corporate responsibility and ethical business conduct; the Corporation’s intent to share more on enterprise risk management procedures in the future; the ability of the Corporation’s cyber ERP to identify, contain and respond to any potential threats while also being able to be operational within days; Headwater’s expectations that it will continue to meet or exceed industry safety, regulatory and environmental standards in Alberta and New Brunswick and that it will continue to be in compliance with applicable laws, rules and regulations applicable to its business; the anticipated benefits to be derived from Headwater’s EMM, SRM, WMP and ERP; and other matters.

Forward-looking statements are based on a number of factors and assumptions which have been used to develop such statements and information but which may prove to be incorrect. Although Headwater believes that the expectations reflected in such forward-looking statements are reasonable, undue reliance should not be placed on forward-looking statements because Headwater can give no assurance that such expectations will prove to be correct.

With respect to forward-looking statements contained in this ESG Report, in addition to other assumptions identified herein, Headwater has made assumptions regarding, among other things: future commodity prices including oil and natural gas and interest rates; conditions in general economic and financial markets; effects of regulation by governmental agencies; receipt of required stakeholder and regulatory approvals; that future operating costs will be consistent with

the Corporation's expectations; future exchange rates; the ability of Headwater to obtain qualified staff, equipment and services in a timely manner and on acceptable terms; timing and amount of capital expenditures; the impact of increasing competition; that Headwater will have sufficient cash flow, debt or equity sources or other financial resources required to fund its capital and operating expenditures and requirements as needed; that Headwater will have the ability to develop its crude oil and natural gas properties in the manner currently contemplated; field production rates and decline rates; the ability to replace and expand oil and natural gas reserves through acquisition, development and exploration; the timing and costs of pipeline, storage and facility construction and expansion and the ability of Headwater to secure adequate product transportation; that current or, where applicable, proposed assumed industry conditions, laws and regulations will continue in effect or as anticipated; availability of government initiatives to Headwater; the regulatory framework regarding royalties, taxes and environmental matters in the jurisdictions in which Headwater operates; that the estimates of Headwater's cost structure and the assumptions related thereto are accurate in all material respects; the estimates of Headwater's production, reserves and resources volumes and the assumptions related thereto (including commodity prices and development costs) are accurate in all material respects; and the ability of Headwater to successfully market its oil and natural gas products.

A number of factors could cause actual results to differ materially from the results discussed in the forward-looking statements including, but not limited to, risks associated with volatility of commodity prices and stock exchanges, risks associated with the Russian Ukrainian conflict, oil and natural gas exploration, development, exploitation, production, changes to the Corporation's capital budget, marketing and transportation, loss of markets, currency fluctuations, imprecision of reserve estimates, environmental risks, competition from other producers, incorrect assessment of the value of acquisitions, failure to realize the anticipated benefits of acquisitions and ability to access sufficient capital from internal and external sources. Operations may be unsuccessful or delayed as a result of the province-wide fracking moratorium in New Brunswick, competition for services, supplies and equipment, mechanical and technical difficulties, challenges associated with attracting and retaining employees on a cost-effective basis, and commodity and marketing risks. The Corporation is subject to significant drilling risks and uncertainties relating to its ability to find oil and natural gas reserves on an economic basis and the potential for technical problems that could lead to well blowouts and environmental damage. The Corporation is also exposed to risks relating to obtaining timely regulatory approvals, surface access, transportation and other third party related operational risks. Furthermore, there are numerous uncertainties in estimating the Corporation's reserve base due to the complexities in estimated future production, costs and timing of expenses and future capital. The Corporation is subject to regulatory legislation, which may require significant expenditures to ensure compliance or which may result in fines, penalties or production restrictions for non-compliance. Readers are cautioned that the foregoing list of factors are not exhaustive. The forward-looking statements contained in this ESG Report are expressly qualified by this cautionary statement. For a full description of the risk factors, please see "Risk Factors" in the Corporation's most recent Annual Information Form which is available at [www.sedar.com](http://www.sedar.com). Readers are also referred to risk factors described in other documents Headwater files with Canadian securities authorities.

Management has included the above summary of assumptions and risks related to forward-looking statements provided in this ESG Report in order to provide a more complete perspective on Headwater's future operations and such information may not be appropriate for other purposes. Headwater'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 Headwater will derive therefrom. These forward-looking statements are made as of the date of this ESG Report and Headwater 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 law.



## NO OFFER OR SOLICITATION REGARDING SECURITIES

This ESG Report is provided for informational purposes only and does not constitute an offer to sell or a solicitation of an offer to buy any security in Canada, the United States or any other jurisdiction. Headwater does not intend to solicit and is not soliciting, any action with respect to any security or any other contractual relationship with Headwater.

The contents of this ESG Report have not been approved or disapproved by any securities commission or regulatory authority in Canada, the United States or any other jurisdiction, and Headwater expressly disclaims any duty on Headwater to make disclosure or any filings with any securities commission or regulatory authority, beyond that imposed by applicable law. The contents of this ESG Report are neither sufficient for, nor intended by Headwater to be used in connection with, any decision relating to the purchase or sale of any existing or future securities. Headwater does not intend to provide financial, investment, tax, legal, or accounting advice. Persons considering the purchase or sale of any securities should consult with their own independent professional advisors.

## THIRD PARTY INFORMATION

Certain market, third party and industry data contained in this summary is based upon information from government or other industry publications and reports or based on estimates derived from such publications and reports. Government and industry publications and reports generally indicate that they have obtained their information from sources believed to be reliable, however, Headwater has not conducted its own independent verification of such information. This ESG Report also includes certain data derived from the Alberta Energy Regulator. No representation or warranty of any kind, express or implied, is made by Headwater as to the accuracy or completeness of the information contained in this document, and nothing contained in this ESG Report is, or shall be relied upon as, a promise or report by Headwater.

## OIL AND GAS ABBREVIATIONS, CONVERSIONS AND METRICS

This ESG Report contains a number of oil and gas metrics which do not have standardized meanings or standard methods of calculation and therefore such measures may not be comparable to similar measures used by other companies and should not be used to make comparisons. Such metrics have been included herein to provide readers with additional measures to evaluate the Corporation's performance; however, such measures are not reliable indicators of the future performance of the Corporation and future performance may not compare to the performance in previous periods and therefore such metrics should not be unduly relied upon. Management uses these oil and gas metrics for its own performance measurements and to provide securityholders with measures to compare Headwater's operations over time. Readers are cautioned that the information provided by these metrics, or that can be derived from the metrics presented in this ESG Report, should not be relied upon for investment or other purposes.

The following abbreviations used in this ESG Report have the meanings set forth below:

<b>mmcf/d</b>	million cubic feet per day	<b>m<sup>3</sup></b>	cubic meters
<b>boe</b>	barrels of oil equivalent of natural gas, on the basis of one barrel of oil or NGLs for six thousand cubic feet of natural gas	<b>m<sup>3</sup>/boe</b>	cubic meters per barrel of oil equivalent
<b>boe/d</b>	barrel of oil equivalent per day	<b>bbl</b>	one barrel
<b>NGLs</b>	natural gas liquids	<b>bbls/d</b>	barrels per day
<b>Natural Gas</b>	Conventional Natural Gas as defined in National Instrument 51-101	<b>kWh/yr</b>	kilowatt-hours per year
<b>CO<sub>2</sub>e</b>	carbon dioxide equivalent	<b>t</b>	ton
<b>CO<sub>2</sub>e/yr</b>	carbon dioxide equivalent per year	<b>MM</b>	million
<b>CO<sub>2</sub>e/boe</b>	carbon dioxide equivalent per barrel of oil equivalent	<b>NO<sub>x</sub></b>	oxides of nitrogen
<b>CH<sub>4</sub>e</b>	methane equivalent	<b>N<sub>2</sub>O</b>	nitrous oxide
<b>CH<sub>4</sub>e/yr</b>	methane equivalent per year	<b>SO<sub>x</sub></b>	oxides of sulphur
<b>CH<sub>4</sub>e/boe</b>	methane equivalent per barrel of oil equivalent	<b>VOCs</b>	volatile organic compounds
		<b>PM<sub>10</sub></b>	particulate matter with a diameter of 10 micrometers or smaller



**Headwater Exploration Inc.**

## **ESG REPORT 2022**

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