Northern Star Resources - Water Security 2023

W0. Introduction

W0.1

(W0.1) Give a general description of and introduction to your organization.

Northern Star Resources is a global Australian gold producer with projects located in Western Australia and Alaska, both highly prospective and low sovereign risk regions.

Since 2010 the Company has significantly grown production, earnings and cash flows, and Resources and Reserves through operational excellence and active investment in exploration.

W-MM0.1a/W-CO0.1a

(W-MM0.1a/W-CO0.1a) Which activities in the metals and mining and coal sectors does your organization engage in?

Activity	Details of activity
Mining	Gold
Processing	Gold

W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	July 1 2022	June 30 2023

W0.3

(W0.3) Select the countries/areas in which you operate.

Australia
United States of America

W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.

AUD

W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

Companies, entities or groups over which financial control is exercised

W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

No

W0.7

(W0.7) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization.	Provide your unique identifier

W1. Current state

W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Important	Neutral	Higher quality water is essential for conversion into potable water supplies on our remote sites, for ensuring we have Water, Sanitation and Hygiene (WASH) services in the workplace.
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital	Vital	Northern Star's mineral processing plants require water for the extraction of the gold from the ore. Water is also important for maintaining dust suppression systems, forming well made safe roadways and bunds, and for ancillary services.

W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Frequency of measurement	Method of measurement	Please explain
Water withdrawals – total volumes	100%	Monthly	Potable water measured via meter at source Water abstraction measured via meter at licensed abstraction point Recycled water measured via meter at source	Water withdrawals, recycled volumes and consumption is measured by all sites (by quality, source and location). This includes potable water through metered sources for applicable sites, abstraction through metered and licensed points, and water recycled from operations. This data is utilised in site water balance models, to identify efficiency opportunities and contributes to our annual sustainability report and performance data releases.
Water withdrawals – volumes by source	100%	Monthly	Potable water measured via meter at source Water abstraction measured via meter at licensed abstraction point Recycled water measured via meter at source	Water withdrawals, recycled volumes and consumption is measured by all sites (by quality, source and location). This includes potable water through metered sources for applicable sites, abstraction through metered and licensed points, and water recycled from operations. This data is utilised in site water balance models, to identify efficiency opportunities and contributes to our annual sustainability report and performance data releases.
Entrained water associated with your metals & mining and/or coal sector activities - total volumes [only metals and mining and coal sectors]	100%	Monthly	Measured via meter at source	Volume of entrained water in the raw material is primarily assessed for haulage (dust suppression) and processing demands - not specific to environmental withdrawals.
Produced water associated with your oil & gas sector activities - total volumes [only oil and gas sector]	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Water withdrawals quality	100%	Monthly	Measured via combination of meter and water sampling.	Water withdrawals, recycled volumes and consumption is measured by all sites (by quality, source and location). This includes potable water through metered sources for applicable sites, abstraction through metered and licensed points, and water recycled from operations. This data is utilised in site water balance models, to identify efficiency opportunities and contributes to our annual sustainability report and performance data releases.
Water discharges – total volumes	26-50	Monthly	Measured via meter at discharge point.	All operational sites that are licensed to undertake discharges of water undertake monitoring in accordance with licence conditions, which includes but is not limited to volumes and quality parameters.
Water discharges – volumes by destination	26-50	Monthly	Measured via meter at discharge point.	All operational sites that are licensed to undertake discharges of water undertake monitoring in accordance with licence conditions, which includes but is not limited to volumes and quality parameters.
Water discharges – volumes by treatment method	26-50	Monthly	Measured via meter at discharge point.	All operational sites that are licensed to undertake discharges of water undertake monitoring in accordance with licence conditions, which includes but is not limited to volumes and quality parameters.
Water discharge quality – by standard effluent parameters	26-50	Monthly	Measured via meter at discharge point.	All operational sites that are licensed to undertake discharges of water undertake monitoring in accordance with licence conditions, which includes but is not limited to volumes and quality parameters.
Water discharge quality – emissions to water (nitrates, phosphates, pesticides, and/or other priority substances)	Not monitored	<Not Applicable>	<Not Applicable>	
Water discharge quality – temperature	26-50	Monthly	Measured via meter at discharge point.	All operational sites that are licensed to undertake discharges of water undertake monitoring in accordance with licence conditions, which includes but is not limited to volumes and quality parameters.
Water consumption – total volume	100%	Monthly	Potable water consumption is measured through metered sources for applicable sites, and abstraction through metered and licensed points.	Water withdrawals, recycled volumes and consumption is measured by all sites (by quality, source and location). This includes potable water through metered sources for applicable sites, abstraction through metered and licensed points, and water recycled from operations. This data is utilised in site water balance models, to identify efficiency opportunities and contributes to our annual sustainability report and performance data releases.
Water recycled/reused	100%	Monthly	Recycled/reused water measured via meter at source	Water withdrawals, recycled volumes and consumption is measured by all sites (by quality, source and location). This includes potable water through metered sources for applicable sites, abstraction through metered and licensed points, and water recycled from operations. This data is utilised in site water balance models, to identify efficiency opportunities and contributes to our annual sustainability report and performance data releases.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Other, please specify (Weekly)	Potable water quality is tested routinely via meter and sampling.	Water quality of potable water is tested routinely for drinking water supplied to camps/drinking sources on sites - this includes transported, abstracted or supplied water, and treated offsite or onsite.

W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare to the previous reporting year, and how are they forecasted to change?

	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Five-year forecast	Primary reason for forecast	Please explain
Total withdrawals	52525	Higher	Increase/decrease in business activity	Unknown	Other, please specify (Northern Star does not currently do five-year forecasts)	Increases in water withdrawals are a result in increased operational needs. For example, the mill expansion at Thunderbox, commencing underground operations at Porphyry, and increases to the number of people at the Bronzewing camp has led to an increase in water demand. Please note that the inclusion of historical legacy data from Saracen assets prior to the merger has resulted in a restatement of data prior to 12 February 2021. Therefore total withdrawals for FY 2022 is 46,574 ML and for previous years is: FY 2021 45,748 ML; FY 2020 38,979 ML; and FY 2019 34,528 ML For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx
Total discharges	27717	About the same	Please select	Unknown	Other, please specify (Northern Star does not currently do five-year forecasts)	There has been no significant changes to operations that has affected the volume of discharges. Please note that the inclusion of historical legacy data from Saracen assets prior to the merger has resulted in a restatement of data prior to 12 February 2021. Therefore total discharges for FY 2022 is 27,535 ML and for previous years is: FY2021 27,991 ML; FY 2020 24,347 ML; and FY 2019 20,154 ML. For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx
Total consumption	24808	Higher	Increase/decrease in business activity	Unknown	Other, please specify (Northern Star does not currently do five-year forecasts)	Increases in water consumption are a result in increased operational needs. For example, the mill expansion at Thunderbox, commencing underground operations at Porphyry, and increases to the number of people at the Bronzewing camp has led to an increase in water demand. Please note that the inclusion of historical legacy data from Saracen assets prior to the merger has resulted in a restatement of data prior to 12 February 2021. Therefore total consumption for FY 2022 is 19,039 ML and for previous years is: FY 2021 17,757 ML, FY 2020 14,632 ML, FY 2019 14,754 ML For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx

W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress, provide the proportion, how it compares with the previous reporting year, and how it is forecasted to change.

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Five-year forecast	Primary reason for forecast	Identification tool	Please explain
Row 1	Yes	26-50	Higher	Increase/decrease in business activity	Unknown	Other, please specify (Northern Star does not currently do five-year forecasts)	WRI Aqueduct	FY 2023 High = 22,882 ML Low = 29,642 ML. Increases in water withdrawals are a result in increased operational needs. For example, the mill expansion at Thunderbox, commencing underground operations at Porphyry, and increases to the number of people at the Bronzewing camp has led to an increase in water demand. Please note that the inclusion of historical legacy data from Saracen assets prior to the merger has resulted in a restatement of data prior to 12 February 2021. Therefore comparison of water volume withdrawn from high baseline water stress risk areas versus low baseline water stress is: FY 2022 High = 18,506 ML Low = 28,068 ML, FY 2021 High = 19,104 ML Low = 26,644 ML, FY 2020 High = 13,774 ML Low = 25,205 ML, FY 2019 High = 14,416 ML Low = 20,112 ML For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx

W1.2h

(W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	28368	Higher	Increase/decrease in business activity	Increases in water withdrawals are a result in increased operational needs. For example, the mill expansion at Thunderbox, commencing underground operations at Porphyry, and increases to the number of people at the Bronzewing camp has led to an increase in water demand. Incident rainfall volumes (from tailings storage facilities, mining and processing area capture and collection sumps) are incorporated separately into recycled water figures. NB: Inclusion of historical legacy data from Saracen assets prior to the merger has resulted in a restatement of data prior to 12 February 2021. For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx
Brackish surface water/Seawater	Relevant	427	Higher	Increase/decrease in efficiency	Increases in water withdrawals are a result in increased operational needs. For example, the mill expansion at Thunderbox, commencing underground operations at Porphyry, and increases to the number of people at the Bronzewing camp has led to an increase in water demand. NB: Inclusion of historical legacy data from Saracen assets prior to the merger has resulted in a restatement of data prior to 12 February 2021. For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx
Groundwater – renewable	Relevant	22290	Higher	Increase/decrease in business activity	Increases in water withdrawals are a result in increased operational needs. For example, the mill expansion at Thunderbox, commencing underground operations at Porphyry, and increases to the number of people at the Bronzewing camp has led to an increase in water demand. NB: Inclusion of historical legacy data from Saracen assets prior to the merger has resulted in a restatement of data prior to 12 February 2021. For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	
Produced/Entrained water	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	
Third party sources	Relevant	1440	Lower	Increase/decrease in business activity	NB: Inclusion of historical legacy data from Saracen assets prior to the merger has resulted in a restatement of data prior to 12 February 2021. For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx

W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water	Relevant	27717	About the same	Please select	There has been no significant changes to operations that has affected the volume of discharges. NB: Inclusion of historical legacy data from Saracen assets prior to the merger has resulted in a restatement of data prior to 12 February 2021. For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx
Brackish surface water/seawater	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	
Groundwater	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	
Third-party destinations	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	

W1.2j

(W1.2j) Within your direct operations, indicate the highest level(s) to which you treat your discharge.

	Relevance of treatment level to discharge	Volume (megaliters/year)	Comparison of treated volume with previous reporting year	Primary reason for comparison with previous reporting year	% of your sites/facilities/operations this volume applies to	Please explain
Tertiary treatment	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	
Secondary treatment	Relevant	27717	About the same	Please select	1-10	This figure relates to treated water discharged into the Goodpaster River from our Pogo Operations. There has been no significant changes to operations that has affected the volume of discharges.
Primary treatment only	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	
Discharge to the natural environment without treatment	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	
Discharge to a third party without treatment	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	
Other	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	

W1.3

(W1.3) Provide a figure for your organization's total water withdrawal efficiency.

	Revenue	Total water withdrawal volume (megaliters)	Total water withdrawal efficiency	Anticipated forward trend
Row 1	4124155000	52525	78517.943836268 4	Total water withdrawals have increased in FY23 from FY22 as a result in increased operational needs. For example, the mill expansion at Thunderbox, commencing underground operations at Porphyry, and increases to the number of people at the Bronzewing camp has led to an increase in water demand. We consistently look for strategies to improve efficiencies and reduce water consumption across our operations, in consultation with our stakeholders and other shared water users.

W-MM1.3/W-CO1.3

(W-MM1.3/W-CO1.3) Do you calculate water intensity information for your metals and mining activities?

Yes

W-MM1.3a/W-CO1.3a

(W-MM1.3a/W-CO1.3a) For your top 5 products by revenue, provide the following intensity information associated with your metals and mining activities.

Product name	Numerator: Water aspect	Denominator	Comparison with previous reporting year	Please explain
Gold	Freshwater consumption	Ounce of final product	Higher	The increase in this intensity metric is attributed to increased water consumption resulting from increased operational water needs. Total Freshwater Consumption per ounce of gold sold: FY2023 0.0015 ML/oz gold sold FY2022 0.0012 ML/oz gold sold FY2021 0.0010 ML/oz gold sold FY2020 0.0007 ML/oz gold sold FY2019 0.0005 ML/oz gold sold For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx
Gold	Total water consumption	Ounce of final product	Higher	The increase in this intensity metric is attributed to increased water consumption resulting from increased operational water needs. Total Water Consumption per ounce of gold sold: FY2023 0.016 ML/oz gold sold FY2022 0.012 ML/oz gold sold FY2021 0.011 ML/oz gold sold FY2020 0.010 ML/oz gold sold FY2019 0.013 ML/oz gold sold For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx
Gold	Total water withdrawals	Ounce of final product	Higher	The increase in this intensity metric is attributed to increased water withdrawals resulting from increased operational water needs. Total Water Withdrawal per ounce of gold sold: FY2023 0.034 ML/oz gold sold FY2022 0.030 ML/oz gold sold FY2021 0.029 ML/oz gold sold FY2020 0.027 ML/oz gold sold FY2019 0.030 ML/oz gold sold For more information or detailed data please refer to our FY22 Performance Data tables located at: https://www.nsrltd.com/getattachment/sustainability/fy22-performance-data-tables.xlsx

W1.4

(W1.4) Do any of your products contain substances classified as hazardous by a regulatory authority?

	Products contain hazardous substances	Comment
Row 1	No	

W1.5

(W1.5) Do you engage with your value chain on water-related issues?

	Engagement	Primary reason for no engagement	Please explain
Suppliers	No	Please select	
Other value chain partners (e.g., customers)	No	Please select	

W2. Business impacts

W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?

No

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

	Water-related regulatory violations	Fines, enforcement orders, and/or other penalties	Comment
Row 1	No	<Not Applicable>	

W3. Procedures

W3.1

(W3.1) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?

	Identification and classification of potential water pollutants	How potential water pollutants are identified and classified	Please explain
Row 1	Please select	<Not Applicable>	<Not Applicable>

W-MM3.2/W-CO3.2

(W-MM3.2/W-CO3.2) By river basin, what number of active and inactive tailings dams are within your control?

Country/Area & River basin	Number of tailings dams in operation	Number of inactive tailings dams	Comment
Australia – Other, please specify (Western Plateau Division - Salt Lake)	13	31	Yandal Production Centre, including Jundee, Bronzewing and Thunderbox. Kalgoorlie Production Centre, including Carosue Dam, Kanowna Belle, KCGM and South Kalgoorlie.
Australia – Other, please specify (Western Plateau Division - Mackay)	0	14	Central Tanami operations.
Please select			
United States of America – Yukon River	1	0	Pogo Production Centre.

W-MM3.2a/W-CO3.2a

(W-MM3.2a/W-CO3.2a) Do you evaluate and classify the tailings dams under your control according to the consequences of their failure to human health and ecosystems?

	Evaluation of the consequences of tailings dam failure	Evaluation/Classification guideline(s)	Tailings dams have been classified as 'hazardous' or 'highly hazardous'	Please explain
Row 1	Yes, we evaluate the consequences of tailings dam failure	Australian National Committee on Large Dams (ANCOLD) Canadian Dam Association (CDA) Other, please specify (APEGBC 2016, ICMM 2016, ICOLD 2011, DMIRS 1998/2013/2015, Alaska Dam Safety Program, Internal Standards.)	None of our tailings dams have been classified as 'hazardous' or 'highly hazardous' (or equivalent)	All sites are in remote areas where there are no populations at risk or significant environmental values that could not be restored.

W-MM3.2c/W-CO3.2c

(W-MM3.2c/W-CO3.2c) To manage the potential impacts to human health or water ecosystems associated with the tailings dams in your control, what procedures are in place for all of your dams?

Procedure	Detail of the procedure	Please explain
Other management procedure	Other, please specify (NSR-TS-006-STA Tailings Management Standard)	• Northern Star Tailings Management Standard (NSR-TS-006-STA). This requires all sites to have a Tailings Management Plan for each tailings facility.
Operating plan	An operating plan that includes the operating constraints of the dam and its construction method An operating plan that considers the consequences of breaching the operating constraints of the dam An operating plan that includes periodic review of the foundations and slope materials An operating plan that evaluates the effectiveness of the risk management measures and whether performance objectives are being met	• Facility engineering design plans • Operations Manual including monitoring requirements • Inspection and audit requirements and annual reports • Dam break failure analysis • Emergency Response procedures • Routine operational inspection processes and documents
Life of facility plan	A life of facility plan that identifies minimum specifications and performance objectives for the operating and closure phases A life of facility plan that considers post-closure land and water use A life of facility plan that details the financial and human resources needed	• Life of Mine TSF Strategy • Closure Plans for each site and operational facility • Closure and rehabilitation provisions
Assurance program	An assurance program for each phase of the facilities' life that includes the frequency of the various levels of inspections, audits and reviews An assurance program for each phase of the facilities' life that includes the scope of the various levels of inspections, audits and reviews An assurance program that details the competence requirements for the persons undertaking the inspections, audits and reviews An assurance program that includes an external audit covering the life of facility or the operating plans	• Independent inspection and audit requirements and annual reports • TSF disclosures on company website and in annual Sustainability Report • Nominated Engineer of Record

W3.3

(W3.3) Does your organization undertake a water-related risk assessment?

Yes, water-related risks are assessed

W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.

Value chain stage
Direct operations

Coverage
Full

Risk assessment procedure
Water risks are assessed as part of an established enterprise risk management framework

Frequency of assessment
More than once a year

How far into the future are risks considered?
3 to 6 years

Type of tools and methods used
Enterprise risk management

Tools and methods used
Other, please specify (Internal risk methodology aligned to risk management standards.)

Contextual issues considered
Water availability at a basin/catchment level
Water quality at a basin/catchment level
Stakeholder conflicts concerning water resources at a basin/catchment level
Implications of water on your key commodities/raw materials
Water regulatory frameworks
Status of ecosystems and habitats
Access to fully-functioning, safely managed WASH services for all employees
Other, please specify (Climate change related water impacts.)

Stakeholders considered
Employees
Local communities
NGOs
Regulators
Suppliers
Water utilities at a local level
Other water users at the basin/catchment level
Other, please specify (Pastoralists and neighbouring companies and water users within the immediate drawdown area of water abstraction assets are also considered (not just at greater basin scale).)

Comment
Customers are not located generally in the same catchments. Customers may be considered if water is not able to be sourced at an asset or it has a major cost implication on the operation.
Investors are not located generally in the same catchments. Investors may be considered if water is not able to be sourced at an asset or it has a major cost implication on the operation.
Regulators are considered from an ability to obtain and/or maintain abstraction approvals

W3.3b

(W3.3b) Describe your organization's process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

	Rationale for approach to risk assessment	Explanation of contextual issues considered	Explanation of stakeholders considered	Decision-making process for risk response
Row 1	Northern Star's operational and corporate activities are guided by the company's risk management framework, comprising a risk management policy and standard. The framework is aligned to ISO 31000, the international standard for risk management, and provides a consistent approach to the assessment, management and reporting of strategic, operational, financial, environmental, social performance, governance and other business risks across the organisation. In addition, environmental approvals require risks to be identified and management measures implemented to manage risks to water and the environment more broadly.	Northern Star has in place a corporate climate change related risk register and an Environmental, Social and Safety (ESS) risk register. Water risks are reflected in both of these registers and in relevant site operational risk registers to ensure that appropriate mitigating practices are implemented.	Pastoralists and neighbouring companies and water users within the immediate drawdown area of water abstraction assets are considered (not just at greater basin scale). Customers are not located generally in the same catchments. Customers may be considered if water is not able to be sourced at an asset or it has a major cost implication on the operation. Investors are not located generally in the same catchments. Investors may be considered if water is not able to be sourced at an asset or it has a major cost implication on the operation. Regulators are considered from an ability to obtain and/or maintain approvals/licences/permits, as well as comply with approval conditions.	Northern Star has in place a Risk Management Standard (NSR-COR-019A-STA) which incorporates a risk register review process conducted quarterly at Corporate and Site levels. The climate change related risk register is reviewed and updated biannually and the Environmental, Social and Safety (ESS) risk register annually. The review process includes review and updating by both risk owners and risk treatment owners. Implementation of identified and documented risk treatments is tracked against due dates. Final review and approval of the two risk registers is done by the Board ESS Committee. A similar process is applied to the site operational risk registers, and to Northern Star's Strategic Risk Register, which is reviewed and approved by the Board's Audit and Risk Committee. Risk assessments conducted for environmental approvals are conducted by environmental staff and reviewed/approved by relevant managers.

W4. Risks and opportunities

W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes, only within our direct operations

W4.1a

(W4.1a) How does your organization define substantive financial or strategic impact on your business?

Northern Star has in place a Risk Management Standard (NSR-COR-019A-STA) which incorporates a risk register review process conducted quarterly at Corporate and Site levels. The Risk Matrix which forms part of the Risk Management Standard identifies differing levels of severity in relation to financial or strategic impacts on the business.

W4.1b

(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

	Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
Row 1	7	100	Northern Star's climate-related risk analysis indicate that long term climate change could impact on all operations, with variable levels of financial or strategic risk. High inherent climate change risks identified included: • Decreased average total annual rainfall causes drier surface conditions and underground aquifers to be replenished slowly; and • in Western Australia, rainfall is becoming more concentrated and cyclones more severe; • in Alaska, total rainfall is increasing and permafrost melting off-site, both pointing to an increase in the frequency and severity of floods.

W4.1c

(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive financial or strategic impact on your business, and what is the potential business impact associated with those facilities?

Country/Area & River basin

Australia	Other, please specify (Western Plateau - Salt Lakes)

Number of facilities exposed to water risk
6

% company-wide facilities this represents
76-99

Production value for the metals & mining activities associated with these facilities

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
Please select

Comment
For sites reliant on groundwater abstraction - Long term climate change could impact on the availability and quality of groundwater resources in these regions. Changes in rainfall intensity due to long term climate change could increase the risk of short term production impacts from localised flood events.

Country/Area & River basin

United States of America	Yukon River

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
Please select

Comment
Changes in rainfall intensity and temperature due to long term climate change could increase the risk of short term production impacts from localised flood events.

W4.2

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

Australia	Other, please specify (Western Plateau - Salt Lakes)

Type of risk & Primary risk driver

Acute physical	Drought

Primary potential impact
Reduction or disruption in production capacity

Company-specific description
Groundwater Scarcity (Australia) - Decreased average total annual rainfall causes drier surface conditions and underground aquifers to be replenished slowly. This would impact on operations that source drinking and operational water from aquifers.

Timeframe
More than 6 years

Magnitude of potential impact
High

Likelihood
More likely than not

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure - minimum (currency)
0

Potential financial impact figure - maximum (currency)
5095287

Explanation of financial impact
The potential financial impact has been modelled based on a gold price of AUD 3000 per ounce and using the RCP 8.5 climate scenario for the year 2031 (aligned with long-term definition) relevant to Australian assets. The figure represents the potential change in total water costs due to changes in average annual rainfall.
RCP 8.5 is representative of Northern Star's Climate Scenario 3 'Regressive Action' described in Appendix B of our CY20 Sustainability Report:
https://www.nsrltd.com/investor-and-media/asx-announcements/2021/february/2020-sustainability-report

Primary response to risk
Adopt water efficiency, water reuse, recycling and conservation practices

Description of response
Key control measures include:
• Third party annual and triennial reviews of usage and aquifer health at WA sites
• Recycled water use with underground and processing
• Decant water from tailings facilities for reuse in all our operating process plants
• Completed thickener installation at existing operations and consider thickeners at all new or expanding sites
• Setting water intensity reduction targets
• Develop group water security strategy (incl. identification of consumption metrics, water efficiency opportunities and baseline data/targets)
• Investigate water storage evaporation reduction at water negative sites.
• Investigate construction of supplementary borefields at applicable sites
• Consider open pit resources for water harvesting opportunities
• Monitoring at all sites
• Site specifc water balances maintained

Cost of response

Explanation of cost of response

Country/Area & River basin

Australia	Other, please specify (Western Plateau - Salt Lakes)

Type of risk & Primary risk driver

Acute physical	Flood (coastal, fluvial, pluvial, groundwater)

Primary potential impact
Reduction or disruption in production capacity

Company-specific description
Flooding (Australia) - In Western Australia, rainfall is becoming more concentrated and cyclones more severe

Timeframe
More than 6 years

Magnitude of potential impact
High

Likelihood
More likely than not

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure - minimum (currency)
1565953

Potential financial impact figure - maximum (currency)
1799136

Explanation of financial impact
The potential financial impact has been modelled based on a gold price of AUD 3000 per ounce and using the RCP 8.5 climate scenario for the year 2031 (aligned with long-term definition) and for all Australian assets. The figure represents the financial impact range related to physical disruption to operations due to changes in rainfall and flooding events.
RCP 8.5 is representative of Northern Star's Climate Scenario 3 'Regressive Action' described in Appendix B of our CY20 Sustainability Report:
https://www.nsrltd.com/investor-and-media/asx-announcements/2021/february/2020-sustainability-report

Primary response to risk
Develop flood emergency plans

Description of response
Key control measures include:

• Flood management included in site based management plans
• Surface water management infrastructure installed at all sites (e.g. diversion ditches, bunds)
• Water level monitoring at surface water structures
• Severe Weather and Cyclone Management Plans and Procedures in place
• Scenario analysis completed as per TCFD recommendations
• Flood mitigation infrastructure review
• Update and review current risk profile of storm events
• Set a minimum standard on the level of buffer/contingency to be retained at sites for key processing consumables and diesel
• Review flood mitigation infrastructure for each site
• Identify water storage areas onsite to handle and store increased water prior to treatment/disposal.
• Asset review to ensure contingency equipment (e.g. dewatering pumps) on site is suitable, available and still in working order

Cost of response

Explanation of cost of response

Country/Area & River basin

United States of America	Yukon River

Type of risk & Primary risk driver

Acute physical	Flood (coastal, fluvial, pluvial, groundwater)

Primary potential impact
Reduction or disruption in production capacity

Company-specific description
Flooding (Alaska) - In Alaska, total rainfall is increasing and permafrost melting off-site, both pointing to an increase in the frequency and severity of floods.

Timeframe
More than 6 years

Magnitude of potential impact
High

Likelihood
More likely than not

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure - minimum (currency)
712391

Potential financial impact figure - maximum (currency)
768766

Explanation of financial impact
The potential financial impact has been modelled based on a gold price of AUD 3000 per ounce and using the RCP 8.5 climate scenario for the year 2031 (aligned with long-term definition) and for our Pogo operations. The figure represents the potential financial impact range related to physical disruption to operations due to changes in rainfall and flooding events.
RCP 8.5 is representative of Northern Star's Climate Scenario 3 'Regressive Action' described in Appendix B of our CY20 Sustainability Report: https://www.nsrltd.com/investor-and-media/asx-announcements/2021/february/2020-sustainability-report

Primary response to risk
Develop flood emergency plans

Description of response
Key control measures include:
• Flood management included in site based management plans
• Surface water management infrastructure installed at all sites (e.g. diversion ditches, bunds)
• Water level monitoring at surface water structures
• Severe Weather and Cyclone Management Plans and Procedures in place
• Scenario analysis completed as per TCFD recommendations
• Flood mitigation infrastructure review
• Update and review current risk profile of storm events
• Set a minimum standard on the level of buffer/contingency to be retained at sites for key processing consumables and diesel
• Review flood mitigation infrastructure for each site
• Identify water storage areas onsite to handle and store increased water prior to treatment/disposal.
• Asset review to ensure contingency equipment (e.g. dewatering pumps) on site is suitable, available and still in working order

Cost of response

Explanation of cost of response

W4.2c

(W4.2c) Why does your organization not consider itself exposed to water risks in its value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	

W4.3

(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

Type of opportunity
Efficiency

Primary water-related opportunity
Cost savings

Company-specific description & strategy to realize opportunity
Northern Star's FY22 long term incentive performance rights KPIs require Northern Star to reduce its baseline usage of potable scheme water sources (KCGM) by 10% by 30 June 2025. This performance target is aligned with Northern Star's commitment to demonstrating good environmental management and social responsibility through identifying and implementing water use efficiencies in its operations. Our KCGM operation uses water balance models and systems to identify water efficiency and management opportunities, and is well underway to achieving its long term target, having reported ...

Further work has been undertaken on site with an anticipated total reduction in potable use across the site by a forecast daily average of around 900KL per day.

A broad range of actions taken and initiatives implemented by KCGM, including:
• replacing potable water with saline water used in diamond drill rigs at Mt Charlotte Underground
• the installation of automatic vaporiser change-over equipment for de-icing liquid oxygen plant vaporisers at the Gidji Processing Plant;
• locking potable water standpipes in the processing plants to ensure that saline water is used for certain dust suppression and washdown activities;
• doing water leak detection audits in the processing plants prior to maintenance shutdowns so that repairs can be scheduled during the shutdowns;
• regular flow meter and data monitoring of water use patterns to identify and respond to unusual or excessive water use;
• installing minimum 3 Star WELS rated water efficient fixtures and fittings in change rooms and bathrooms;
• converting assets within the processing plant over to utilising processing water instead of potable water; and
• encouraging waterwise behaviour through displaying water saving posters and stickers in these facilities.

Estimated timeframe for realization
1 to 3 years

Magnitude of potential financial impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
400000

Potential financial impact figure – maximum (currency)
60000000

Explanation of financial impact
Positive financial impact immediately, and into the future for the business by the reduction in purchasing of potable scheme water. Based on the current budget price of potable water, we anticipate on saving $400K per annum or up to AUD$60M over the life of the contract with the improved water changes made to date.

Type of opportunity
Efficiency

Primary water-related opportunity
Improved water efficiency in operations

Company-specific description & strategy to realize opportunity
Key water uses across our operations are processing and beneficiation purposes, as well as dust suppression.
The expanded Thunderbox mill, now complete, includes an additional 18 metre diameter tailings thickener. The additional thickener greatly increases water efficiency within the mill, currently allowing for around 40% of water within the tailings slurry to be recovered and recycled in the mill. Additional thickening capacity greatly increases water efficiencies.
The potential for additional thickening capacity will be considered for all prospective mill expansions across the business.

Estimated timeframe for realization
1 to 3 years

Magnitude of potential financial impact
Please select

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact

W5. Facility-level water accounting

(W5.1) For each facility referenced in W4.1c, provide coordinates, water accounting data, and a comparison with the previous reporting year.

Facility reference number
Facility 1

Facility name (optional)
Carosue Dam Operations (includes Carosue Dam, Porphry and Deep South)

Country/Area & River basin

Australia	Other, please specify (Western Plateau - Salt Lakes)

Latitude
-30.153752

Longitude
122.350349

Located in area with water stress
Yes

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
6298

Comparison of total withdrawals with previous reporting year
Much higher

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Withdrawals from brackish surface water/seawater
0

Withdrawals from groundwater - renewable
6298

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
0

Total water discharges at this facility (megaliters/year)
0

Comparison of total discharges with previous reporting year
About the same

Discharges to fresh surface water
0

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
0

Total water consumption at this facility (megaliters/year)
6298

Comparison of total consumption with previous reporting year
Much higher

Please explain

These FY2023 breakdowns of all water withdrawals/discharges/consumption by location, source or quality will be publicly available in our FY23 Performance Data Tables to be released and published on our website on the 24th August 2023.

Facility reference number
Facility 2

Facility name (optional)
Kalgoorlie Operations (includes Kanowna Belle and South Kalgoorlie operations).

Country/Area & River basin

Australia	Other, please specify (Western Plateau - Salt Lakes)

Latitude
-30.603864

Longitude
121.578231

Located in area with water stress
Yes

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
2363

Comparison of total withdrawals with previous reporting year
Lower

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
0.23

Withdrawals from brackish surface water/seawater
0

Withdrawals from groundwater - renewable
2184

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
178.83

Total water discharges at this facility (megaliters/year)
0

Comparison of total discharges with previous reporting year
Much lower

Discharges to fresh surface water
0

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
0

Total water consumption at this facility (megaliters/year)
2363

Comparison of total consumption with previous reporting year
Lower

Please explain
The mill at our South Kalgoorlie Operations was put into care and maintenance in August 2022, reducing water consumption.
These FY2023 breakdowns of all water withdrawals/discharges/consumption by location, source or quality will be publicly available in our FY23 Performance Data Tables to be released and published on our website on the 24th August 2023.

Facility reference number
Facility 3

Facility name (optional)
KCGM Operations

Country/Area & River basin

Australia	Other, please specify (Western Plateau - Salt Lakes)

Latitude
-30.777598

Longitude
121.50389

Located in area with water stress
Yes

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
6419

Comparison of total withdrawals with previous reporting year
Higher

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Withdrawals from brackish surface water/seawater
427

Withdrawals from groundwater - renewable
4730

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
1261

Total water discharges at this facility (megaliters/year)
0

Comparison of total discharges with previous reporting year
About the same

Discharges to fresh surface water
0

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
0

Total water consumption at this facility (megaliters/year)
6419

Comparison of total consumption with previous reporting year
Much higher

Please explain
These FY2023 breakdowns of all water withdrawals/discharges/consumption by location, source or quality will be publicly available in our FY23 Performance Data Tables to be released and published on our website on the 24th August 2023.

Facility reference number
Facility 4

Facility name (optional)
Jundee Operations

Country/Area & River basin

Australia	Other, please specify (Western Plateau - Salt Lakes)

Latitude
-26.358869

Longitude
120.620634

Located in area with water stress
Yes

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
2037

Comparison of total withdrawals with previous reporting year
About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Withdrawals from brackish surface water/seawater
0

Withdrawals from groundwater - renewable
2037

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
0

Total water discharges at this facility (megaliters/year)
0

Comparison of total discharges with previous reporting year
About the same

Discharges to fresh surface water
0

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
0

Total water consumption at this facility (megaliters/year)
2037

Comparison of total consumption with previous reporting year
About the same

Please explain
There were no significant operational changes that affected water consumption in FY23.
These FY2023 breakdowns of all water withdrawals/discharges/consumption by location, source or quality will be publicly available in our FY23 Performance Data Tables to be released and published on our website on the 24th August 2023.

Facility reference number
Facility 5

Facility name (optional)
Bronzewing

Country/Area & River basin

Australia	Other, please specify (Western Plateau - Salt Lakes)

Latitude
-27.383406

Longitude
121.005978

Located in area with water stress
Yes

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
250

Comparison of total withdrawals with previous reporting year
Much higher

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Withdrawals from brackish surface water/seawater
0

Withdrawals from groundwater - renewable
250

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
0

Total water discharges at this facility (megaliters/year)
0

Comparison of total discharges with previous reporting year
About the same

Discharges to fresh surface water
0

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
0

Total water consumption at this facility (megaliters/year)
250

Comparison of total consumption with previous reporting year
Much higher

Please explain
Consumption increased at Bronzewing due to a five-fold increase in people at the camp, as well as increased dewatering after the pit was inundated with rain in May. These FY2023 breakdowns of all water withdrawals/discharges/consumption by location, source or quality will be publicly available in our FY23 Performance Data Tables to be released and published on our website on the 24th August 2023.

Facility reference number
Facility 6

Facility name (optional)
Thunderbox Operations

Country/Area & River basin

Australia	Other, please specify (Western Plateau - Salt Lakes)

Latitude
-28.192009

Longitude
121.008142

Located in area with water stress
Yes

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
5509

Comparison of total withdrawals with previous reporting year
Much higher

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Withdrawals from brackish surface water/seawater
0

Withdrawals from groundwater - renewable
5509

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
0

Total water discharges at this facility (megaliters/year)
0

Comparison of total discharges with previous reporting year
About the same

Discharges to fresh surface water
0

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
0

Total water consumption at this facility (megaliters/year)
5509

Comparison of total consumption with previous reporting year
Much higher

Please explain
The mill at Thunderbox underwent a major upgrade and commissioning, increasing water demand.
These FY2023 breakdowns of all water withdrawals/discharges/consumption by location, source or quality will be publicly available in our FY23 Performance Data Tables to be released and published on our website on the 24th August 2023.

Facility reference number
Facility 7

Facility name (optional)
Pogo

Country/Area & River basin

United States of America	Yukon River

Latitude
64.453265

Longitude
-144.902773

Located in area with water stress
No

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
29642

Comparison of total withdrawals with previous reporting year
Higher

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
28367

Withdrawals from brackish surface water/seawater
0

Withdrawals from groundwater - renewable
1274.4

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
0.14

Total water discharges at this facility (megaliters/year)
27717

Comparison of total discharges with previous reporting year
Higher

Discharges to fresh surface water
27717

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
0

Total water consumption at this facility (megaliters/year)
1926

Comparison of total consumption with previous reporting year
Much higher

Please explain
These FY2023 breakdowns of all water withdrawals/discharges/consumption by location, source or quality will be publicly available in our FY23 Performance Data Tables to be released and published on our website on the 24th August 2023.

W5.1a

(W5.1a) For the facilities referenced in W5.1, what proportion of water accounting data has been third party verified?

Water withdrawals – total volumes

% verified
Not verified

Verification standard used
<Not Applicable>

Please explain
Northern Star is currently preparing its FY2023 water data for public release with its FY2023 Sustainability Report on 24 August 2023.
The following water performance data will be independently assured in accordance with the GRI 303: Water and Effluents 2018 Standard: disclosure 303-3 Water withdrawal; disclosure 303-4 Water discharge; disclosure 303-5 Water consumption.
This has not yet happened as Northern Star is still in the process of collating and analysing its FY2023 emissions data.

Water withdrawals – volume by source

% verified
Not verified

Verification standard used
<Not Applicable>

Please explain
Northern Star is currently preparing its FY2023 water data for public release with its FY2023 Sustainability Report on 24 August 2023.
The following water performance data will be independently assured in accordance with the GRI 303: Water and Effluents 2018 Standard: disclosure 303-3 Water withdrawal; disclosure 303-4 Water discharge; disclosure 303-5 Water consumption.
This has not yet happened as Northern Star is still in the process of collating and analysing its FY2023 emissions data.

Water withdrawals – quality by standard water quality parameters

% verified
Not verified

Verification standard used
<Not Applicable>

Please explain
Northern Star is currently preparing its FY2023 water data for public release with its FY2023 Sustainability Report on 24 August 2023.
The following water performance data will be independently assured in accordance with the GRI 303: Water and Effluents 2018 Standard: disclosure 303-3 Water withdrawal; disclosure 303-4 Water discharge; disclosure 303-5 Water consumption.
This has not yet happened as Northern Star is still in the process of collating and analysing its FY2023 emissions data.

Water discharges – total volumes

% verified
Not verified

Verification standard used
<Not Applicable>

Please explain
Northern Star is currently preparing its FY2023 water data for public release with its FY2023 Sustainability Report on 24 August 2023.
The following water performance data will be independently assured in accordance with the GRI 303: Water and Effluents 2018 Standard: disclosure 303-3 Water withdrawal; disclosure 303-4 Water discharge; disclosure 303-5 Water consumption.
This has not yet happened as Northern Star is still in the process of collating and analysing its FY2023 emissions data.

Water discharges – volume by destination

% verified
Not verified

Verification standard used
<Not Applicable>

Please explain
Northern Star is currently preparing its FY2023 water data for public release with its FY2023 Sustainability Report on 24 August 2023.
The following water performance data will be independently assured in accordance with the GRI 303: Water and Effluents 2018 Standard: disclosure 303-3 Water withdrawal; disclosure 303-4 Water discharge; disclosure 303-5 Water consumption.
This has not yet happened as Northern Star is still in the process of collating and analysing its FY2023 emissions data.

Water discharges – volume by final treatment level

% verified
Not verified

Verification standard used
<Not Applicable>

Please explain
Northern Star is currently preparing its FY2023 water data for public release with its FY2023 Sustainability Report on 24 August 2023.
The following water performance data will be independently assured in accordance with the GRI 303: Water and Effluents 2018 Standard: disclosure 303-3 Water withdrawal; disclosure 303-4 Water discharge; disclosure 303-5 Water consumption.
This has not yet happened as Northern Star is still in the process of collating and analysing its FY2023 emissions data.

Water discharges – quality by standard water quality parameters

% verified
Not verified

Verification standard used
<Not Applicable>

Please explain
Northern Star is currently preparing its FY2023 water data for public release with its FY2023 Sustainability Report on 24 August 2023.
The following water performance data will be independently assured in accordance with the GRI 303: Water and Effluents 2018 Standard: disclosure 303-3 Water withdrawal; disclosure 303-4 Water discharge; disclosure 303-5 Water consumption.
This has not yet happened as Northern Star is still in the process of collating and analysing its FY2023 emissions data.

Water consumption – total volume

% verified
Not verified

Verification standard used
<Not Applicable>

Please explain
Northern Star is currently preparing its FY2023 water data for public release with its FY2023 Sustainability Report on 24 August 2023.
The following water performance data will be independently assured in accordance with the GRI 303: Water and Effluents 2018 Standard: disclosure 303-3 Water withdrawal; disclosure 303-4 Water discharge; disclosure 303-5 Water consumption.
This has not yet happened as Northern Star is still in the process of collating and analysing its FY2023 emissions data.

W6. Governance

W6.1

(W6.1) Does your organization have a water policy?
Yes, we have a documented water policy that is publicly available

W6.1a

(W6.1a) Select the options that best describe the scope and content of your water policy.

	Scope	Content	Please explain
Row 1	Company-wide	Commitment to stakeholder education and capacity building on water security Commitment to water stewardship and/or collective action Commitments beyond regulatory compliance Recognition of environmental linkages, for example, due to climate change	Our Climate Change Policy states our commitment to: (a) adapting to potential physical impacts of climate change by enhancing the resilience of our operations e.g. water security and consumption; and (b) engaging where appropriate with government to reduce global emissions, improve ecosystem resilience and water conservation. NSR-COR-034-POL - Climate Change Policy.pdf

W6.2

(W6.2) Is there board level oversight of water-related issues within your organization?
Yes

W6.2a

(W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.

Position of individual or committee	Responsibilities for water-related issues
Board-level committee	The key responsibilities of the Environmental, Social & Safety (ESS) Committee (Committee) are to assist the Board in implementing ESS strategies and ensuring responsible and sustainable business practices, and oversight of workplace health & safety, environmental management including climate change, community & social responsibility, business ethics and long term ESS strategic goals. The Committee comprises at least three Directors of which two must be independent non-executive Directors. The Chair of the Committee must be an independent non-executive Director with sufficient related experience, appointed by the Board from the Committee's members and will not be the Chair of the Board. At 30 June 2023, the Committee comprised three Directors, all independent non executive Directors – Sally Langer (Chair), Sharon Warburton and Marnie Finlayson.
Board Chair	Independent Chair responsible for leadership of the Board.

W6.2b

(W6.2b) Provide further details on the board's oversight of water-related issues.

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	Reviewing and guiding risk management policies	The ESS Committee is responsible for reviewing the climate change risk register twice yearly, reviewing the ESS risk register annually and reviewing the ESS strategy annually. The People & Culture Committee reviews and makes recommendations to the Board in relation to Key Management Personnel and other executives in respect of remuneration policy and its link to performance. In FY22, the remuneration framework included a policy objective to focus on positive ESG outcomes, which included a focus on water conservation in the 5% weighted KPI for the FY22 long term incentive 1 (LTI-1) grant (measurement period 1 July 2021 to 30 June 2025): KPI: To reduce baseline usage on potable scheme water sources (KCGM) by 10%. No equivalent water-related KPI was included in the FY23 LTI grant, however the FY23 short term incentive (STI) grant (measurement period 1 July 2022 to 30 June 2023) included a 5% weighted KPI requiring: "Nil materially adverse community, heritage or environmental incidents" generally.

W6.2d

(W6.2d) Does your organization have at least one board member with competence on water-related issues?

	Board member(s) have competence on water-related issues	Criteria used to assess competence of board member(s) on water-related issues	Primary reason for no board-level competence on water-related issues	Explain why your organization does not have at least one board member with competence on water-related issues and any plans to address board-level competence in the future
Row 1	Yes	In FY22, an in-depth analysis of the Board's skills and experience was undertaken, by each Non-Executive Director (NED) completing a self-assessment against 69 skills, grouped into 9 categories, from 'Limited' to 'Expert'. The Sustainability skill category covered climate change, part of which is skills expertise and experience dealing with water-related issues, with the NEDs collectively scoring in the second quartile (62 out of 100) for this category, meaning the average NED had 'Advanced' skills and/or experience with climate change. The Board skills matrix is being reviewed again in FY23, with results to be disclosed in the FY23 Annual Report. However, given 6 out of 7 Non-Executive Directors that undertook the FY22 Board skills matrix remain on the Board (as at end of FY23), the FY22 disclosed matrix is informative of current Board competence on climate-related issues.	<Not Applicable>	<Not Applicable>

W6.3

(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).

Name of the position(s) and/or committee(s)
Other C-Suite Officer, please specify (Managing Director and Chief Executive Officer)

Water-related responsibilities of this position
Assessing water-related risks and opportunities
Managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues
More frequently than quarterly

Please explain

Name of the position(s) and/or committee(s)
Other C-Suite Officer, please specify (Chief Legal Officer & Company Secretary)

Water-related responsibilities of this position
Other, please specify (Disclosure of assessments and managing of water-related risks and opportunities)

Frequency of reporting to the board on water-related issues
More frequently than quarterly

Please explain
This role has executive responsibility for Environment, Social Performance and ESG engagement.

Name of the position(s) and/or committee(s)
Other C-Suite Officer, please specify (Chief Technical Officer)

Water-related responsibilities of this position
Assessing water-related risks and opportunities
Managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues
More frequently than quarterly

Please explain
Existing projects in relation to tailings storage facilities for example, and Growth projects in relation to ensuring water resources available are sufficient and accommodated in the permitting timeline for the projects.

Name of the position(s) and/or committee(s)
Other C-Suite Officer, please specify (Chief Operating Officer)

Water-related responsibilities of this position
Assessing water-related risks and opportunities

Frequency of reporting to the board on water-related issues
More frequently than quarterly

Please explain
Involved in ensuring the General Managers at each site are forecasting and arranging for permitting of any increase in water resources, to ensure continuity of operations particularly those undergoing processing plant expansions such as Thunderbox and KCGM operations.

W6.4

(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	Northern Star's FY22 long term incentive (LTI) grant included a policy objective to focus on positive ESG outcomes, which included a focus on water usage in the 5% weighted KPI for the FY22 LTI-1 grant (measurement period 1 July 2021 to 30 June 2025): KPI: To reduce baseline usage of potable scheme water sources (KCGM) by 10% by 30 June 2025. This performance target is aligned with Northern Star's commitment to demonstrating good environmental management and social responsibility through identifying and implementing water use efficiencies in its operations.

W6.4a

(W6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?

	Role(s) entitled to incentive	Performance indicator	Contribution of incentives to the achievement of your organization's water commitments	Please explain
Monetary reward	Please select	Please select		
Non-monetary reward	Corporate executive team Other, please specify (Management Group)	Reduction in water consumption volumes – direct operations	Northern Star's FY22 Long Term Incentive Performance Rights KPIs require Northern Star to reduce its baseline usage of potable scheme water sources (KCGM) by 10% by 30 June 2025.	

W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

Yes, trade associations

W6.5a

(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?

Northern Star has in place formal Senior Management and Board approval processes for its direct and indirect activities which actively include water obligation/commitment considerations.

W6.6

(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

Yes (you may attach the report - this is optional)
Sustainability Report 2022.pdf
Annual Report 2022.pdf

W7. Business strategy

W7.1

(W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	5-10	
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	5-10	
Financial planning	Yes, water-related issues are integrated	5-10	

W7.2

(W7.2) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

Row 1

Water-related CAPEX (+/- % change)

Anticipated forward trend for CAPEX (+/- % change)

Water-related OPEX (+/- % change)

Anticipated forward trend for OPEX (+/- % change)

Please explain

W7.3

(W7.3) Does your organization use scenario analysis to inform its business strategy?

	Use of scenario analysis	Comment
Row 1	Yes	Please refer to our CY2020 Sustainability Report for more information on our Climate Change Scenario Analysis work which incorporated water risks and opportunities. https://www.nsrltd.com/investor-and-media/asx-announcements/2021/february/2020-sustainability-report Please refer to our CY2021 Sustainability Report for more information on key Climate Change Related Risks and Opportunities, which includes water related risks and opportunities: https://www.nsrltd.com/investor-and-media/asx-announcements/2022/february/2021-sustainability-report

W7.3a

(W7.3a) Provide details of the scenario analysis, what water-related outcomes were identified, and how they have influenced your organization's business strategy.

	Type of scenario analysis used	Parameters, assumptions, analytical choices	Description of possible water-related outcomes	Influence on business strategy
Row 1	Climate-related	TCFD recommendations, RCP 2.6, RCP 4.5, RCP 8.5	Please refer to Section W4 of the CDP Water Security Questionnaire on Risks and Opportunities	Please refer to Section W4 of the CDP Water Security Questionnaire on Risks and Opportunities

W7.4

(W7.4) Does your company use an internal price on water?

Row 1

Does your company use an internal price on water?

No, and we do not anticipate doing so within the next two years

Please explain

W7.5

(W7.5) Do you classify any of your current products and/or services as low water impact?

	Products and/or services classified as low water impact	Definition used to classify low water impact	Primary reason for not classifying any of your current products and/or services as low water impact	Please explain
Row 1	No, and we do not plan to address this within the next two years	<Not Applicable>	Please select	

W8. Targets

W8.1

(W8.1) Do you have any water-related targets?

Yes

W8.1a

(W8.1a) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.

	Target set in this category	Please explain
Water pollution	Please select	<Not Applicable>
Water withdrawals	Please select	<Not Applicable>
Water, Sanitation, and Hygiene (WASH) services	Please select	<Not Applicable>
Other	Yes	<Not Applicable>

W8.1b

(W8.1b) Provide details of your water-related targets and the progress made.

Target reference number
Target 1

Category of target
Water consumption

Target coverage
Site/facility

Quantitative metric
Other, please specify (Northern Star's FY22 Long Term Incentive Performance Rights KPIs require Northern Star to reduce its baseline usage of potable scheme water sources (KCGM) by 10% by 30 June 2025.)

Year target was set
2022

Base year
2021

Base year figure
1633704

Target year
2025

Target year figure
1470334

Reporting year figure
1146919

% of target achieved relative to base year
297.964742608802

Target status in reporting year
Underway

Please explain
This performance target is aligned with Northern Star's commitment to demonstrating good environmental management and social responsibility through identifying and implementing water use efficiencies in its
operations.
Our KCGM operation uses water balance models and systems to identify water efficiency and management opportunities, and is well underway to achieving its long term target, with a 29.8% decrease achieved from FY2021 to FY2023.
A broad range of actions taken and initiatives implemented by KCGM, including:
• replacing potable water with saline water used in diamond drill rigs at Mt Charlotte Underground
• the installation of automatic vaporiser change-over equipment for de-icing liquid oxygen plant vaporisers at the Gidji Processing Plant;
• locking potable water standpipes in the processing plants to ensure that saline water is used for certain dust suppression and washdown activities;
• doing water leak detection audits in the processing plants prior to maintenance shutdowns so that repairs can be scheduled during the shutdowns;
• regular flow meter and data monitoring of water use patterns to identify and respond to unusual or excessive water use;
• installing minimum 3 Star WELS rated water efficient fixtures and fittings in change rooms and bathrooms;
• converting assets within the processing plant over to utilising processing water instead of potable water; and
• encouraging waterwise behaviour through displaying water saving posters and stickers in these facilities.

W9. Verification

W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?
In progress

W10. Plastics

W10.1

(W10.1) Have you mapped where in your value chain plastics are used and/or produced?

	Plastics mapping	Value chain stage	Please explain
Row 1	Not mapped – and we do not plan to within the next two years	<Not Applicable>	

W10.2

(W10.2) Across your value chain, have you assessed the potential environmental and human health impacts of your use and/or production of plastics?

	Impact assessment	Value chain stage	Please explain
Row 1	Not assessed – and we do not plan to within the next two years	<Not Applicable>	

W10.3

(W10.3) Across your value chain, are you exposed to plastics-related risks with the potential to have a substantive financial or strategic impact on your business? If so, provide details.

	Risk exposure	Value chain stage	Type of risk	Please explain
Row 1	Not assessed – and we do not plan to within the next two years	<Not Applicable>	<Not Applicable>	

W10.4

(W10.4) Do you have plastics-related targets, and if so what type?

	Targets in place	Target type	Target metric	Please explain
Row 1	No – and we do not plan to within the next two years	<Not Applicable>	<Not Applicable>	

W10.5

(W10.5) Indicate whether your organization engages in the following activities.

	Activity applies	Comment
Production of plastic polymers	No	
Production of durable plastic components	No	
Production / commercialization of durable plastic goods (including mixed materials)	No	
Production / commercialization of plastic packaging	No	
Production of goods packaged in plastics	No	
Provision / commercialization of services or goods that use plastic packaging (e.g., retail and food services)	No	

W11. Sign off

W-FI

(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

W11.1

(W11.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1	Chief Legal Officer & Company Secretary	Other C-Suite Officer

Submit your response

In which language are you submitting your response?
English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please indicate your consent for CDP to share contact details with the Pacific Institute to support content for its Water Action Hub website.
Yes, CDP may share our Main User contact details with the Pacific Institute

Please confirm below

I have read and accept the applicable Terms