

ANNUAL REPORT

2023-24

This document is a **plain language summary** of the full annual report, which provides more detail about activities and progress in 2023-24.

GIANT MINE
**REMEDICATION
PROJECT**

Canada 

INTRODUCTION TO THE GIANT MINE REMEDIATION PROJECT

The Giant Mine is a former gold mine located within Yellowknife, Northwest Territories city limits. It is about 5 km north of the city centre. The Giant Mine operated from 1948 to 2004.

When the owners went bankrupt, Canada became responsible for the site and the contamination left behind. This includes 13.5 million tonnes of tailings and 237,000 tonnes of arsenic trioxide waste.

The Giant Mine Remediation Project (the Project) is jointly managed by:



Crown-Indigenous Relations
and Northern Affairs Canada
Relations Couronne-Autochtones
et Affaires du Nord Canada



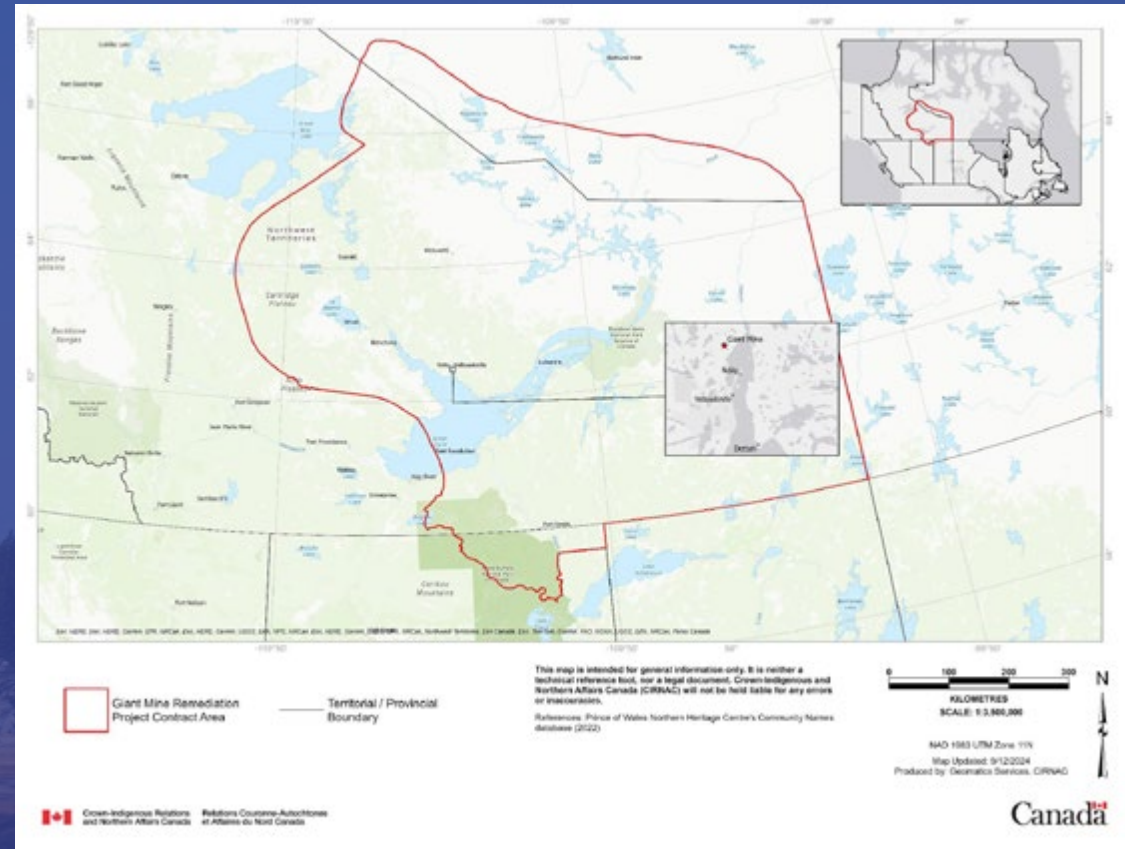
Government of
Northwest Territories
Gouvernement des
Territoires du Nord-Ouest



LOCATION

The GMRP site lies within the asserted traditional territory of the following Indigenous communities and groups:

- Yellowknives Dene First Nation
- Tłıchǫ
- North Slave Métis Alliance
- Northwest Territories Métis Nation





ABOUT THE ANNUAL REPORT

This annual report covers the period from April 1, 2023, to March 31, 2024.

Activities and updates related to the Project after March 31 will be covered in next year's report.

The Project team is required to prepare an annual report as part of the terms of the Giant Mine Remediation Project [Environmental Agreement](#). The agreement guides what information the Project must include in the report.

The Giant Mine Oversight Board reviews and comments on the report each year.

PROJECT STATUS





PROGRESS TOWARDS REMEDIATION

- In 2007, the Giant Mine Remediation Project team submitted a Water Licence application to the Mackenzie Valley Land and Water Board. The City of Yellowknife referred this plan to Environmental Assessment. The assessment was completed in 2014.
- The board approved the Project's Land Use Permit in August 2020 and the Water Licence in September 2020. These can be found on the [board's public registry](#).
- In July 2021, the GMRP moved from Phase 1, which focused on care and maintenance, planning, and urgent works, into Phase 2, which focuses on active remediation and adaptive management.

PROGRESS ON ENVIRONMENTAL ASSESSMENT MEASURES

The Report of Environmental Assessment included 26 measures. Since the Report of Environmental Assessment, the Project has completed and advanced many measures.

IN 2023-24, THE PROJECT FOCUSED ON:

- Measure 9: Advancing the Yellowknife Health Effects Monitoring Program
- Measure 23: Completing a draft Tailings Management and Monitoring Plan
- Measure 26: Releasing a Request for Proposal to complete the first version of the Perpetual Care Plan

	STATUS	MEASURES	SUGGESTIONS
	Completed	3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 18, 19, 22, 23	8, 13, 15
	Underway	9, 17, 20, 21, 25, 26	1, 2, 3, 9, 10, 11, 12, 14, 16
	Future Action Required	2, 24	
	No Action Required / Outside Scope of Project	1	4, 5, 6, 7

Please see Appendix D of the full report for the full list of measures and GMRP progress.

ADVANCEMENT OF REMEDIATION DESIGNS AND ACTIVITIES

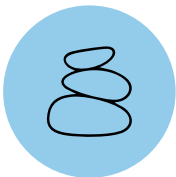
In 2023-24, the Project advanced remediation designs and activities for several project items:



Further prepared for the freeze program by inspecting and monitoring future freeze sites.



Continued to stabilize the underground by adding paste to fill voids and stopes.



Submitted the Borrow Design Plan to the Mackenzie Valley Land and Water Board.



Started construction of the Water Treatment Plant.



Completed drilling and sampling of the C1 Pit fill and studied water drainage within pits.



Completed taking down the Townsite Area and continued to remove debris materials from the Giant Mine site.



Completed construction of the Non-Hazardous Waste Landfill and added waste throughout the construction season.



Advanced the design of Earthworks Remediation (Tailings, Contaminated Soils, and Open Pits).

ONGOING SITE MANAGEMENT

Ongoing management at the Giant Mine site is critical to ensuring it stays stable and safe for staff, the public, and the environment during remediation.



Maintaining the site



Managing risks



Conducting inspections



Keeping dust levels down



Treating water



Monitoring the environment



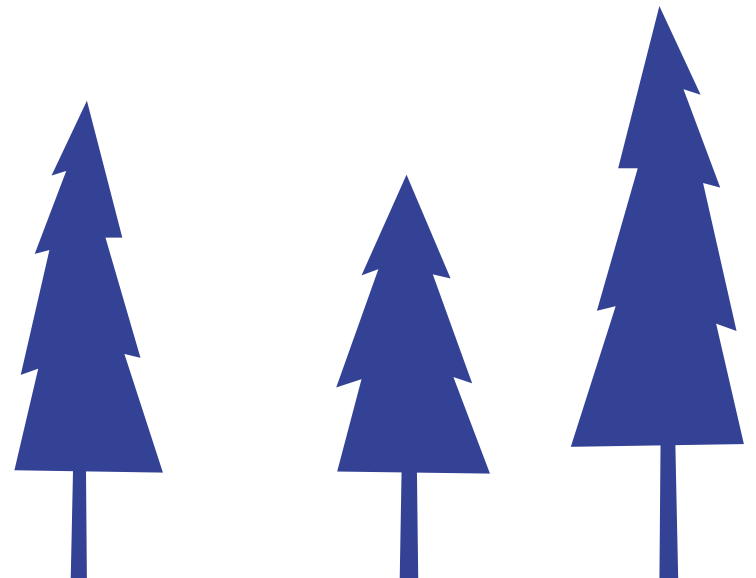
Keeping workers safe and healthy

SAFETY REVIEW OF BUILDINGS

- Every few years, the Project reviews buildings on site for safety risks. Reviews were done in 2019, 2021, and again in 2023.
- **The 2023-24 review of 8 Core Area Buildings found:**
 - **1 building** as “**Green**” – no noticeable damage and is expected to last for at least 10 years.
 - **5 buildings** as “**Yellow**” - has been affected but is expected to last for 5 years.
 - **2 buildings** as “**Red**” - has been significantly affected and is expected to last for no more than 5 years.
 - **0 buildings** as “**Black**” - failure is possible and likely.

MAINTAINING THE MINE WATER POOL

- The **Northwest Deep Well Pumping Station** pumps water out of the underground at Giant Mine so that the water level in the mine stays well below where the arsenic trioxide is stored.
- One of the pumps stopped working in 2019 and again in 2022.
- The Project Team has reviewed the system to understand what went wrong.
- A spare pump will be installed in 2024.



DAM INSPECTIONS

- Dams are used to manage mine water, surface water, and tailings solids on site. Every year, the GMRP conducts an Annual Geotechnical Inspection of the dams.
- In **2023-24**, the inspection took place in September and included all dams associated with the Original Tailings Containment Area and the Northwest Tailings Containment Area. It was found that, in general, the inspected structures appeared to be performing satisfactorily.

REGULATORY INSPECTIONS

- In **2023-24**, there were 3 external regulatory inspections, which were general inspections of site activities. Two inspections found all items and locations acceptable, while the third noted a delayed report of a spill.
- In **2023-24**, there were also ...

171

internal inspections completed with...

19

noncompliances identified (spills).

The Project has completed or is in the process of completing all identified corrective actions for each of the noncompliances reported.

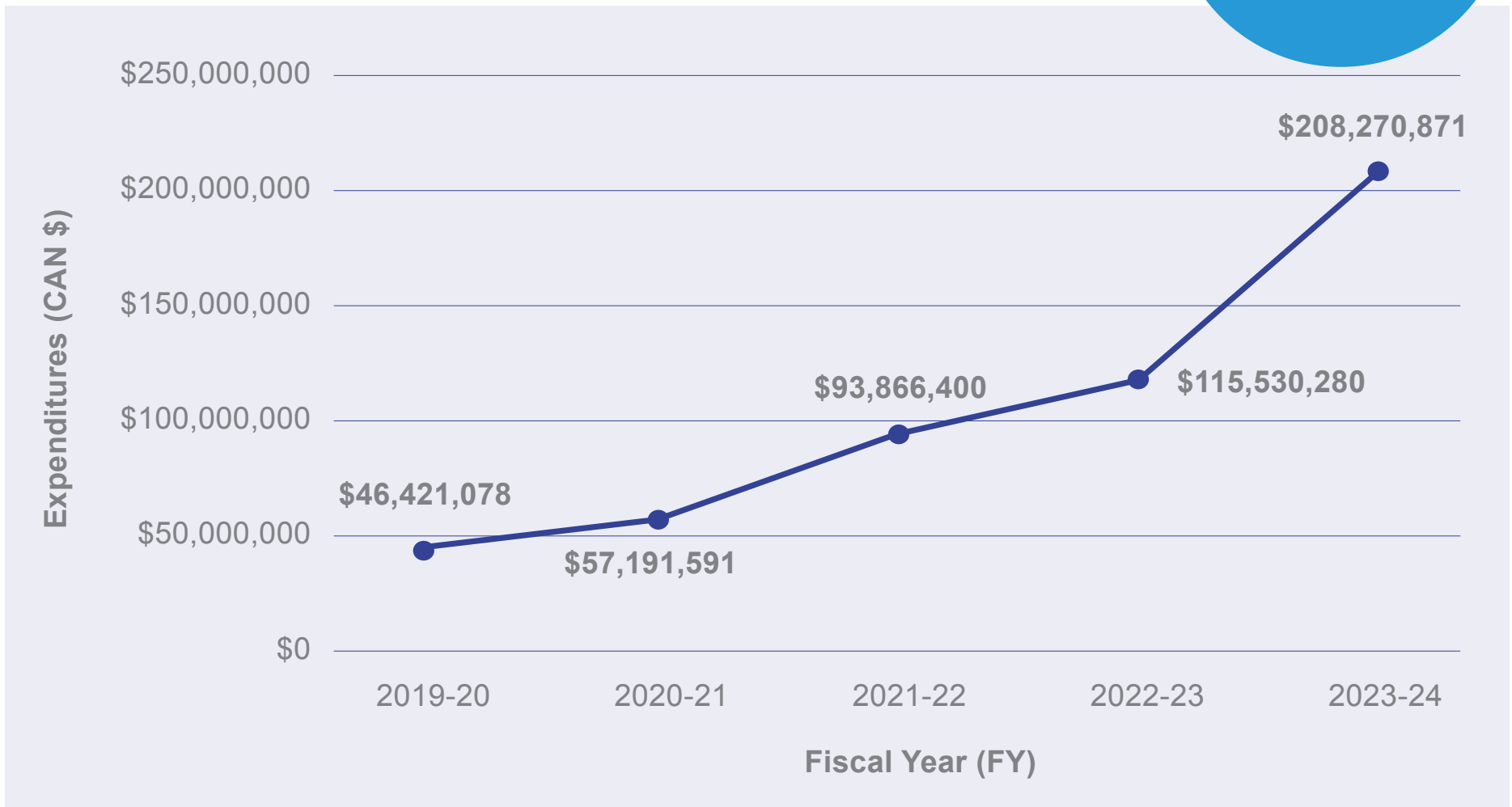
SUMMARY OF EXPENDITURES

The data outlines the Project's expenditures trend from fiscal years 2019-20 to 2023-24.



SUMMARY OF EXPENDITURES TREND 2019-2024

Annual expenditures will increase significantly as construction and earth moving activities ramp up.



SUMMARY OF EXPENDITURES TREND 2019–2024

CATEGORY	2019-20	2020-21	2021-22	2022-23	2023-24
Care and Maintenance	\$18,808,143	\$22,166,327	\$27,095,659	\$28,919,581	\$24,279,218
Regulatory	\$1,214,925	\$1,134,420	\$730,733	\$608,230	\$516,284
Consultation	\$1,747,380	\$1,345,500	\$3,210,463	\$3,294,542	\$3,130,246
Investigation & Assessment	-	-	-	\$23,370	\$3,818,600
Remediation	\$11,047,596	\$14,941,948	\$46,328,945	\$64,683,491	\$156,366,799
Monitoring	\$2,905,555	\$3,727,700	\$5,395,981	\$5,623,059	\$5,152,180
Program Management	\$ 10,697,479	\$13,875,697	\$11,104,618	\$12,378,007	\$15,008,545
Total	\$46,421,078	\$57,191,591	\$93,866,400	\$115,530,280	\$208,270,871

ENVIRONMENT

The Project has an Environmental Management Plan that guides how each major component of the site is managed.



SITE-WIDE MONITORING PROGRAM

The Site-Wide Monitoring Program is a combination of all monitoring currently ongoing or that will be required at Giant Mine. This monitoring includes environmental and geotechnical monitoring required on site.

The monitoring is used to:

- Determine conditions before remediation activities begin, and
- Monitor conditions during remediation and the effectiveness of management programs.

ENVIRONMENTAL MONITORING

- Surveillance Network Program (SNP)
- Metal and Diamond Mining Effluent Regulations (MDMER) including Environmental Effects Monitoring (EEM) Program
- Operational Monitoring Program (OMP) (ETP, underground, annual site-wide bird survey)
- AEMP
- Wildlife and Wildlife Habitat management and Monitoring Plan
- Air quality – site perimeter & community
- Noise



STRUCTURAL MONITORING

- Freeze
- Dams and seeps
- Landfill
- Pit stability
- Tailings covers
- Underground Structures
- Baker Creek (icing)



AIR

- The Project monitors air quality on a regular basis. **In 2023-24**, air quality monitoring showed that air quality was not significantly impacted by Project activities and was similar to regional and local air quality.
 - The wildfires significantly impacted the local airshed, leading to elevated particulate matter in the air.
- **In 2023-24**, the Project team continued to manage dust from the Tailings Containment Areas, road network, and active work areas by using water trucks, water cannons, EcoSoil, and Soiltac.

WATER

The Project monitors water quality alongside remediation activities.

EFFLUENT TREATMENT

The Effluent Treatment Plant treats mine water to protect the environment and people. **In 2023-24**, a total of 179,296 m³ of treated effluent was released into the environment, which is lower than previous years.

EFFLUENT AND WATER QUALITY MONITORING

Water levels were lower because it was a dry year. Surface water quality and ground water quality were similar to previous years with no significant concerns (they were below regulatory levels).

ENVIRONMENTAL AND AQUATIC EFFECTS MONITORING PROGRAMS

The Project team continued its environmental and aquatic effects monitoring programs to assess toxicity of effluent and surface water to fish and benthic invertebrates. In 2023, the total arsenic concentrations were higher in treated effluent compared to 2022 but remained within the historical range. There was no affect to minnow survival and growth, but long-term tests showed affects to water fleas, aquatic plants and algae.

LAND

The Project undertook several activities to monitor and minimize impacts to land and protect the health and safety of the public, on-site workers, and wildlife. **In 2023-24, key activities included:**



Continuing to manage wastes on site in accordance with the Waste Management and Monitoring Plan.



Completing the Non-Hazardous Waste Landfill, which has begun accepting waste.



Continuing to implement the Wildlife and Wildlife Habitats Management and Monitoring Plan on site.



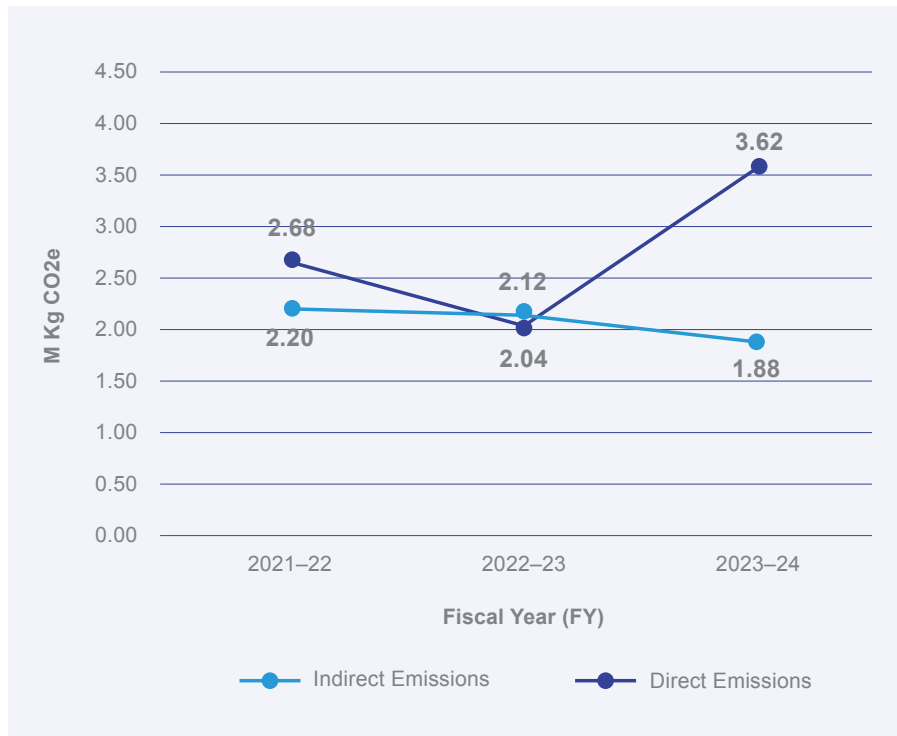
Continuing to log wildlife sighting and interactions including the bird survey.



CLIMATE CHANGE

Greenhouse Gas Emissions

The Project continued to track its GHG emissions (direct and indirect). Direct emissions were higher in 2023-24 compared to the previous two years, due to the increase in site activity (see figure below).



Climate Conditions at Site

- Noteworthy climate conditions for 2023-24 included:
 - Less precipitation in 2023 compared with the long-term average (i.e., 1943 to 2023).
 - Lower streamflow at Baker Creek, and the streamflow peak during freshet was approximately two weeks earlier than average (it occurred in early May rather than late May).
 - Poor air quality due to wildfires.
- The GMRP uses this information, as well as updated climate change predictions, to make decisions on whether immediate action is required or whether changes to Management and Monitoring Plans, Design Plans, etc. are required.

Incorporating Climate into Design Engineering

The GMRP had reviewed climate conditions and future climate change projections to incorporate into remediation designs (e.g., Freeze, Water Treatment Plant). The Project will continue to do so for each Project design.

HEALTH & SAFETY

Occupational and Public



OCCUPATIONAL HEALTH AND SAFETY

The Project keeps track of how many incidents and near misses happen each month and reports this information to the Project Director. Workers discuss upcoming activities as well as incidents and near misses in daily safety meetings so workers can review lessons learned, identify causes, and prevent future incidents.

When the number of hours worked on site is considered, all health and safety incident trends have decreased or stayed the same in 2023-24.





0.86%
IN 2023-24

MONITORING ARSENIC LEVELS IN WORKERS

In the 2023-24 reporting year, the GMRP team continued to monitor arsenic levels in workers.

When a worker's sample is above the accepted level, the Project takes steps to reduce the worker's exposure, which may mean changing the type of work they do until their levels return to below the accepted level. The Project also investigates the cause of the exposure.

ARSENIC LEVELS IN WORKERS

The percentage of samples above the action level for 2023-24 (0.86%) is lower than the previous four years.

- 3.35% in 2022-23
- 1.92% in 2021-22
- 1.24% in 2020-21

The decrease in the number of samples above the Action Level could be due to the increase in workers and the types of activities being conducted on site.

HEALTH EFFECTS MONITORING PROGRAM AND STRESS STUDY: UNDERSTANDING COMMUNITY WELLBEING AROUND GIANT MINE

The Health Effects Monitoring Program compares arsenic levels before, during, and after remediation to help make sure the remediation activities do not negatively impact people's health.



2017 – 2018

Baseline sample collection in 2018. There was a total of 2,037 participants. Individual results were reported back to all the participants.



2019 – 2020

Public engagement was undertaken in May 2019 to report back on the initial results of the study.



2021 – 2022

Updates provided on relevant publications, genetic analysis, and communication strategies for the revised website.



2022 – 2023

Conducted sampling of children aged 3-19 at the five-year interval.



2027 – 2028

The next round of sampling will occur 2027-2028 with both adults and children being sampled.

KEY ENGAGEMENT ACTIVITIES



ENGAGEMENT ACTIVITIES

Engagement is an important and valued part of the Giant Mine remediation process.

In 2023-24, the Project team participated in 31 engagement activities and events, aligned with and in support of the Project or related activities.

Key engagement activities included:

- Open Pits Closure Criteria
- Quantitative Risk Assessment (Environmental Assessments)
- Perpetual Care Plan
- Socio-Economic Engagements
- Aquatic Engagement
- Site-Wide Revegetation Plan
- Management and Monitoring Plan, Design Plans, and Closure Criteria
- Townsite and Marina Area
- Site Visits



In 2023-24, The Project team continued its regular engagement with key affected parties through avenues such as:

- The Giant Mine Oversight Board
- The Giant Mine Advisory Committee
- The Giant Mine Working Group
- The Annual Public Forum

KEY STAKEHOLDER CONCERNS

Stakeholder and Rights holder concerns are tracked through meeting minutes, the GMRP's Consultation Log, emails, and other correspondence.

KEY CONCERNS RAISED IN 2023-24 WERE AS FOLLOWS

- **Dust management** – Concerns over tailings dust and management of dust.
- **Impact of wildfires** – Impact of wildfire on arsenic in the environment.
- **Climate Change** – Climate assumptions seen as too conservative.
- **Apology and compensation** – YKDFN have requested an apology and compensation for historical Giant Mine operations.
- **Mine water elevation** – Concerns over rising mine water and associated control.
- **Local jobs and contracts not staying in the North** – Concerns that jobs and contracts will not stay in the NWT.
- **Safety of workers on site** – Concerns over exposure to arsenic trioxide and general site safety for workers.

SOCIO- ECONOMIC





SOCIO-ECONOMIC STRATEGY

The Project team led an update to its Socio-economic Strategy in 2022-23, integrating feedback from rights holders and stakeholders from the past five years.

The overall aim of the updated 5-year (2023-2028) Socio-economic Strategy is to maximize socio-economic benefits for Northerners and Indigenous Peoples and to deliver on regional socio-economic commitments and requirements.

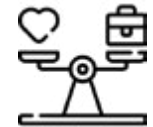
THIS SOCIO-ECONOMIC AIM IS SUPPORTED BY THREE PILLARS



EMPLOYMENT &
PROCUREMENT



TRAINING & CAPACITY
DEVELOPMENT



SOCIAL IMPACT
MANAGEMENT



EMPLOYMENT & PROCUREMENT

The Project tracks total employment and employment by certain categories. This includes:

- Northern workers
- Indigenous workers
- How “Indigenous Opportunities Considerations*” commitments are met during procurement
- Female workers

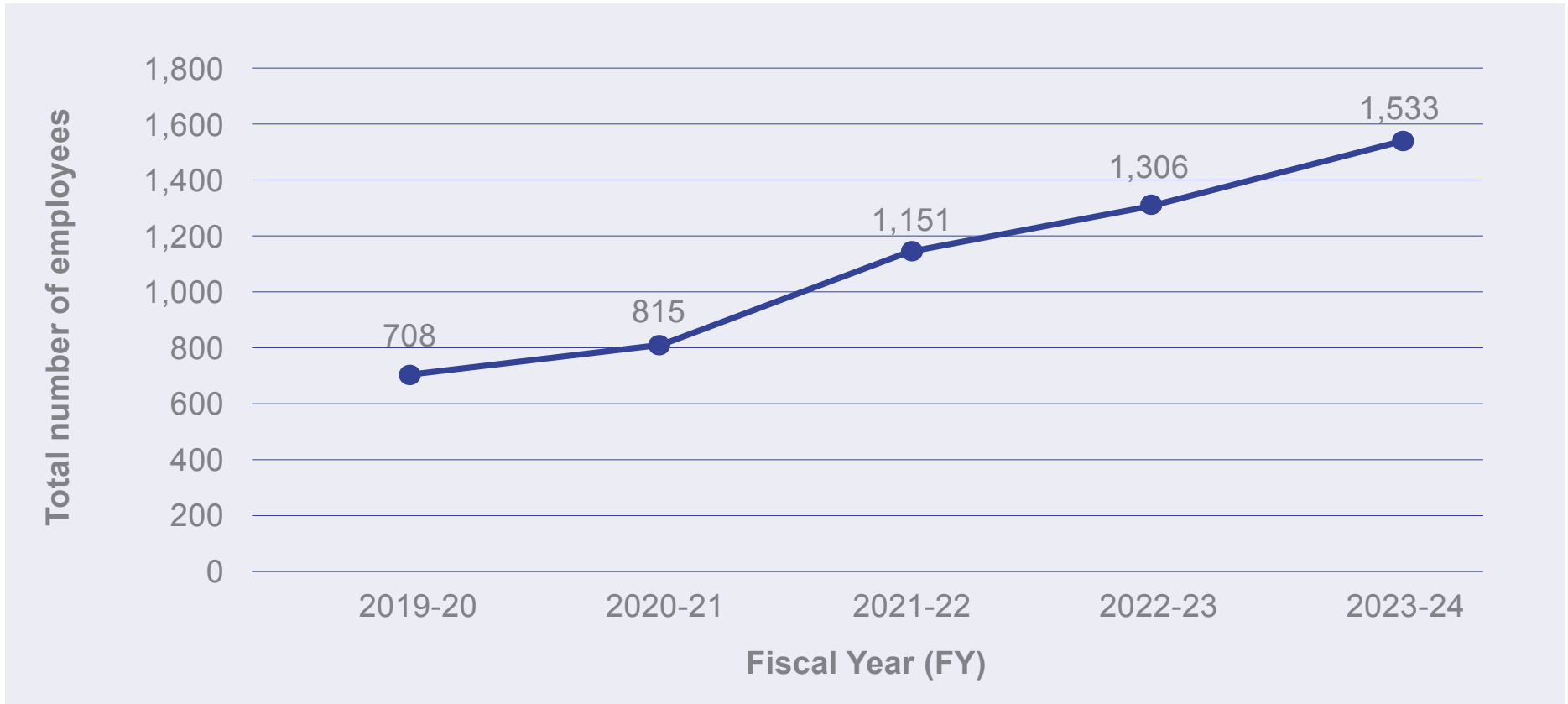
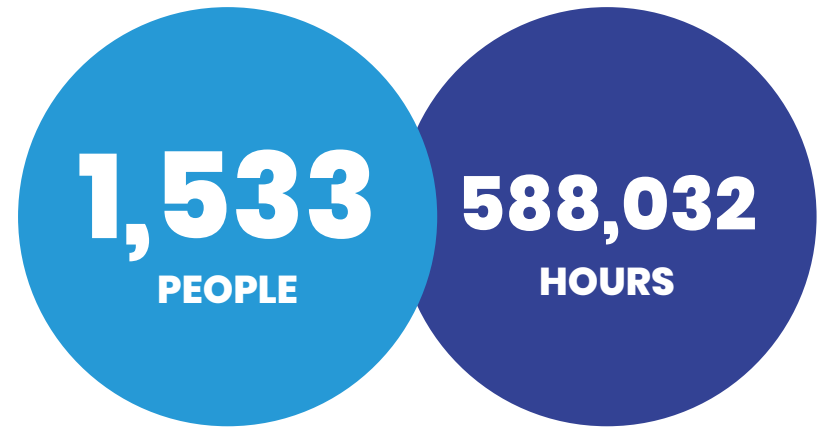
The Project tracks suppliers (i.e., contractors) by type. Specifically:

- Northern
- Indigenous
- Indigenous Opportunities Considerations

** IOC is used by procurement officers to review proposals and evaluate the commitments made by firms, such as the percentage of labour force that is local Indigenous peoples. Incentives and penalties are applied to encourage firms to meet or exceed commitments outlined in their proposal.*

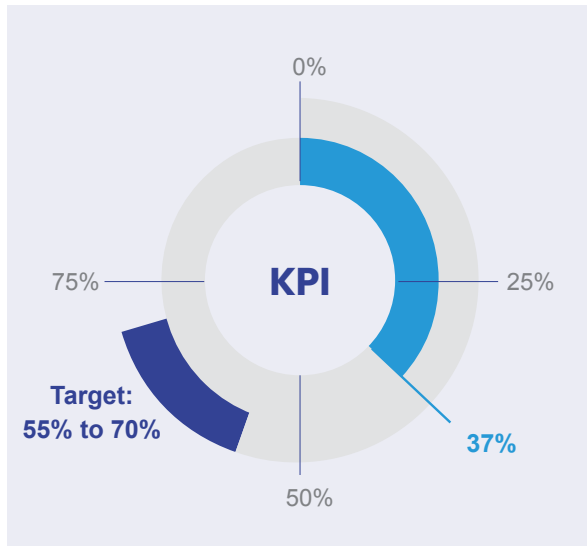
TOTAL EMPLOYMENT

- In 2023-24, the Project employed a total of **1,533 people**, for a total of **588,032 hours**.
- These results are higher than previous years, reflecting more activity on site.



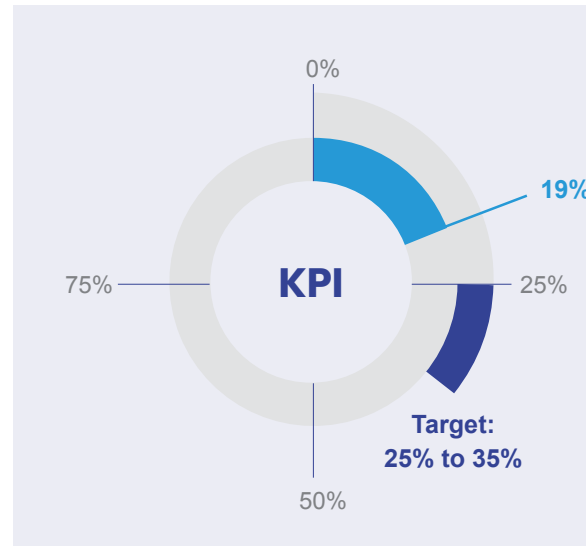
EMPLOYMENT – KEY PERFORMANCE INDICATORS

NORTHERN EMPLOYMENT



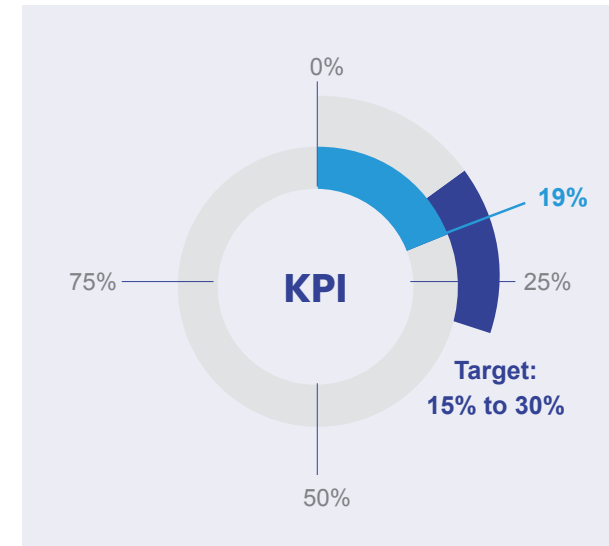
Northern employment reached **37%**, which is slightly higher than the 2022-23 percentage (36%). The results are still below the lower end of the target range (55-70%).

NORTHERN INDIGENOUS EMPLOYMENT



Northern Indigenous employment reached **19%**, which is higher than the 2022-23 percentage (16%). The results are still below the lower end of the target range (25-35%).

FEMALE EMPLOYMENT

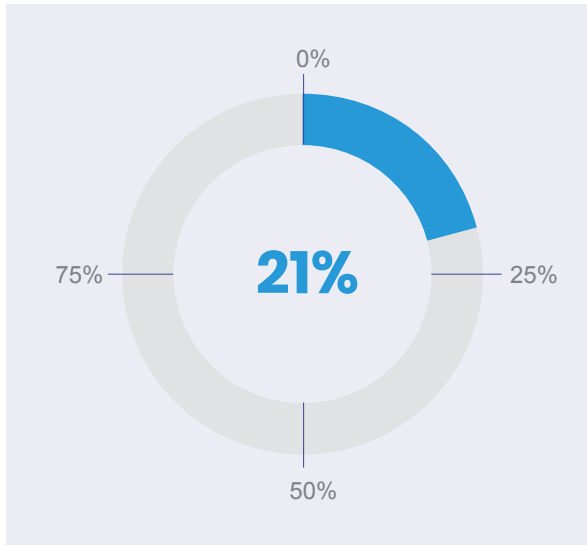


Female employment reached **19%**, which is lower than the 2022-23 percentage (22%). Employment of women is within the target range of 15-30%.

* KPI: Key Performance Indicator is a measurable value showing how effective the Project is in achieving important objectives.

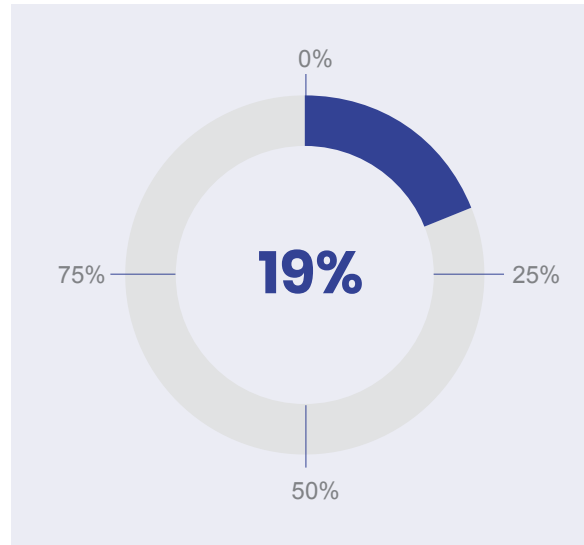
EMPLOYMENT – INDIGENOUS

INDIGENOUS EMPLOYMENT

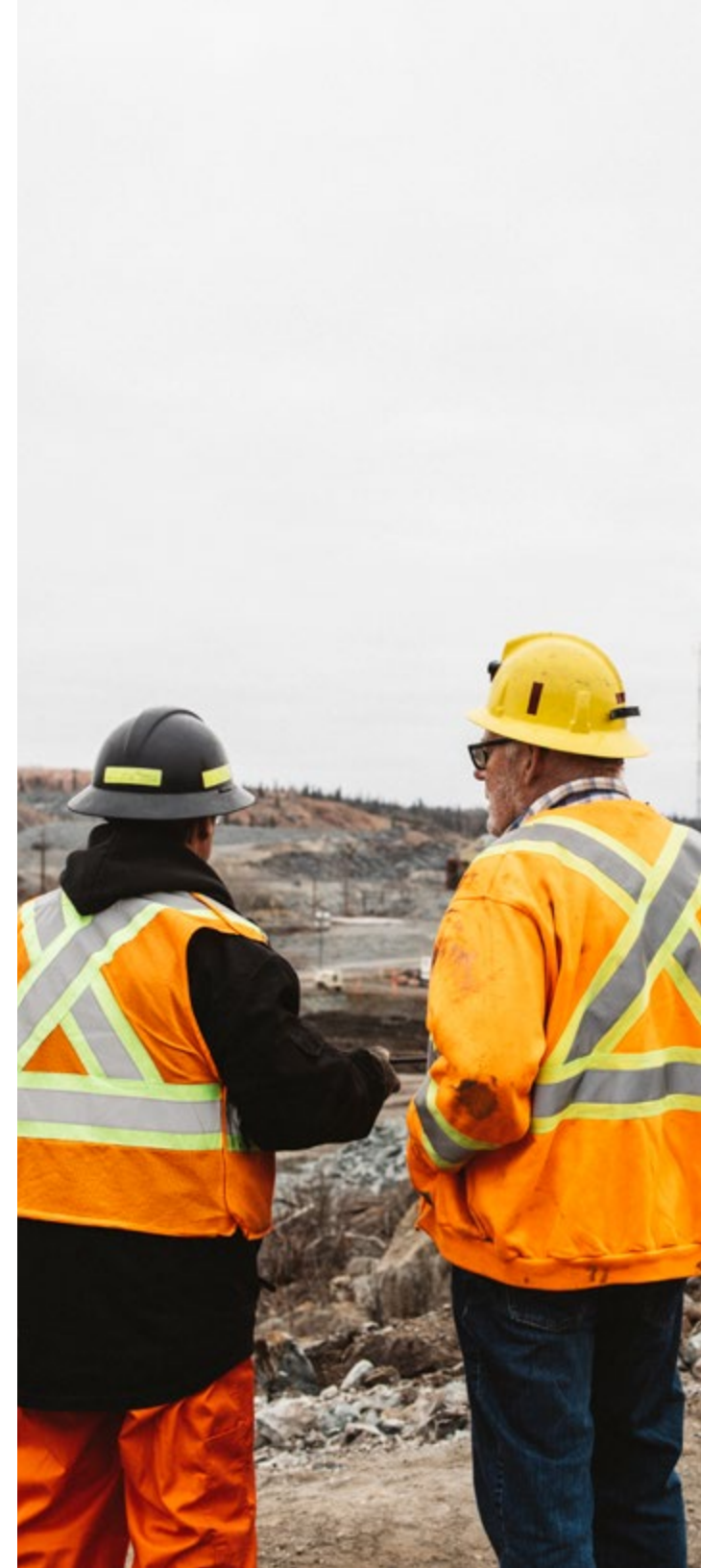


Indigenous employment accounted for **21%** of total person-hours worked in 2023-24. This is a 3% increase compared with the 2022-23 results (18%).

IOC EMPLOYMENT

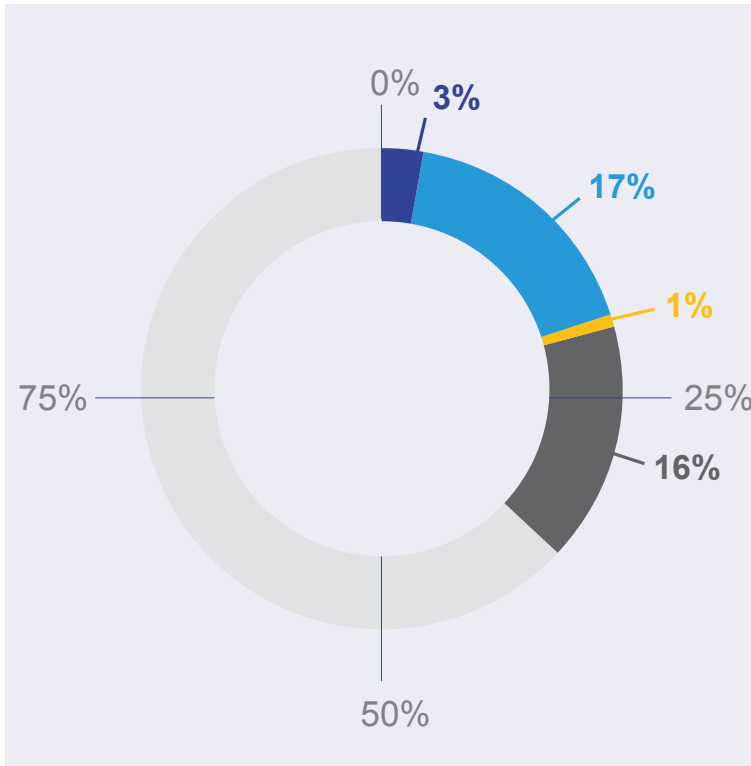


IOC employment accounted for **19%** of total person-hours worked. This is a 4% Increase compared with the 2022-23 results (15%).

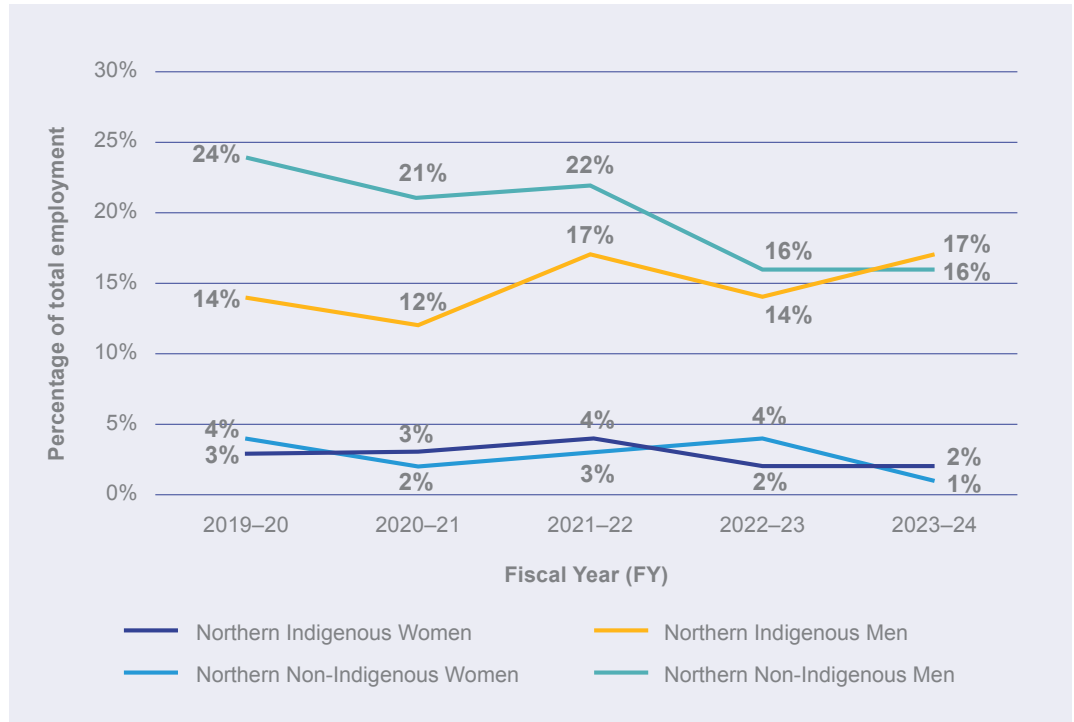


EMPLOYMENT – NORTHERN

NORTHERN EMPLOYMENT BREAKDOWN



NORTHERN EMPLOYMENT BREAKDOWN TREND



Northern Indigenous women: 34 people, 14,075 hours

Northern Indigenous men: 216 people, 90,260 people

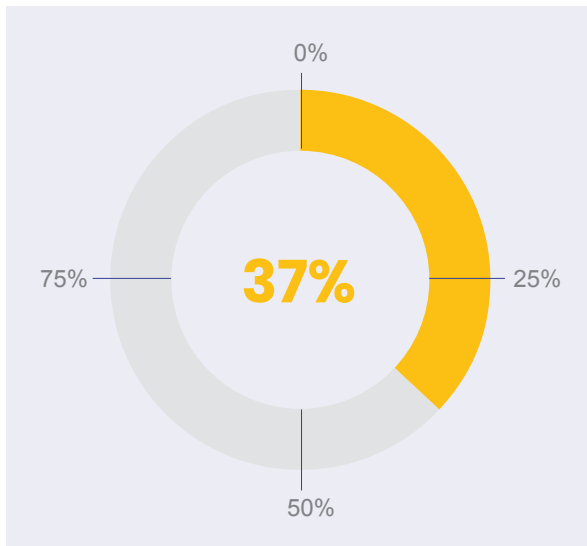
Northern non-Indigenous women: 29 people, 7,559

Northern non-Indigenous men: 145 people, 87,897

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Person Hours	194,057	268,992	365,053	378,341	538,031
Northern Indigenous Women	3%	3%	4%	2%	2%
Northern Indigenous Men	14%	12%	17%	14%	17%
Northern non-Indigenous Women	4%	2%	3%	4%	1%
Northern non-Indigenous Men	24%	21%	22%	16%	16%

EMPLOYMENT (PARSONS AND ITS SUBCONTRACTORS ONLY)

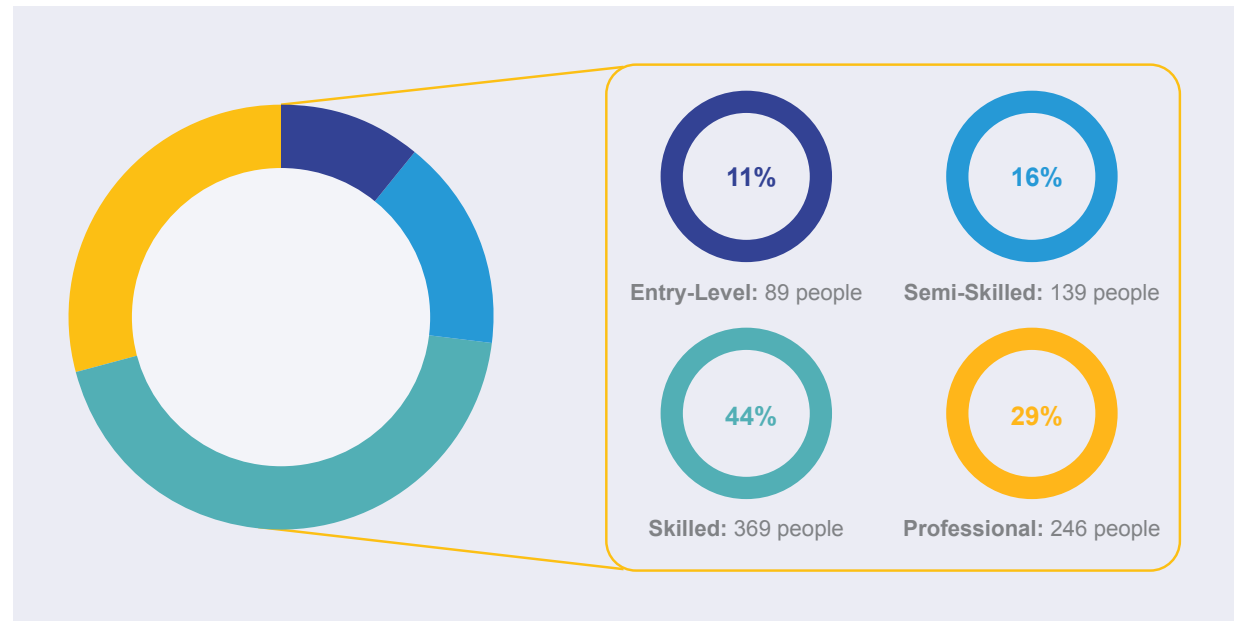
NWT RESIDENTIAL STATUS



NWT Resident: 37% of total employees (312 people)

Non-NWT Resident: 63% of total employees (531 people)

EMPLOYMENT BY SKILL LEVEL



Entry-Level: 11% of total employees (89 people)

Semi-Skilled: 16% of total employees (139 people)

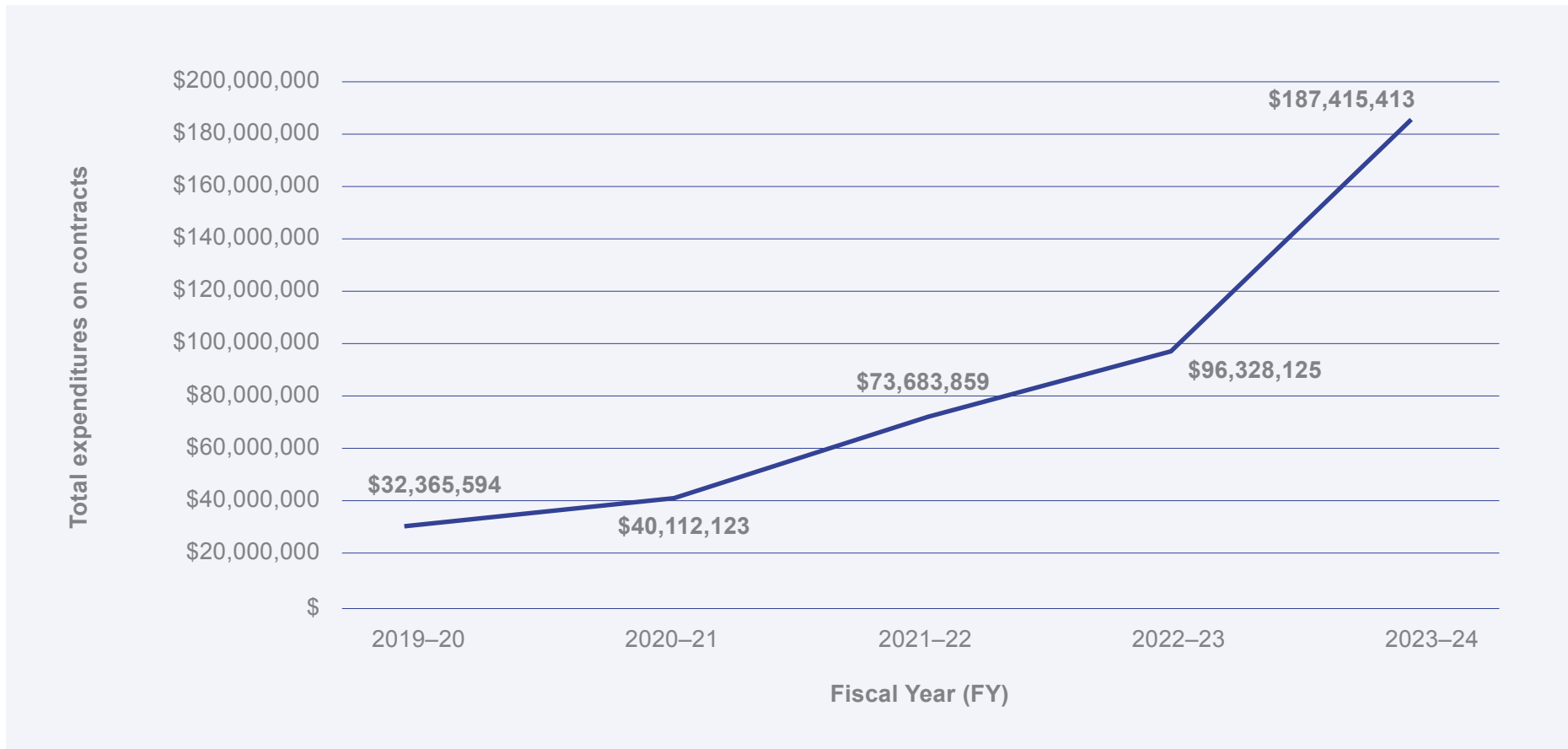
Skilled: 44% of total employees (369 people)

Professional: 29% of total employees (246 people)

TOTAL PROCUREMENT

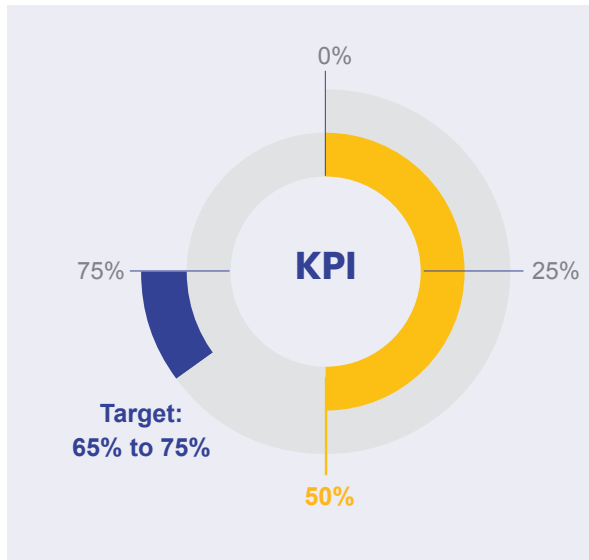
- In 2023-24, the Project team spent a total of **\$187,415,413** on contracts.
- This amount is higher than previous years.

TOTAL EXPENDITURES
ON CONTRACTS
\$187,415,413



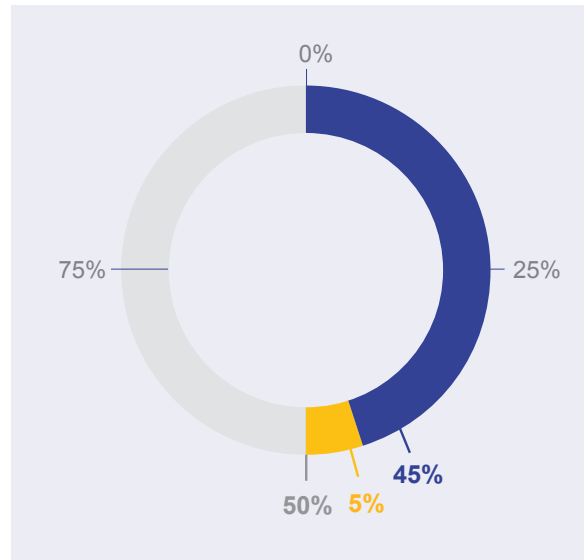
PROCUREMENT

NORTHERN SUPPLIERS



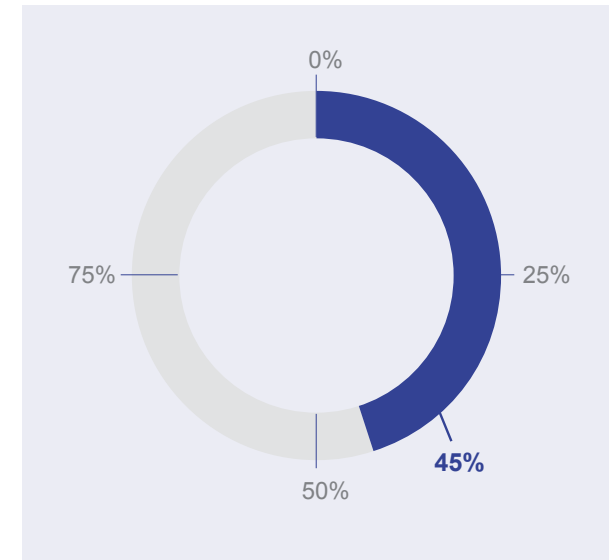
Northern suppliers reached 50% of all the Project's expenses. The results are lower than 2022-23 (61%). Despite the significant increase of procurement with Northern suppliers from \$58,306,624 (2022-23) to \$94,609,849 (2023-24), values are still below the target range (65-75%), which is %-based.

NORTHERN INDIGENOUS SUPPLIERS



Out of the 50% of Northern supplier expenditures on contracts (\$94,609,849), **45% were Northern Indigenous (\$84,136,499) and 5% were Northern non-Indigenous (\$10,473,349).**

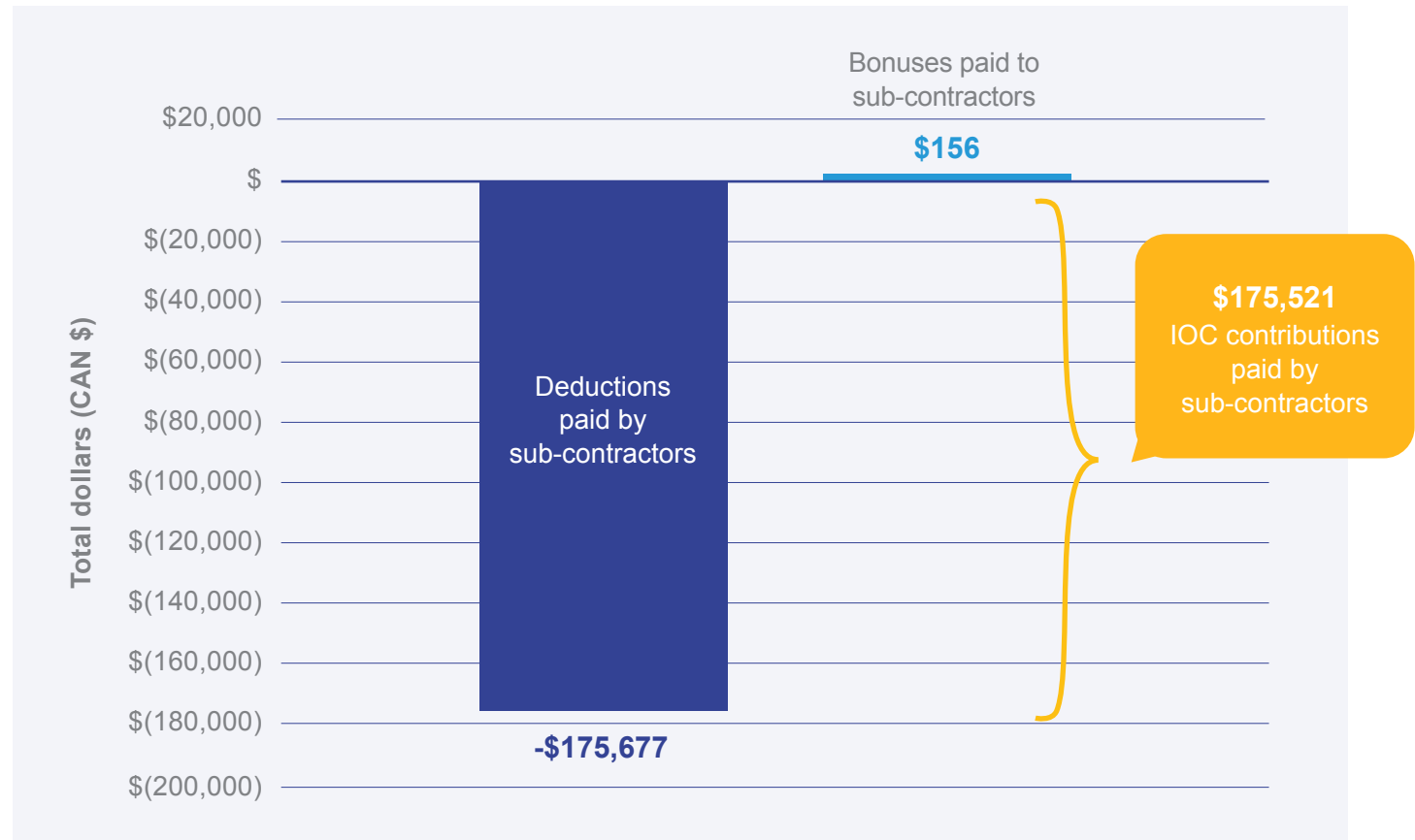
IOC SUPPLIERS



The proportion spent with **IOC suppliers reached 45% (\$84,049,430) in 2023-24**, which is lower than 2022-23 (\$50,361,215 or 52%) but higher compared to previous years (\$30,555,317 or 41% in 2021-22, \$9,702,972 or 24% in 2020-21, and \$11,319,615 or 35% in 2019-20).

IOC DEDUCTIONS & BONUSES SUMMARY FOR 2023-2024

The Project has committed to report on the total IOC bonuses issued for surpassing IOC commitments and total IOC deductions issued for not meeting IOC commitments, as specified in contracts.



A total of **\$156.11** has been **issued in bonuses** to sub-contractors.
A total of **\$175,676.73** in **deductions was paid** by sub-contractors.

TRAINING & CAPACITY DEVELOPMENT

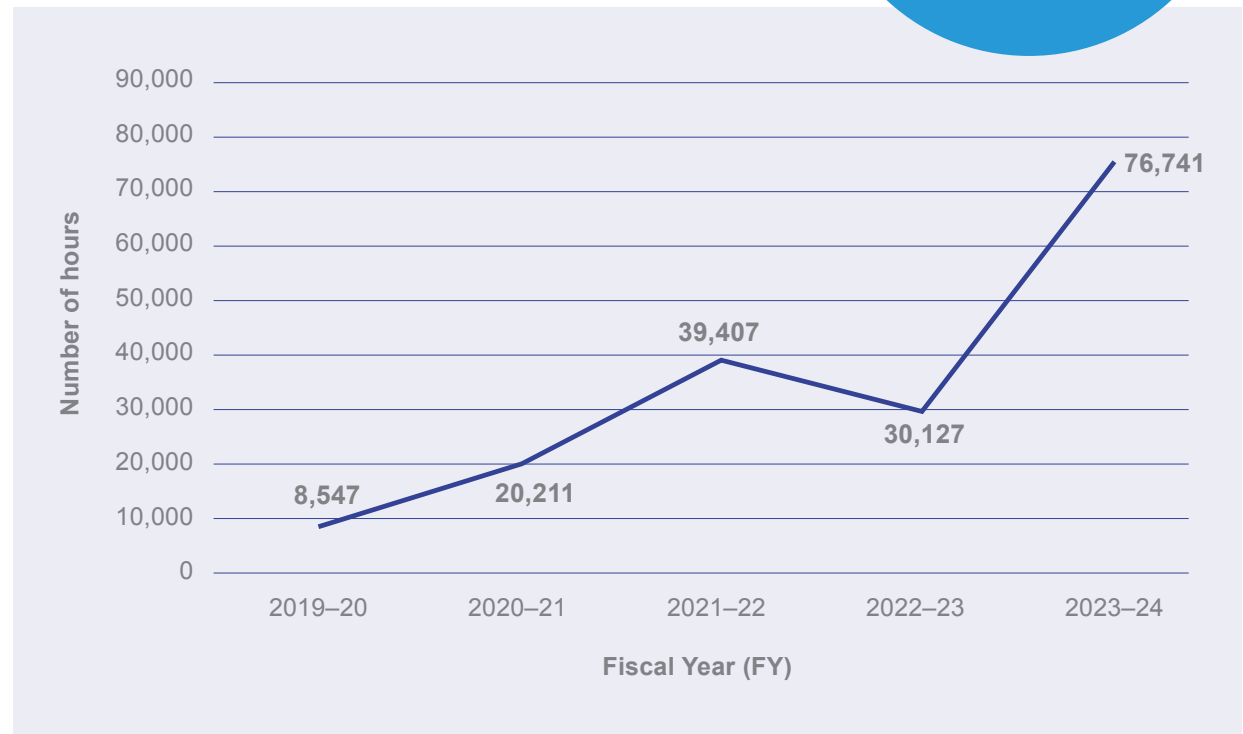
In addition to the occupational health and safety training,
Project contractors deliver workforce training.



TOTAL TRAINING

- In 2023-24, the total number of training hours (76,741) is **255% higher** than 2022-23 (30,127) and higher than previous years.
- This increase is due to more activity on Site as well as increased training hours under the YKDFN's Dech̓ta Nàowo Training Program. Dech̓ta Nàowo training includes, for example:
 - Wilderness First Aid
 - BEAHR Environmental Training
 - Confined Space and Fall Protection
 - Pre-trades on-the-job training

76,741
TOTAL
TRAINING HRS



TRAINING



1,149 HOURS SUPPORTED FOR 1 ELECTRICAL APPRENTICE

KPI APPRENTISHIPS: a minimum of 1 Northern apprentices supported per year.

- Contribute a minimum of 25% of on-the-job hours required for an apprentice to complete their apprenticeship program.



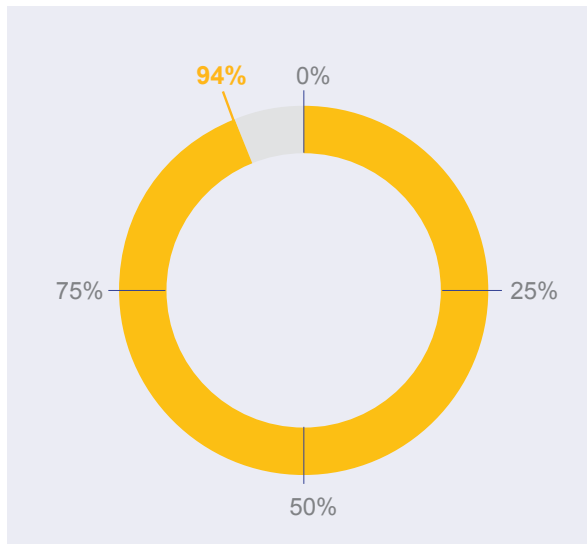
\$25,000 ISSUED FOR 7 SCHOLARSHIPS

KPI SCHOLARSHIPS: 1 scholarship issued per year.

- CIRNAC issued 1 scholarship (\$5,000) to YKDFN and 1 scholarship (\$5,000) to NSMA
- Parsons issued 5 scholarships (totaling \$15,000)

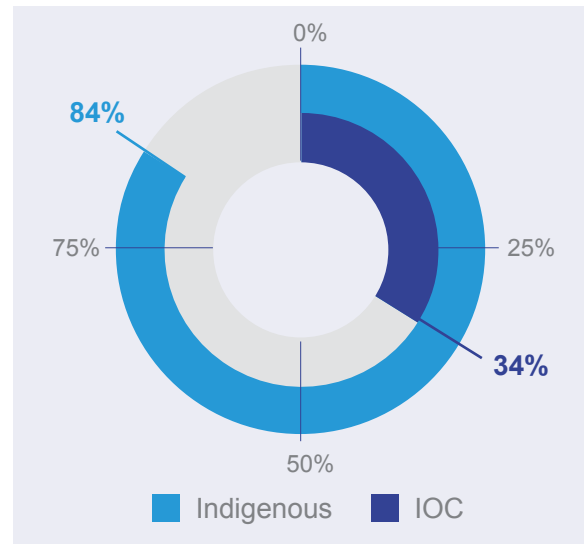
TRAINING

NORTHERN EMPLOYEE TRAINING



Northerns made up 94% of total person-hours. This is an increase from the previous years.

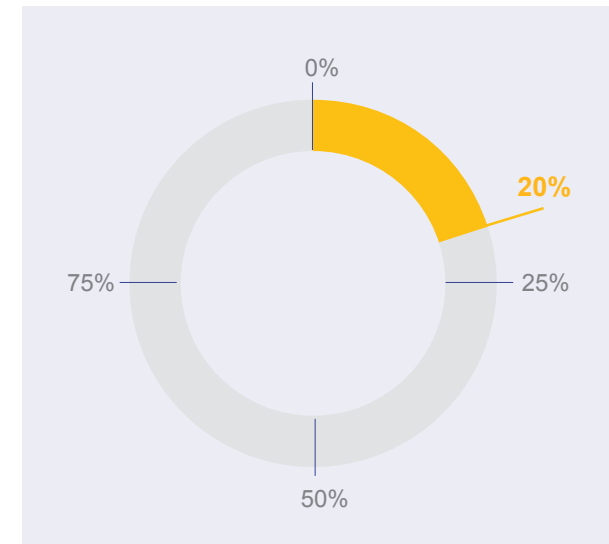
INDIGENOUS & IOC EMPLOYEE TRAINING



Indigenous (northern and southern) Peoples made up 84% of total person-hours. This is a slight increase from the previous years.

IOCs made up 34% of total person-hours. This is variable from the previous years.

FEMALE EMPLOYEE TRAINING

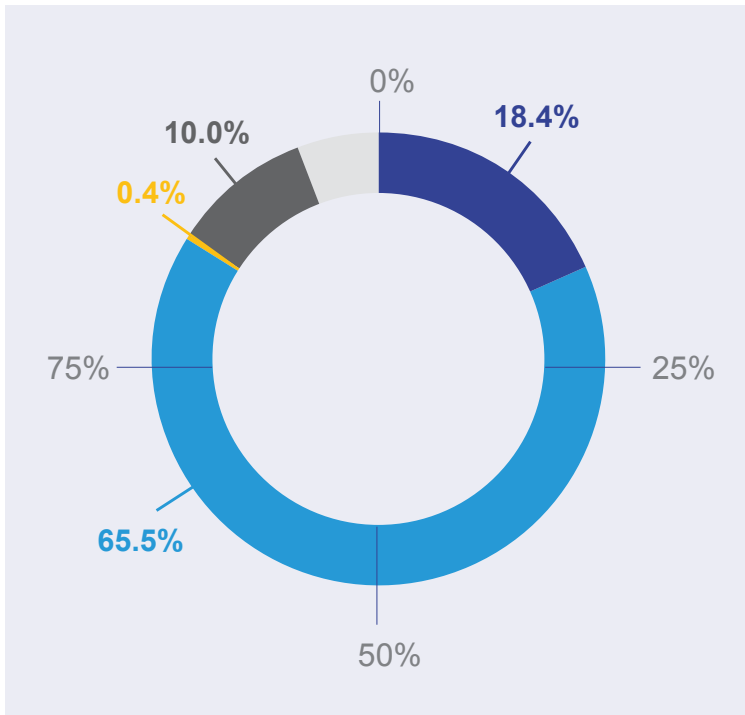


Females made up 20% of total person-hours. This is a slight increase from the previous years.

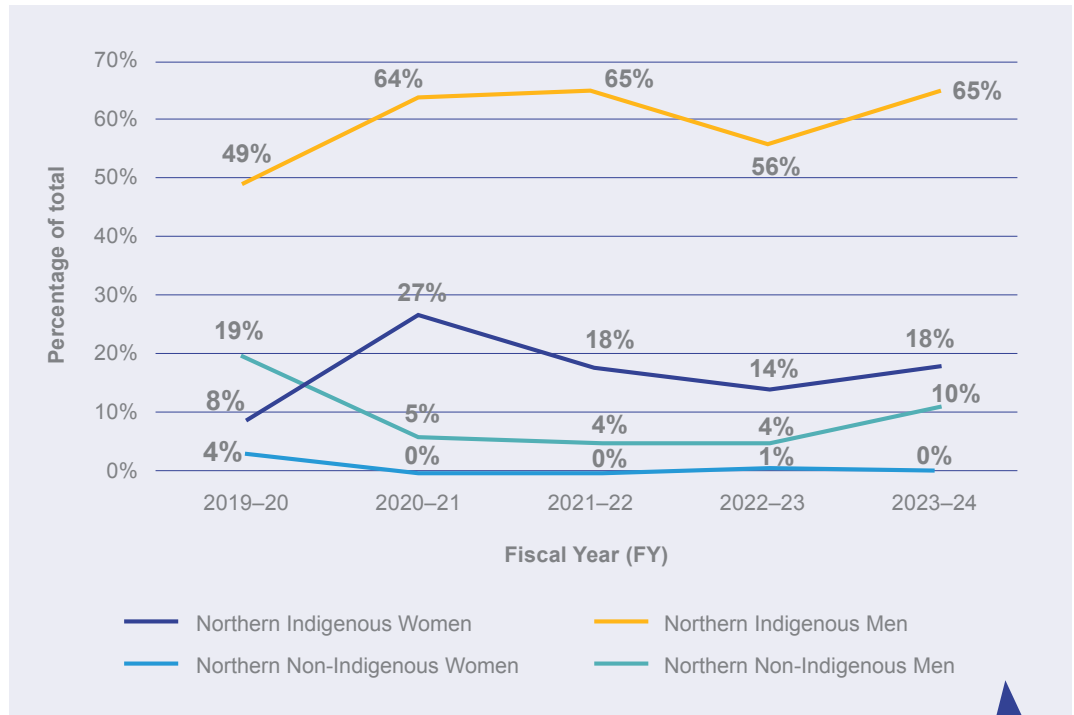
Note that these categories may overlap (e.g., a single employee may simultaneously be counted as Northern, Indigenous, IOC, and female – or a combination or subset thereof) and that some employees fit into none of these categories.

TRAINING

NORTHERN TRAINING BREAKDOWN



NORTHERN TRAINING BREAKDOWN TREND

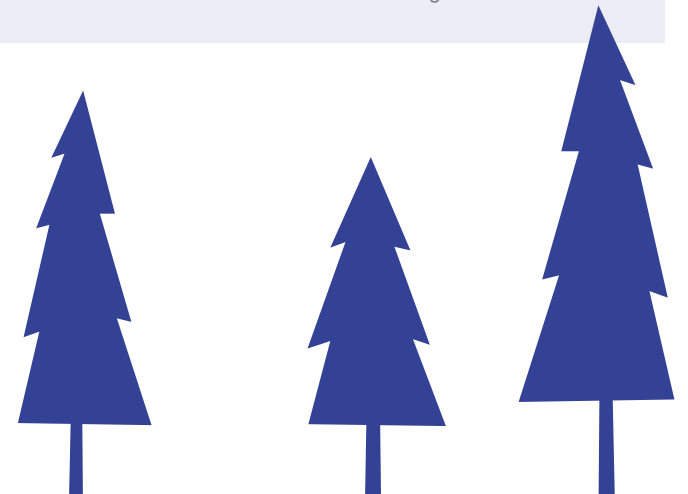


Northern Indigenous women: 14,117 hours

Northern Indigenous men: 50,238 hours

Northern non-Indigenous women: 282 hours

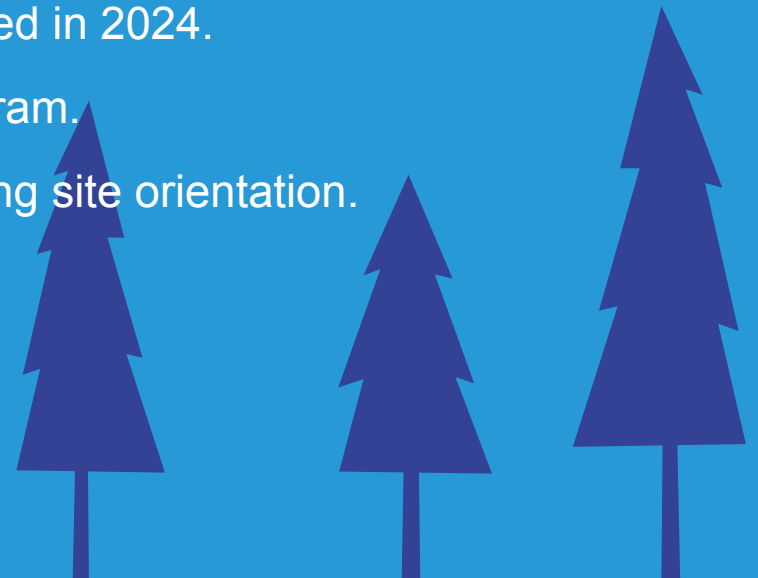
Northern non-Indigenous men: 7,657 hours



SOCIAL IMPACT MANAGEMENT

In 2023-24, the Project:

- Worked in collaboration with GNWT Health and Social Services (HSS) to develop a list of health and wellness indicators to be tracked and reported on by HSS. The list of indicators is scheduled to be finalized in 2024.
- Continued to fund the Health Effects Monitoring Program.
- Continued to provide cultural awareness training during site orientation.



IN CLOSING

The Project will continue to prepare plain language summary of its annual reports. For more information or to provide comments, please contact:

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867-669-2838

For more information:

Website ([Giant Mine Remediation Project](#))

