RioTinto | Diavik

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July 4, 2024

Subject: Diavik Diamond Mines (2012) Inc. (DDMI) 2023 Wildlife Management and Monitoring Report (WMMR)

Attached is an electronic copy of the DDMI 2023 WMMR. The WMMR aligns with the components and objectives of the Wildlife Management and Monitoring Plan (WMMP) and provides the analysis and reporting of data collected using the methods described for wildlife valued ecosystem components and other wildlife in the WMMP.

DDMI's responses to parties' comments and recommendations on the 2022 WMMR are provided in Appendix A and comments and recommendations on the 2022 WMMR had implications to the 2023 WMMR are provided in Table 1 of the report.

If you have any questions regarding the above, please contact the undersigned or Kyla Gray (kyla.gray@riotinto.com; 867-445-4922) at your convenience.

Yours sincerely,

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Superintendent, Environment & Closure
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REPORT

2023 Wildlife Management and Monitoring Report

Submitted to:

Diavik Diamond Mines (2012) Inc.

Submitted by:

WSP Canada Inc.

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23586538-R-2531-Rev0

June 27, 2024

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Prepared by			Reviewed and Approved by
Maria Dobbin, Intermediate Wildlife Biologist	Steven Siffledeen, Intermediate Wildlife Biologist	Grace Enns, Experienced Wildlife Biologist	Daniel Coulton, Principal, Wildlife Biologist

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Delivery Date	June 14, 2024		
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Maria Dobbin, Intermediate Wildlife Biologist	Steven Siffledeen, Intermediate Wildlife Biologist	Grace Enns, Experienced Wildlife Biologist	Daniel Coulton, Principal, Wildlife Biologist

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Maria Dobbin, Intermediate Wildlife Biologist	Steven Siffledeen, Intermediate Wildlife Biologist	Grace Enns, Experienced Wildlife Biologist	Daniel Coulton, Principal, Wildlife Biologist

Executive Summary

The Diavik Diamond Mine (Mine) is located on East Island in Lac de Gras, Northwest Territories. As a requirement of the Environmental Agreement, Diavik Diamond Mines (2012) Inc. (DDMI or Diavik) has completed a Wildlife Monitoring Program (WMP) report each year since 2002. In 2019, the Government of the Northwest Territories (GNWT) issued guidelines for the development of a Wildlife Management and Monitoring Plan (WMMP) (GNWT-ENR 2019). A Tier 3 WMMP was conditionally approved by the GNWT-ENR on 15 July 2022 (GNWT-ENR 2022). An updated Tier 3 2022 WMMP was prepared based on reviews by the Government of Northwest Territories, Department of Environment and Natural Resources (GNWT-ENR), now Government of Northwest Territories, Department of Environment and Climate Change (GNWT-ECC), Environmental Monitoring Advisory Board (EMAB) and Environment and Climate Change Canada (ECCC) and submitted to the GNWT-ENR in October 2022 (DDMI 2022a). This Wildlife Management and Monitoring Report (WMMR) aligns with the components and objectives of the WMMP (DDMI 2022a), which consider wildlife issues of concern identified by communities and regulatory agencies. The WMMR provides the analysis and reporting of data collected using the methods described for wildlife valued ecosystem components and other wildlife in the WMMP (DDMI 2022a).

The objective of the WMMR is to collect and analyze information that will assist in determining if there are effects on wildlife in the study area and if these effects were accurately predicted in the Environmental Effects Report (EER). The WMMR also collects data to determine the effectiveness of site-specific mitigation practices and the need for any modifications through adaptive management. The following report documents the data collected and associated results for 2023. Where helpful, comparisons to the information gathered during the previous monitoring (2000 to 2022) and the pre-construction baseline (June 1995 to August 1997) have been included. The last comprehensive analysis report for the Mine's operations phase will be prepared for 2025 as the closure phase is scheduled to begin in 2026.

General observations for each 2023 program include the following:

Landscape Changes

In 2023, the Mine footprint increased by 0.02 square kilometres (km^2). The total loss of terrestrial and aquatic habitats to date from mining activities (11.61 km^2), which is below that predicted in the EER. The current footprint is expected to be at its maximum now for operations. The footprint may expand slightly during progressive reclamation activities.

Barren-Ground Caribou

- The total caribou summer habitat loss to date is 2.88 habitat units, which remains below the prediction made in the EER.
- Forty-four (44) ground-based caribou behavioural scanning observations were completed in 2023. Fourteen (14) behavioural scan surveys could not be included in the results due to incomplete survey records. The results from the remaining 30 behaviour scan surveys were included in the caribou behaviour analysis that is summarized in this report. Observations occurred from March to October, at distances ranging from 0 to 25 km from Mine infrastructure. Diavik agreed to continue group scan behaviour monitoring on caribou visible from the Mine site (i.e., near field) and will discontinue far field scans in 2024 following discussion with the GNWT-ECC, EMAB, and Tłı̨chǫ Government.

- There were no Mine-related caribou injuries or mortalities reported in 2023.
- During 2023, the caribou traffic advisory remained at “No Advisory” for the entire year. There were two instances where 100 or more caribou were observed at one time. These groups of caribou were incidentally observed during other monitoring programs approximately 12 km and 20 km from the Mine.
- There were three instances where action was taken to deter caribou away from Mine infrastructure or out of the 1 km blast exclusion zone at the Waste Rock Storage Area South Country Rock Pile (WRSA-SCRP) and the A21 open pit immediately prior to blasting operations.
- A caribou kill site was documented during exploration activities in May 2023. Approximately 10 caribou carcasses were observed near an esker approximately 28 kms from the Mine.

Grizzly Bear

- The total direct grizzly bear habitat loss to date is 8.41 km^2, which is below the amount predicted in the EER.
- In 2023, 87 instances of grizzly bears were recorded on East Island from 22 April to 06 October, with a total of 134 individuals observed. Of these, 56 required deterrent actions and 78 did not require deterrent actions. There were no relocation events or mine-related mortalities in 2023.

Wolverine

- Since 2015, snow track monitoring for wolverine included surveys of 40 transects twice so that detection probability could be estimated and incorporated into analyses of relative presence and distribution in the study area. In 2023, severe weather limited the program to survey a total of 36 transects with 25 transects surveyed twice.
- A total of 70 wolverine tracks were detected at 24 of 36 transects (67% of tracks surveyed) during sampling in 2023. Mean track density index (TDI) was estimated at 0.23 (± 0.09 2SE) which was higher than in 2022 (0.06 ± 0.04). The number of days since a recent snowfall or threshold wind speed event had no significant influence on detecting wolverine tracks.
- There were no wolverine relocations or mine-related mortalities in 2023.

Raptors

- In 2023, the GNWT-ECC’s regional raptor nest monitoring surveys were not completed. These surveys are planned to occur every five years, with the next survey scheduled for 2025. The results of the last nest monitoring survey, completed in 2020, are included in a regional database that is managed by the GNWT-ECC.
- A total of 20 Pit Wall/infrastructure inspections were completed from 06 May until 18 August to determine use by raptors. During the inspections, one peregrine falcon nest was confirmed on the roof of the Process Plant. The nest was considered successful when two juveniles were confirmed to have fledged. One rough-legged hawk nest was observed at the A21 south ramp in 2023 and three juveniles were confirmed to have fledged after being spotted perched outside the nest. Common raven nested at the South Tank Farm and successfully fledged three juveniles in 2023.

- Three raptor mortalities of unknown cause occurred at the Mine in 2023. Two raptor observations were noted in non-raptor mortalities reported at the Mine in 2023.

Waste Management

- In 2023, waste inspections at the Waste Transfer Area (WTA), Landfill, Underground waste bins, and at A21 were completed twice per week throughout the year. During inspections staff identified and removed any improperly disposed waste and recorded all sign of wildlife and activity. Based on the results of inspections, workers are educated on waste management practices as part of adaptive management.
- Throughout 2023, aluminium and plastic containers were collected and were shipped off the Mine site for recycling during the 2024 winter road. Copper wire was salvaged at the Mine and donated to local charities. During 2023 a total of 115,925 litres of waste oil were collected and burned in waste oil heat-generating boilers.
- In 2023, the wind farm generated approximately 13,540 megawatt hours (MWh) of power, which represents an estimated diesel savings of 3.4 million litres.

Study Limitations

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1.0 INTRODUCTION

1.1 Background

Diavik Diamond Mines (2012) Inc. (DDMI or Diavik) completed wildlife baseline studies from 1995 to 1997. The information was used to describe ecological conditions in the Lac de Gras area in support of the Project Description and Environmental Assessment (DDMI 1998a,b). A Wildlife Monitoring Program (WMP) was developed as part of the Environmental Agreement for the Diavik Diamond Mine (Mine; DDMI 2002). Documents that were used in developing the WMP include the following:

- Comprehensive Study Report, Diavik Diamonds Project (The Canadian Environmental Assessment Act 1999)
- Environmental Assessment Overview, Diavik Diamonds Project (DDMI 1998c)
- Environmental Effects Report (EER), Wildlife, Diavik Diamonds Project (DDMI 1998b)
- Wildlife Baseline Report, Diavik Diamonds Project (Penner 1998)

Monitoring by DDMI during construction and operation of the Mine has been used to test impact predictions in the EER (DDMI 1998a,b), evaluate the effectiveness of mitigation, and provide feedback for adaptive management. In 2019, the Government of the Northwest Territories (GNWT) issued guidelines for the development of a Wildlife Management and Monitoring Plan (WMMP) (GNWT-ENR 2019). Diavik initially prepared and submitted a Tier 3 WMMP to the Government of Northwest Territories, Department of Environment and Natural Resources (GNWT-ENR, now Government of Northwest Territories, Environment and Climate Change [GNWT-ECC]) in July 2020 (DDMI 2020) and subsequently submitted an updated Tier 3 WMMP in November 2021 (DDMI 2021) and October 2022 (DDMI 2022a) in accordance with these guidelines, compliance with the Environmental Agreement, and the fundamental aspects of monitoring and mitigation previously established and accepted in the WMP. This Wildlife Management and Monitoring Report (WMMR) aligns with the components and objectives of the approved WMMP, which consider wildlife issues of concern identified by communities and regulatory agencies. The WMMR provides the analysis and reporting of data collected using the objectives and methods described for wildlife valued ecosystem components (VECs) and other wildlife in the WMMP (DDMI 2022a), which was conditionally approved on 15 July 2022.

Based on reviews and discussions among DDMI, communities, and regulators, the WMMR has evolved under the principles of adaptive management since the original design of the WMP in response to trends observed in the data and changes to objectives, study designs, and methods. Rationale for changes were based on the effectiveness of data to test effects predictions, community concerns, adaptive management principles, and the establishment of regional monitoring programs. Further, community site visits occur annually and provide community members an opportunity to observe Mine operations.

Due to the large degree of natural variation inherent in ecosystems, it is often difficult to detect indirect effects with only one or two years of data. Therefore, a more comprehensive analysis and discussion of all data from the WMMR has been completed every three years and submitted as a separate report. Separate reporting began in 2004 following requests for more formal statistical analysis of monitoring data by the Environmental Monitoring Advisory Board (EMAB) (EMAB 2004) and GNWT-ENR (GNWT-ENR 2004).

Since 2010, some WMP and WMMP studies for caribou, grizzly bear, and falcons have been suspended or removed through adaptive management and with consensus among communities, regulators, mine operators, and monitoring agencies after review of these programs at wildlife monitoring workshops (Marshall 2009; Handley 2010). Discontinuation of monitoring through adaptive management precludes the need to complete statistical analyses. In 2014, waterfowl monitoring was discontinued following review and agreement by Environment and Climate Change Canada (EC 2013). The 2021 Diamond Mine Wildlife Monitoring Meetings hosted by the GNWT-ENR on 2 and 3 of February 2021 determined that the grizzly bear and wolverine hair snagging, and caribou behaviour monitoring programs can be discontinued. As such, the grizzly bear and wolverine hair snagging programs were discontinued in 2022 and are not included in this technical report. Although 24 years of monitoring indicates no strong adverse response, in December 2023, DDMI agreed to continue to conduct group scan caribou behaviour monitoring visible from the Mine site (i.e., near field) (GNWT-ECC 2024b) and will discontinue far-field scans in 2024.Of the studies completed in the most recent three comprehensive analysis reports in 2023, 2020, and 2017, the wolverine snow track monitoring is the only program at site that remains active and evaluates regional EER predictions.

In the context of reporting efficiencies, DDMI no longer completes an independent comprehensive analysis report for wildlife. Instead, all comprehensive statistical analyses related to active monitoring programs are included every three years in the annual WMMR. The last comprehensive analysis report was completed for 2022 (WSP 2023a) and included comprehensive analysis for wolverine and caribou to fulfill approved WMMP requirements and commitments. The last comprehensive analysis during the Mine's operations phase will be prepared for 2025 as closure activities are scheduled to commence in 2026. For the intermediate years, the annual reports present findings from that year, and summarize cumulative data collected up to that year. If critical issues become apparent in the shorter term, then a discussion of these issues is presented in annual reports.

1.2 Objectives

The overall objectives of the WMMR are to:

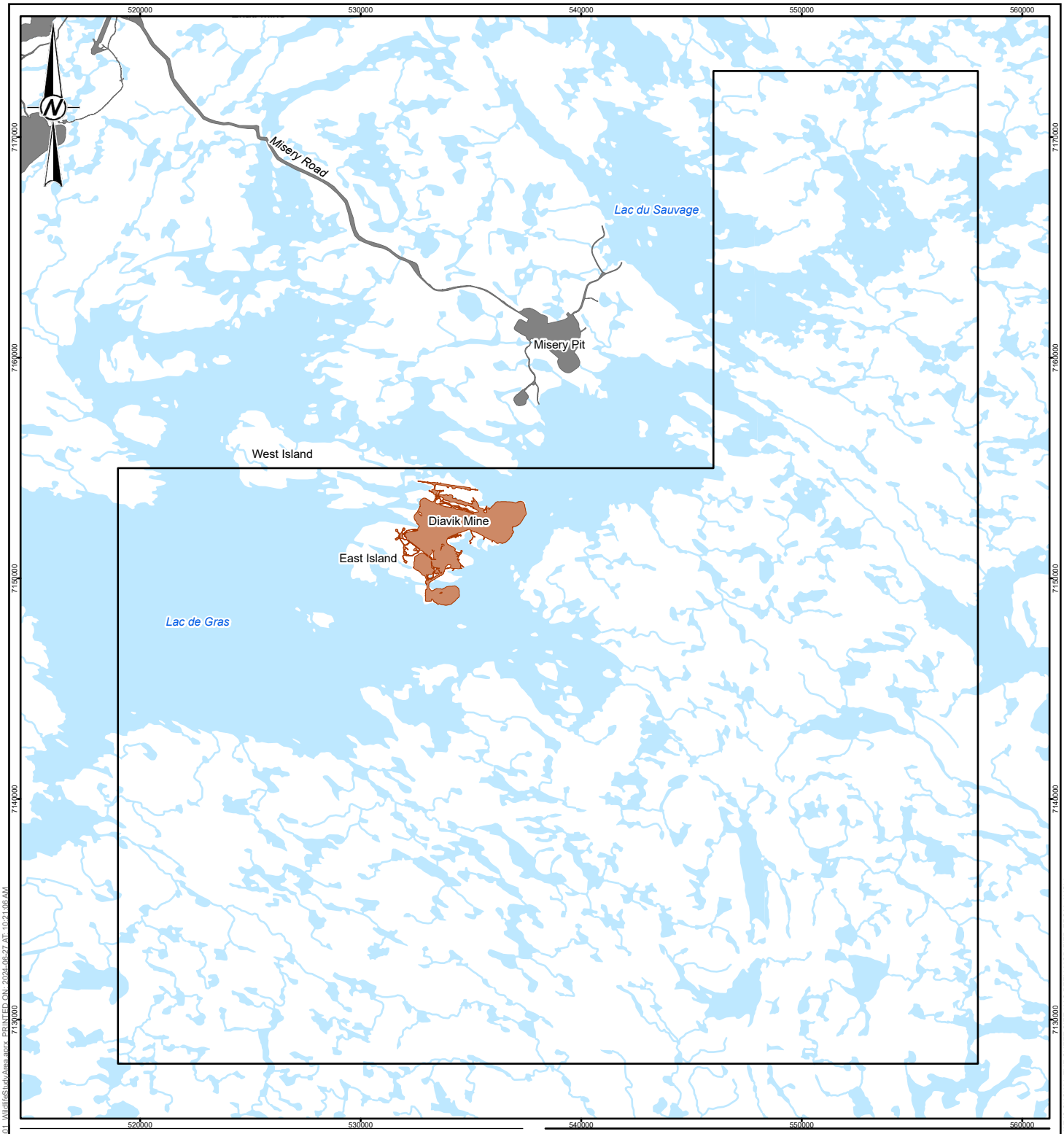
- Collect information that will assist DDMI to determine if there are effects on wildlife and if these effects were accurately predicted in the EER.
- Determine the effectiveness of mitigation practices intended to avoid and limit Mine-related effects on wildlife and whether or not these practices and policies require modification.
- Detect effects that were not predicted in the EER.

Objectives specific to wildlife VECs are presented in the following sections.

1.3 Study Area

The Mine is located on East Island in Lac de Gras (Figure 1). The wildlife study area is 1,200 square kilometres (km^2) and includes the East and West islands, aquatic habitats, many smaller islands in the northeast portion of Lac de Gras, and the mainland along the southern, eastern, and northern shores of Lac de Gras. An extension to the northwest was made to include the Lac du Sauvage narrows, an important caribou migration corridor (Penner 1998). The local study area during baseline studies (Penner 1998) covered approximately 805 km^2.

The Mine includes accommodation facilities, operations buildings, haul roads, an airstrip, country rock piles, the A154, A418, and A21 pits and dikes, and all other infrastructure (Figure 2). In 2012, the Mine was expanded to include a four-turbine wind farm and access roads to the wind farm. The majority of haul roads required for mining activities are complete. The current footprint is expected to be at its maximum now for operations but may expand slightly during progressive reclamation activities.



LEGEND

- DIAVIK WILDLIFE STUDY AREA BOUNDARY
- DIAVIK FOOTPRINT
- EKATI FOOTPRINT
- WATERCOURSE
- WATERBODY

0 5 10

1:250,000 KILOMETRES

REFERENCE(S)

1. BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.
PROJECTED COORDINATE SYSTEM: NAD 1983 UTM ZONE 12N

CLIENT
RIO TINTO EXPLORATION INC.

PROJECT
DIAVIK DIAMOND MINES INC.

TITLE
DIAVIK WILDLIFE STUDY AREA, 2023

CONSULTANT
wsp

YYYY-MM-DD	2024-06-27
DESIGNED	GE
PREPARED	AA
REVIEWED	DC
APPROVED	DC

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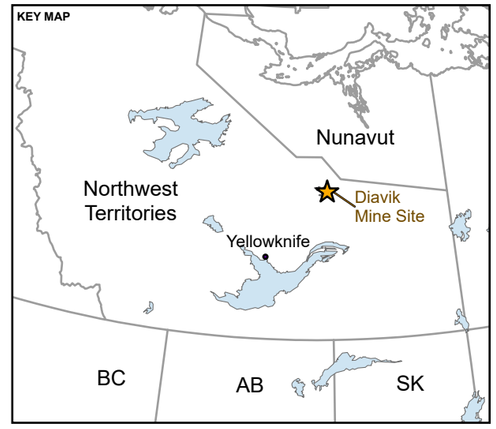
Airstrip
North Inlet
North Inlet Water Treatment Plant
A154 Dike
A154 Pit
North Country Rock Pile
Backfill Plant
Inert Landfill
Wind Turbine 1
Wind Turbine 2
Wind Farm
Wind Turbine 3
Ammonium Nitrate Storage
Processed Kimberlite Containment (PKC) Facility
A154/A418 Decline
Underground Fuel Bay
A418 Pit
A418 Dike
Lube Building
Truck Shop
Process Plant
Freshwater Intake
Wind Turbine 4
Main Camp
Boiler House
Sewage Treatment Plant
South Camp
Power Houses
Waste Transfer Area
Emulsion Plant
A21 Underground Decline
Lac de Gras
South Country Rock Pile
South Tank Farm
A21 Causeway
A21 Dike
A21 Pit

LEGEND

- INFRASTRUCTURE

KEY MAP



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INFRASTRUCTURE DATA AND 2023 IMAGERY OBTAINED FROM CLIENT. IMAGERY COPYRIGHT © 20221214 ESRI AND ITS LICENSORS. SOURCE: MAXAR. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTED COORDINATE SYSTEM: NAD 1983 UTM ZONE 12N

CLIENT
RIO TINTO EXPLORATION INC.

PROJECT
DIAVIK DIAMOND MINES INC.

TITLE
DIAVIK MINE SITE INFRASTRUCTURE, 2023

CONSULTANT

YYYY-MM-DD	2024-06-27
DESIGNED	GE
PREPARED	AA
REVIEWED	DC
APPROVED	DC

PROJECT NO.	CONTROL	REV.	FIGURE
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1.4 Report Organization

Within each section of this report, data are presented that will be tracked over the life of the Mine. Recommendations for changes to the WMMR based on adaptive management are presented at the end of each section for consideration and may be incorporated into the WMMR for subsequent years. The WMMP is an evolving management plan that reflects recommendations during previous years, as well as advances in Mine development. Changes will be captured in revisions to the WMMP (DDMI 2022a) and future WMMRs.

The EMAB is an arm's length organization that reviews the WMMR annually and provides comments and recommendations to DDMI. DDMI responded to comments on the 2022 WMMR (WSP 2023a) by the EMAB, the GNWT-ECC, the Wek'èezhìı Renewable Resource Board (WRRB), and Environment Climate Change Canada (ECCC) in December 2023 (WSP 2023b; Appendix A). Comments resulting in changes to the WMMR are summarized in Table 1.

As described in DDMI's response to the EMAB comment "EMAB-WMMR-3" in Table 1, DDMI committed to meet with the EMAB and GNWT-ECC regarding the status of behaviour monitoring by DDMI to fulfill WMMP Approval Condition 1. DDMI met with the EMAB and GNWT-ECC in December 2023 and agreed to continue monitoring behaviour of caribou visible from the Mine site (GNWT-ECC 2024b).

Table 1: Comments on the 2022 WMMR Relevant to the 2023 WMMR

Agency	Comment Identifier	Reviewer Comment and Recommendation	DDMI Response	WMMR Section
EMAB	EMAB-WMMR-3	In 2022, between 5 March and 10 August, observations were collected on 38 caribou groups from 0 to 15 km from the Mine. Observations far from the Mine were not attempted in the winter due to human safety considerations and required changes in data collection methods (i.e., snowmobile versus helicopter). Overall, 702 caribou were observed in 2022, this is 277 more than the previous year. As in 2021, DDMI again indicated that there remains insufficient data (# caribou groups) to detect a 15% change in behaviour (55 unique groups of caribou in two distance groups are required). We continue to emphasize the importance of these data in understanding the influence of the Mine on caribou and for use in ground-truthing the behavioural data gathered from the geo-referenced collars on caribou. We recommend continuing the collection of ground-based behaviour data to support the inferences about behaviour made from the geo-fenced collar data.	DDMI will meet with the GNWT-ECC and EMAB regarding the status of behaviour monitoring by DDMI.	Section 4.3
GNWT-ECC	GNWT-ECC-WMMR-1	The Executive Summary, and Sections 1.1, 4.3 and 4.6 of the report state that Diavik will no longer monitor caribou behaviour beyond 2022. As per GNWT-ECC's letter to DDMI on Oct. 20, 2023, ECC considers the question of whether behavioural monitoring of barren-ground caribou should continue to be unresolved at this time, as ECC determined that WMMP Approval Condition #6 has not been satisfactorily addressed due to lack of evidence that DDMI had collaborated with EMAB before making the decision to discontinue behaviour monitoring. Please refer to GNWT-ECC's letter dated Oct. 20, 2023, for the proposed path forward to resolve this issue.	See response to EMAB-WMMR-3.	Executive Summary, Section 1.1, Section 4.3, Section 4.6
GNWT-ECC	GNWT-ECC-WMMR-3	Section 4.2.1.1 states that collar locations with Classes "2" (i.e., 500 m radius accuracy), "3" (i.e., 250 m radius accuracy), "5" (i.e., 100 m radius accuracy), "GPS" (i.e., 100 m radius accuracy) and "A" (i.e., <100 m radius accuracy) were included in the analysis. In Poole et al. (2021), collar locations from Telonics Argos (satellite) were removed from the analysis as they provide location errors up to 350-1000 m. Also, fine-scale analyses of movement requires accurate GPS locations as these locations are linked to a landcover type. If a caribou location is off by several hundred metres, this can significantly impact the covariate of the model and provide erroneous results. Therefore, any collar locations with equal or more than a 100 m radius accuracy should be removed from the analysis. For future analyses, please remove all collar locations with Classes "2", "3", "5", and "GPS" from the filtered telemetry dataset.	The telemetry dataset included Class “0”, “1”, “2”, and “3” fixes from Telonics Argos collars, as well as Class “G” fixes (i.e., “GPS” fixes) from both Telonics Argos and Telonics Iridium collars. Class “5” fixes were also present in the Bathurst data. Poole et al. (2021) removed fixes with over 350 – 1000 m accuracy (i.e., Class “0” and “1” fixes; Telonics 2015). Following Poole et al. (2021), DDMI also excluded Class “0” and “1” fixes from analyses; this removed approximately 9% of the telemetry data. The remaining 91% of the telemetry data were comprised of Class “2”, “3”, “5”, and “GPS” fixes. If DDMI were to remove all these fix types from future analyses, there would be no telemetry data left to analyze. DDMI assumes that GNWT-ECC’s recommendation to remove Class “2”, “3”, “5”, and “GPS” fixes from the dataset is to exclude fixes with lower spatial accuracy. For future analyses, DDMI can retain only Class “5” and “GPS” fixes and exclude Class “2” and “3” fixes. Removing Class “2” and “3” fixes would remove an additional 1% of the data and retain a total of 90% of the Beverly/Bathurst data for analyses.	Section 4.2.1.1
GNWT-ECC	GNWT-ECC-WMMR-10	GNWT-ECC appreciates the consistent and thorough approach to documenting wildlife incidents and incidental observations as evidenced by the reports provided in Appendix F, G, H, and J. Continue implementing these aspects of the WMMP.	DDMI will continue implementing these aspects of the WMMP in future reports.	Appendix H, J, K and L

2.0 COMMUNITY ENGAGEMENT AND TRADITIONAL KNOWLEDGE

Diavik engages with local Indigenous communities and values community feedback and insights about how Diavik operates the Mine and monitors the environment or may be affecting the environment. As part of their commitment to the environment, Diavik incorporates available Traditional Knowledge in environmental plans and monitoring programs. For Diavik's WMMR, Traditional Knowledge has been incorporated through:

- study design
- wildlife ecology and the interpretation of monitoring results
- community participation with data collection

Incorporation of Traditional Knowledge into study design of monitoring programs has occurred for caribou habitat, grizzly bear, and wolverine. For caribou, Diavik and the Tłı̨chǫ Government carried out a Traditional Knowledge study in the summer of 2013 through a series of workshops and site visits where four participating elders from Tłı̨chǫ and Lutsel K'e shared stories and knowledge about caribou migration, preferred habitats (vegetation communities and landscape features), and traditional land use (Tłı̨chǫ Government 2013). The guidance provided by the elders resulted in selection of specific sampling sites for the vegetation and lichen monitoring program that were appropriate for caribou use. In addition to influencing the study design, Traditional Knowledge shared in this study has also been considered in the interpretation of monitoring results (see Appendix I of Golder 2017). Elders in the 2013 Traditional Knowledge study noted that caribou will avoid using the areas close to the Mine during migration because dust on forage will alter its taste or smell. Traditional knowledge has also been incorporated into the caribou scan surveys through means of a questionnaire. When elders are present, observed caribou are commented on from an animal health and traditional use perspective.

In 2012, the Diavik and Ekati mines collaborated on a new regional scale grizzly bear monitoring program because past mine-specific monitoring programs yielded inconclusive results from highly variable data (Handley 2010). The regional grizzly bear program involved hair snagging methods and included Traditional Knowledge holders to determine the best locations for hair snagging devices (Section 5; ERM 2014). From 2003 to 2006, the study design and data collection for wolverine snow track monitoring was based on the experience of Inuit Qaujimajatuqangit to locate transects and record wolverine snow tracks (Section 6).

Diavik's Traditional Knowledge Panel provides recommendations to Diavik. In 2021, the Traditional Knowledge Panel made recommendations to aspects of the caribou monitoring program, which included Rio Tinto Exploration recording caribou numbers, behaviour, and other metrics related to individual health (e.g., size, approximate weight) as well as implementing a wildlife scat collection program in and proximal to the Mine for purposes of dietary analysis (Det'on Cho Environmental 2022). DDMI provided responses to these recommendations in 2022 (Det'on Cho Environmental 2022). Caribou will be monitored to the fullest extent possible by DDMI Operations; however, it was noted that Rio Tinto Exploration does not have the expertise to assess the requested metrics. DDMI also noted that caribou scat is collected by the GNWT-ECC, and additional scat collection is outside of the scope of the monitoring program outlined in the WMMP (Det'on Cho Environmental 2022).

Where possible, Diavik tries to include community members in environmental monitoring annually. For example, Earnest (Patty) Lockhart from Lutsel K'e Dene First Nation participated in wolverine snow track surveys in 2023 (Section 6.3). Communities have participated in a variety of programs over the history of monitoring by Diavik (e.g., Golder 2018) and this has been documented in past reports. The WMMR is anticipated to evolve as Diavik receives input through community engagement, regulatory workshops, site visits, and Traditional Knowledge studies.

3.0 LANDSCAPE CHANGES

The scope of the landscape component of the WMMR is to determine if vegetation and surface water loss are within the magnitude or amounts predicted in the EER (DDMI 1998b). East Island vegetation cover is predominantly characterized by heath tundra and tussock / hummock landscape classes, but Mine construction and operation have also resulted in the loss of shallow and deep water. The main change from the Mine on the landscape is direct disturbance, which will be a long-term effect as the recovery of vegetation is slow in Arctic environments (Burt 1997).

Diavik conducts ongoing monitoring to determine if dust from the Mine is affecting vegetation communities, and lichen and soil chemistry. Permanent vegetation plots are assessed for plant species cover (relative abundance) and richness at Mine and reference sites. Metals concentrations are analyzed in lichen and soil samples near and far from the Mine. The 2021 Comprehensive Vegetation and Lichen Analysis Report indicated that the next cycle of vegetation monitoring should occur in three years (i.e., 2024) based on dustfall trigger exceedances (Golder 2019, 2022). As part of the Closure and Reclamation Plan, dust, vegetation, and lichen monitoring will be continued during closure and post-closure at fixed frequencies. The dustfall trigger will be discontinued at the end of the Life of Mine in 2026.

The objective of this component of the WMMR is to:

- Determine if direct vegetation/habitat loss due to the Mine footprint exceeds the prediction of 12.67 km^2.

3.1 Methods

A Satellite pour l'Observation de la Terre (SPOT) satellite image with a resolution of 150 cm was obtained and used to update the area of the current Mine footprint. The image was laid over the Ecological Landscape Classification (ELC) developed by the GNWT-ENR (Matthews et al. 2001). Each ELC type disturbed by the Mine was selected and calculations were made to determine the area (km^2) of each habitat type replaced by the Mine footprint. Values provided for ELC unit loss are estimates based on the predicted Mine extent (DDMI 1998a), the actual Mine footprint, and the ELC classification (Matthews et al. 2001). All analysis was completed in ArcGIS (ESRI 2011), a Geographic Information System (GIS) software.

3.2 Results

As of December 2023, a total area of 11.61 km^2 has been altered since Mine construction in 2000. This represents a relative loss of 91.6% of predicted landscape disturbance (DDMI 1998a). Landcover types at or slightly exceeding the predicted loss include riparian shrub, birch seep and shrub, boulder complex, disturbed, and esker (Table 2). In 2023, the ELC types that changed included heath tundra (0.02 km^2), health bedrock (0.01 km^2), and tussock/hummock (0.01 km^2). The Mine footprint may increase slightly during operations as a result of progressive reclamation activities. The annual geographic extent of landscape disturbed from the Mine footprint is illustrated in Figure 3.

Table 2: Total and Predicted Ecological Landscape Classification Unit Loss (km^2) Associated with Mine Development Phases, 2000 to 2023

ELC Type	Construction and Open Pit Mining (2000 to 2005)	Open Pit Mining (2006 to 2009)	Underground Mining (2010 to 2016)	Underground and Open Pit Mining and A21 Underground Development (2017 to 2023)[a]	Predicted[b]
Heath Tundra	2.60	2.94	3.28	3.67	3.68
Heath Bedrock (30% to 80%)	0.45	0.56	0.61	0.66	0.78
Heath Boulder (30% to 80%)	1.06	1.47	1.64	1.77	1.89
Tussock/Hummock	1.19	1.41	1.50	1.62	1.64
Sedge Wetland	0.16	0.21	0.22	0.25	0.26
Riparian Shrub	0.03	0.03	0.03	0.04	0.03
Birch Seep and Shrub	0.08	0.09	0.10	0.11	0.11
Boulder Complex	0.03	0.04	0.05	0.05	0.05
Bedrock Complex	0.05	0.06	0.06	0.07	0.07
Esker Complex	0.17	0.17	0.17	0.17	0.16
Disturbed[c]	0.05	0.06	0.06	0.06	0.06
Shallow Water	0.29	0.34	0.40	0.44	0.48
Deep Water	1.93	2.12	2.63	2.71	3.46
Total[d]	**8.10**	**9.50**	**10.75**	**11.61**	**12.67**

(a) Also represents cumulative loss to 2023.

(b) From DDMI 1998a.

(c) Disturbed includes areas that were already disturbed by exploration activities when the ELC was created.

(d) Any discrepancies in totals across the rows results from the rounding of numbers in annual columns for presentation purposes.

km^2 = square kilometres; % = percent.

530000
532000
534000
536000
538000
7154000
7152000
7150000
7148000

Lac de Gras

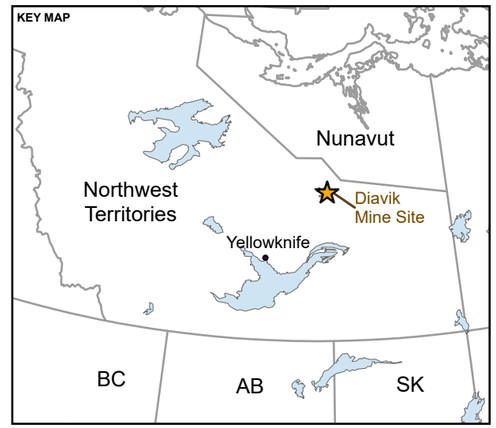
LEGEND

- MINE PERIMETER 2023
- WATERBODY

DISTURBANCE (2002-2023)

2002	2013
2003	2014
2004	2015
2005	2016
2006	2017
2007	2018
2008	2019
2009	2020
2010	2021
2011	2022
2012	2023

KEY MAP



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REFERENCE(S)

DISTURBANCE AND MINE FOOTPRINT DATA OBTAINED FROM CLIENT. HYDROGRAPHY, POPULATED PLACE, AND PROVINCIAL BOUNDARY DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.
PROJECTED COORDINATE SYSTEM: NAD 1983 UTM ZONE 12N

CLIENT
RIO TINTO EXPLORATION INC.

PROJECT
DIAVIK DIAMOND MINES INC.

TITLE
MINE FOOTPRINT EXPANSION BY YEAR, 2002 TO 2023

CONSULTANT
wsp

YYYY-MM-DD	2024-06-27
DESIGNED	GE
PREPARED	AA
REVIEWED	DC
APPROVED	DC

PROJECT NO.	CONTROL	REV.	FIGURE
23586538	6000	*0*	3

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4.0 BARREN GROUND CARIBOU

The Mine is within the spring (northern migration), summer, and fall/rut seasonal ranges of the Bathurst caribou herd (Gunn et al. 2002) and more recently in the shifted winter range. Caribou of this herd may travel through the Lac de Gras area during the northern migration to the calving grounds, and forage and move through the area during the summer and fall periods, sometimes following shorelines and onto the West and East Islands. Caribou from the Ahiak and Beverly caribou herds may also have ranges that overlap with the Mine to a lesser extent based on collared animal locations. At the time of this report, wintering caribou were present in the study area and caribou collar locations suggest these animals were most likely from the Beverly/Ahiak and Bathurst herds. Caribou from different herds may interact with the Mine and mitigation used by the Mine is designed to protect all caribou from any herd.

In 1996, the mean population size (± 95% confidence interval) of the Bathurst caribou herd was estimated at 349,000 ± 95,000 (Case et al. 1996; Gunn et al. 1997). The most recent population estimate determined by GNWT-ENR in 2021 was 6,240 animals (GNWT-ECC 2024a). Although the Beverly and Ahiak herds are not monitored as intensively as the Bathurst herd, the last census for the Ahiak herd was in June of 2011 and estimated 71,340 individuals (COMA 2020). The population of the Beverly herd was estimated to be 103,372 individuals in 2018 (COMA 2020). Similar to the Bathurst caribou herd these herds are believed to also be in decline as are a number of other circum-Arctic herds (Festa-Bianchet et al. 2011; Gunn et al. 2011).

Barren-ground caribou (*Rangifer tarandus groenlandicus*) were listed as threatened by the NWT Species at Risk (SAR) Committee on 11 July 2018 (NWT SAR 2018). The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed barren-ground caribou in November 2016 as threatened (COSEWIC 2024). To support the recovery of all barren-ground caribou herds, the 2020 Recovery Strategy for Barren-Ground Caribou in the Northwest Territories was developed (COMA 2020). The overall goals of the strategy are to (COMA 2020):

- Maintain or restore self-sustaining, resilient populations of each barren-ground caribou herd, such that no herd is lost.
- Support and maintain the caribou-people relationship.
- Promote conditions that allow caribou to move and migrate across their historic ranges without barriers.
- Promote the conditions necessary for recovery.

The Conference of Management Authorities (COMA), which is comprised of wildlife co-management boards and governments in the NWT, has outlined five objectives to obtain this goal (COMA 2020):

- Partners collaborate on the development and implementation of management, monitoring, guardianship, and conservation plans for barren-ground caribou in the NWT.
- Monitor barren-ground caribou, their habitat, and key factors and threats that may be affecting the status and health of herds in the NWT.
- Fill knowledge gaps, using traditional, community, and scientific knowledge, to enhance responsible and respectful barren-ground caribou conservation.
- Conserve and protect barren-ground caribou populations and their habitat.
- Provide education and promote respect for barren-ground caribou, their habitat, and conservation initiatives.

The strategy outlined the need to monitor the effects of predators on caribou as predation was considered a factor that could be managed. Wolves are the most important year-round natural predator of barren-ground caribou and knowledge of wolf numbers could help understand fluctuations in caribou populations and provide information required to support management decisions. In 2019, GNWT-ENR developed a Bathurst Caribou Range Plan (GNWT-ENR 2019), which proposes development limitations and hierarchical management actions for different areas in the Bathurst annual range. The Mine is located in Area 2 of the Bathurst Caribou Range Plan, which has a proposed moderate development level and status of cautionary. Mitigation included in the WMMP (DDMI 2022a) is consistent with mitigation prescribed in the Bathurst Caribou Range Plan for developments in Area 2.

4.1 Habitat Loss

Physical alteration of the landscape reduces available caribou forage (DDMI 1998b). Habitat loss on East Island is expressed in habitat units (HUs) for caribou summer habitat. A habitat unit is the product of surface area and suitability of the habitat in that area to supply food for caribou and cover from predators (DDMI 1998b). Habitats were rated on a scale of 0 to 1 HUs for their capability to support caribou, with values greater than 0.30 regarded as highly suitable habitat and values less than 0.25 rated as low suitability for caribou. The area of each habitat type on East Island was multiplied by its habitat suitability value to determine the number of foraging habitat units available to caribou. One objective of the caribou component of the WMMR is to determine if direct summer habitat loss (in habitat units [HUs]) is greater than predicted. The impact prediction in the EER (DDMI 1998b) is:

- At full development, direct summer habitat loss from the project is predicted to equal 2.965 HUs.

Dust deposition can also alter the landscape either by positively influencing vegetation vigour through deposition of nutrients and increased snowmelt rates, or by reducing plant growth by coating leaves and adversely changing soil chemistry. Both mechanisms can lead to a change in plant communities, and forage quality and quantity for caribou. Diavik also monitors for the effect of dust deposition on vegetation (including lichen) and soil chemistry (Section 3.0).

4.1.1 Methods

Using the ELC unit loss (Table 2), the area (km^2) of ELC lost was multiplied by its habitat suitability value (DDMI 1998b) to determine habitat units lost.

4.1.2 Results

Direct summer habitat loss to date from the Mine is approximately 2.88 HUs (Table 3). As noted above, ELC unit loss is below the level predicted in the EER (Table 2). Similarly, total direct losses of summer HUs for caribou are currently below that predicted in the EER (Table 3).

Table 3: Caribou Summer Habitat Unit Loss to 2023

ELC Type	Habitat Suitability Value	Cumulative ELC Loss to 2023 (km^2)	Cumulative Habitat Unit Loss to 2023
Heath Tundra	0.37	3.67	1.36
Heath Boulder	0.40	1.77	0.71
Riparian Shrub	0.46	0.04	0.02
Bedrock Complex	0.27	0.07	0.02
Tussock/Hummock	0.30	1.62	0.49
Sedge Wetland	0.28	0.25	0.07
Esker Complex	0.30	0.17	0.05
Birch Seep and Shrub	0.11	0.11	0.01
Boulder Complex	0.21	0.05	0.01
Heath Bedrock	0.23	0.66	0.15
Total[(a)]	**-**	**8.41**	**2.88**

(a) Any discrepancies in totals result from the rounding of numbers for presentation purposes.

4.2 Changes to Movement

To evaluate changes in caribou movement in proximity to the Mine, collar data collected from Beverly/Ahiak and Bathurst caribou herds in 2023 were analyzed following Poole et al. (2021) and the methods presented in the 2021 and 2022 WMMR (WSP Golder 2022c; WSP 2023). In 2021, Poole et al. provided the first exploratory analysis of geo-fence collar data and caribou interactions with the Ekati mine. DDMI committed to completing a similar analysis of geo-fence caribou collar data, following Poole et al.'s (2021) approach and in relation to the Diavik mine. These initial movement analyses were submitted as an addendum (WSP Golder 2022c) to the 2021 WMMR (WSP Golder 2022a). A comprehensive caribou movement analysis was completed as part of the 2022 WMMR (WSP 2023), which evaluated caribou movement at varying distances from the Ekati-Diavik mine complex to evaluate potential changes to caribou movement behaviours in response to the Mine.

This section of the WMMR provides a summary of movement metrics of caribou near the Mine (within a 3 km buffer zone) in 2023. Movement behaviours of caribou from Bathurst and Beverly/Ahiak herds are assessed using two movement metrics (i.e., speed, and proportion of hard turns). A 3 km buffer zone is used as the focal area to evaluate movement metrics in relative proximity to the Mine and metrics are compared with a reference group for each herd that represents population-level estimates from collared caribou movement paths located outside a 30 km buffer zone surrounding the Mine. Movement metrics calculated from caribou movement paths in the 3 km buffer zone were evaluated to determine if they overlapped those exhibited by the reference group. As a result, this analysis examines whether movement metrics were within expected population-level estimates or if they differ when closer to the Mine. In previous years, residency time was included as an additional movement metric but has since been removed to reduce redundancy, as it was found to be correlated with speed and proportion of hard turns (WSP 2023).

4.2.1 Methods

4.2.1.1 Data Preparation

Telemetry data from caribou in the Bathurst and Beverly/Ahiak herds from 15 January to 31 December 2023 were provided by the GNWT-ECC (Figure 4). Telemetry data were collected from both male and female caribou from the Bathurst and Beverly/Ahiak herds; however, a higher proportion of female caribou were equipped with collars (Table 4). Collars deployed in 2023 were geo-fence GPS collars, which were programmed to collect location data at 8-hour fixes but increased to 1-hour fixes when a caribou triggered a 'geo-fence' by travelling within a 30 km radius of the Mine.

To clean the 2023 GPS telemetry dataset, duplicate telemetry data were identified and removed, which included identical records as well as records with duplicated timestamps from the same individual despite varying information in other columns. Records with missing location data, and those with timestamps listed as "00:00:00 00:00:00" were removed based on guidance from the GNWT-ECC (email comm, GNWT-ECC). The first two weeks of data collected from each collar were removed to exclude locations that may have been influenced by behavioural effects from capture events (Werdel et al. 2021). Caribou-years with less than 10 location records were excluded. All location records included in the caribou GPS data were class G, indicating that the location is a GPS fix obtained by a GPS receiver with accuracy better than 100 metres.

After the telemetry data were filtered according to the criteria above, data records were assigned a biological year and season. A biological year was defined as the time from the start of spring migration until the end of winter the following year (e.g., 20 April 2022 to 19 April 2023). For example, a caribou location collected on 16 January 2023 would be classified into the 2022 biological year. Sorting by biological year rather than calendar year is important so that the data collected during the same winter season can be evaluated together, rather than being split into two separate years. Data were sorted into six seasons (Table 4), which were defined according to Poole et al. (2021).

Table 4: Caribou Seasons, defined by Poole et al. (2021)

Season	Date Range
Spring migration	20 April – 1 June
Calving	2 June –16 June
Post-calving	17June – 28 June
Summer	29 June – 6 September
Fall	7 September – 30 November
Winter	1 December – 19 April

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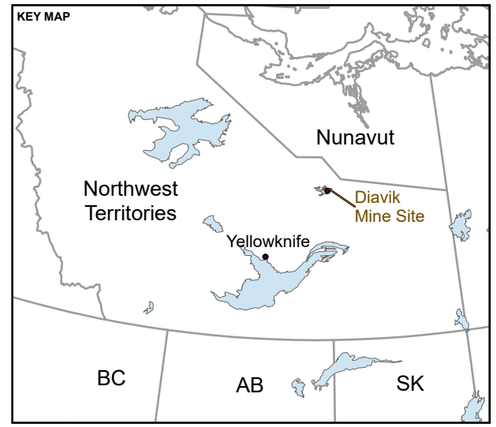
7150000
7125000

Ekati Mine
Misery Pit
Lac du Sauvage
West Island
East Island
Diavik Mine
Lac de Gras

LEGEND

- BATHURST TELEMETRY LOCATION
- BEVERLY/AHIAK TELEMETRY LOCATION
- WATERCOURSE
- DIAVIK FOOTPRINT
- EKATI FOOTPRINT
- DIAVIK FOOTPRINT 3 KILOMETRE BUFFER
- DIAVIK FOOTPRINT 30 KILOMETRE BUFFER
- WATERBODY

KEY MAP



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REFERENCE(S)

BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.
PROJECTED COORDINATE SYSTEM: NAD 1983 UTM ZONE 12N

CLIENT
RIO TINTO EXPLORATION INC.

PROJECT
DIAVIK DIAMOND MINES INC.

TITLE
FILTERED TELEMETRY LOCATIONS COLLECTED FROM COLLARED BARREN-GROUND CARIBOU IN THE BATHURST AND BEVERLY/ AHIAK HERDS IN THE 3 KM BUFFER AROUND THE MINE, 2023

CONSULTANT

YYYY-MM-DD	2024-06-27
DESIGNED	GE
PREPARED	SP
REVIEWED	DC
APPROVED	DC

PROJECT NO.	CONTROL	REV.	FIGURE
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4.2.1.2 Movement Metrics

The filtered telemetry dataset was input into a GIS, and movement paths (steps) were created for each caribou as spatial polylines using the XY to line tool in ArcGIS (ESRI 2011). Paths are the straight-line steps that connect consecutive caribou locations. Caribou paths were overlaid on top of the 3 km and reference buffer zone (i.e., 30 km buffer) in GIS (ESRI 2011), and if they crossed a buffer zone boundary, they were segmented at the buffer zone boundary and each segment was assigned to the applicable buffer zone. Figure 5 depicts how two movement paths from caribou-years were segmented within the 3 km and reference buffer zones.

All segmented paths were given a unique code (ID) that identified the original path it was derived from and the order of occurrence in the original path (e.g., “200-2” referred to the second segment of path 200). Segmented paths did not have a timestamp associated with them, so multiple steps were taken to assign each segmented path a revised timestamp. First, the length of each original path and segmented path were calculated in kilometres in a GIS. Then, the duration (time length) of each segmented path was calculated by dividing the distance of a segmented path by the total distance of its original path and multiplying the proportionate length by the fix rate of the original path. This calculation resulted in a duration (hours) for each segmented path. Next, segmented paths were grouped by their original path and then ordered using their unique ID, which ordered the segmented paths consecutively. A cumulative duration was calculated for each segmented path by summing the duration of each segmented path with the durations of the previous segmented paths from the original path. Finally, a new timestamp was estimated for each segmented path by adding its cumulative duration with the timestamp from the previous original path. These segmented paths represent the movement paths used in the analysis.

Movement metrics calculated for all movement paths within the 3 km and reference buffer zones for this analysis included speed (i.e., movement rate), and proportion of hard turns (calculated from turning angles). Speed (i.e., movement rate) was calculated for movement paths within each buffer zone as the distance moved per hour (i.e., km/hr) by dividing the distance of each path (kilometres) by the duration (in hours) of each path (as described above). For each herd and season in a biological year, a mean speed was also calculated by averaging caribou movement rate within each buffer zone. Movement metrics were calculated and summarized in R v. 4.3.2 (R Core Team 2023).

Turning angle was calculated as the relative difference in headings between two consecutive movement paths using the adehabitatLT package (Calenge 2006). If a sequential movement path was missing from the dataset (i.e., due to data cleaning and/or missed GPS fixes), a turning angle could not be calculated. Records without turning angles were removed from the dataset before summarizing turning angle information, resulting in a smaller sample size of turning angles (versus residency and speed datasets). Turning angles were first calculated in radians but were converted to degrees for easier interpretation. For simplicity, only the absolute value of turning angles were reported because it did not matter whether a caribou turned to the left or right but, rather, if they deviated from their heading (Poole et al. 2021). Following Poole et al. (2021), turning angles were identified as a ‘hard turn’ if the absolute turning angle was ≥ 60 degrees. The mean proportion of hard turns were calculated for each herd within each of the 3 km and reference buffer zones by season and year.

Comparisons between metrics calculated for the 3 km buffer zone with each herd’s reference group helped to determine if caribou movements near the Mine varied substantially from caribou assumed to be not influenced by mining activity. The comparisons include the use of standard deviation units because of the extreme differences in sample sizes of movement metrics between reference and within 3 km groups of collared caribou.

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Diavik Mine

East Island

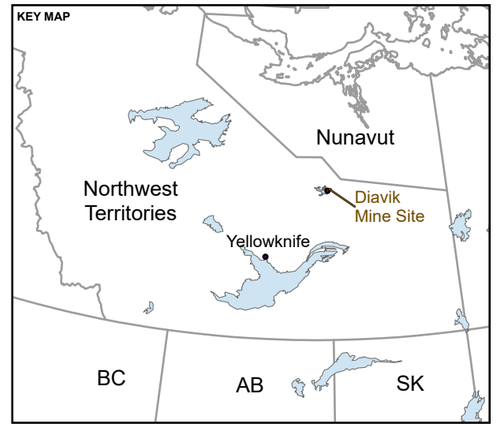
LEGEND

- WATERCOURSE
- DIAVIK FOOTPRINT
- EKATI FOOTPRINT
- DIAVIK FOOTPRINT 3 KILOMETRE BUFFER
- DIAVIK FOOTPRINT 30 KILOMETRE BUFFER
- WATERBODY
- CARIBOU TRAJECTORY OUTSIDE OF 3 KM BUFFER

CARIBOU ID - YEAR INTERSECTING 3 KM BUFFER

- BGCA21702-2022
- BGCA22131-2023
- BGCA23121-2022
- BGCA23146-2023
- BGCA23154-2022
- BGCA23200-2023

KEY MAP



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REFERENCE(S)

BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.
PROJECTED COORDINATE SYSTEM: NAD 1983 UTM ZONE 12N

CLIENT
RIO TINTO EXPLORATION INC.

PROJECT
DIAVIK DIAMOND MINES INC.

TITLE
EXAMPLE OF SIX CARIBOU WITH MOVEMENT PATHS INSIDE THE 3 KM BUFFER AROUND THE MINE, 2023

CONSULTANT
wsp

YYYY-MM-DD	2024-06-27
DESIGNED	GE
PREPARED	SP
REVIEWED	DC
APPROVED	DC

PROJECT NO.	CONTROL	REV.	FIGURE
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4.2.2 Results

4.2.2.1 Data Preparation

The final cleaned dataset consisted of 77,710 records from the Bathurst herd and 134,336 from the Beverly/Ahiak herd. Figure 4 presents the filtered telemetry locations from caribou in the Bathurst and Beverly/Ahiak herds from 2023. Telemetry data from a total of 167 caribou (n = 61 Bathurst caribou; n = 106 Beverly/Ahiak caribou) were used in the movement analyses, resulting in 313 caribou-years (n = 105 Bathurst caribou-years; n = 208 Beverly/Ahiak caribou-years; Table 5). The mean annual number of telemetry locations from collared caribou in this analysis was 2,384 locations (SD = 2,061) in the Bathurst herd and 1,051 locations (SD = 1,200) in the Beverly/Ahiak herd.

Of the 61 collared caribou (105 caribou-years) from the collared Bathurst herd that had telemetry data collected, two caribou (3.3%) had movement paths that occurred within the 3 km buffer zone (Table 5). Four collared caribou (3.8%) from the Beverly/Ahiak herd had movement paths within the 3 km buffer zone out of a total 106 collared caribou (208 caribou-years). In 2023, all collared caribou observed within the 3 km buffer zone were female, this is likely due to the greater number of females collared compared to males in each herd throughout the study.

Table 5: Count of collared caribou and caribou years (n) from the Bathurst and Beveryly/Ahiak herds with at least one path inside 3 km buffer zone around the Mine and in the reference group (i.e., outside the 30 km buffer zone), 2022-2023.

Herd	Count type	Collared caribou in the 3 km buffer			Collared caribou in the reference group[b]			Total collared caribou		
		F	M	Total[a]	F	M	Total[a]	F	M	Total
Bathurst	Caribou	2	0	2 (3.3%)	45	16	61 (100%)	45	16	61
	Caribou-years	2	0	2 (1.9%)	76	29	105 (100%)	76	29	105
Beverly/Ahiak	Caribou	4	0	4 (3.8%)	61	45	106 (100%)	61	45	106
	Caribou-years	4	0	4 (1.9%)	119	88	207 (99.5%)	119	89	208

(a) Count and percent of collared caribou in the collared herd.

(b) Caribou in the reference group are located outside the 30 km buffer around the Mine.

Abbreviations: F = female, M = male, km = kilometres,% = percent.

The number of caribou with movement paths inside the 3 km buffer zone varied from one to three caribou across biological years, seasons, and herds, and remained below 3% of total collared caribou for all seasons each year (Table 6). Most caribou were observed within the 3 km buffer zone in winter 2022 and in fall 2023 for both herds. No caribou had movement paths within 3 km of the Mine during the spring migration, calving, post-calving, and summer seasons except for one collared individual from the Beverly/Ahiak whose movement path was within the 3 km buffer zone in summer 2023.

Table 6: Count of collared caribou (n) by herd and season with at least one movement path in the 3 km buffer zone around the Mine and in the reference group (i.e., outside the 30 km buffer zone), 2022-2023.

Herd	Biological Year	Season	Collared caribou in the 3 km buffer[a]	Collared caribou in the reference group[a,b]	Total collared caribou
Bathurst	2022	Winter	1 (1.6%)	61 (100%)	61
	2023	Spring migration	0 (0%)	44 (100%)	44
		Calving	0 (0%)	43 (100%)	43
		Post-calving	0 (0%)	43 (100%)	43
		Summer	0 (0%)	42 (100%)	42
		Fall	1 (2.5%)	40 (100%)	40
		Winter	0 (0%)	31 (100%)	31
Beverly/Ahiak	2022	Winter	2 (1.9%)	105 (99.1%)	106
	2023	Spring migration	0 (0%)	102 (100%)	102
		Calving	0 (0%)	100 (100%)	100
		Post-calving	0 (0%)	100 (100%)	100
		Summer	1 (1%)	100 (100%)	100
		Fall	1 (1.1%)	88 (100%)	88
		Winter	0 (0%)	70 (100%)	70

(a) Count and percent of collared caribou in the collared herd.

(b) Caribou in the reference group are located outside the 30 km buffer around the Mine.

Abbreviations: km = kilometres,% = percent.

The mean length of time that location data were collected from collared caribou during the study period was 226 days and 257 days for the Bathurst and Beverly/Ahiak herds, respectively. The mean number of telemetry locations collected from collared caribou in the Bathurst herd was 1,274 locations and from the Beverly/Ahiak herd was 1,267 locations during the study period. Within both buffer zones, most caribou from the Bathurst herd had the greatest proportion of fixes collected at 8-hour intervals (n=40; Table 7). One caribou from the Beverly/Ahiak herd had a greater proportion of 1-hour fixes within the 3 km buffer zone and the remaining had approximated fix rate of 8 hours. Collared caribou in the Beverly/Ahiak herd within the reference group had more

Table 7: Number of collared caribou (n) with approximated fix rates from the Bathurst and Beverly/Ahiak herds, 2022-2023.

Herd	Collared caribou within 3 km buffer		Collared caribou within reference group (outside 30 km)	
	1 hr	8 hr	1 hr	8 hr
Bathurst	2	0	21	40
Beverly/Ahiak	1	3	33	73

Abbreviations: km = kilometres.

4.2.2.2 Movement Metrics

Speed

The mean speed (km/hr) of caribou varied across seasons and herds. The fastest mean speed was 1.2 km/hr (SD = ± 0.8) and was observed from a caribou in the Beverly/Ahiak herd during the summer (Table 8; Figure 6). The mean speed from caribou paths outside the 30 km buffer zone remained within a narrow range of 0.3 to 0.6 km/hr and varied slightly across herds and seasons (Table 8; Figure 6). Across both herds, the greatest mean speeds observed in the reference groups were during the spring migration, post-calving, and summer seasons. The mean speeds estimated from caribou within the 3 km buffer zone overlapped within one standard deviation of the estimated speed of the associated reference group (Figure 6). This indicates that the mean speeds of caribou in the 3 km buffer zone were comparable to the reference groups outside of the 30 km buffer zone.

Table 8: Mean speed, calculated in kilometres per hour (km/hr), of caribou with movement paths in the 3 km buffer around the Mine in 2022-2023.

Herd	Season	Collared caribou within 3 km buffer)		Collared caribou within reference group (outside 30 km)	
		n	Mean speed ± 1 SD (km/hr)	n	Mean speed ± 1 SD (km/hr)
Bathurst	Spring migration	0	-	44	0.6 ± 0.7
	Calving	0	-	43	0.3 ± 0.3
	Post-calving	0	-	43	0.4 ± 0.4
	Summer	0	-	42	0.4 ± 0.5
	Fall	1	0.3 ± 0.5	40	0.3 ± 0.4
	Winter	1	0.8 ± 0.9	61	0.3 ± 0.6
Beverly/Ahiak	Spring migration	0	-	102	0.6 ± 0.6
	Calving	0	-	100	0.4 ± 0.4
	Post-calving	0	-	100	0.6 ± 0.5
	Summer	1	1.2 ± 0.8	100	0.6 ± 0.7
	Fall	1	0.6 ± 0	88	0.5 ± 0.7
	Winter	2	0.3 ± 0.4	106	0.4 ± 0.6

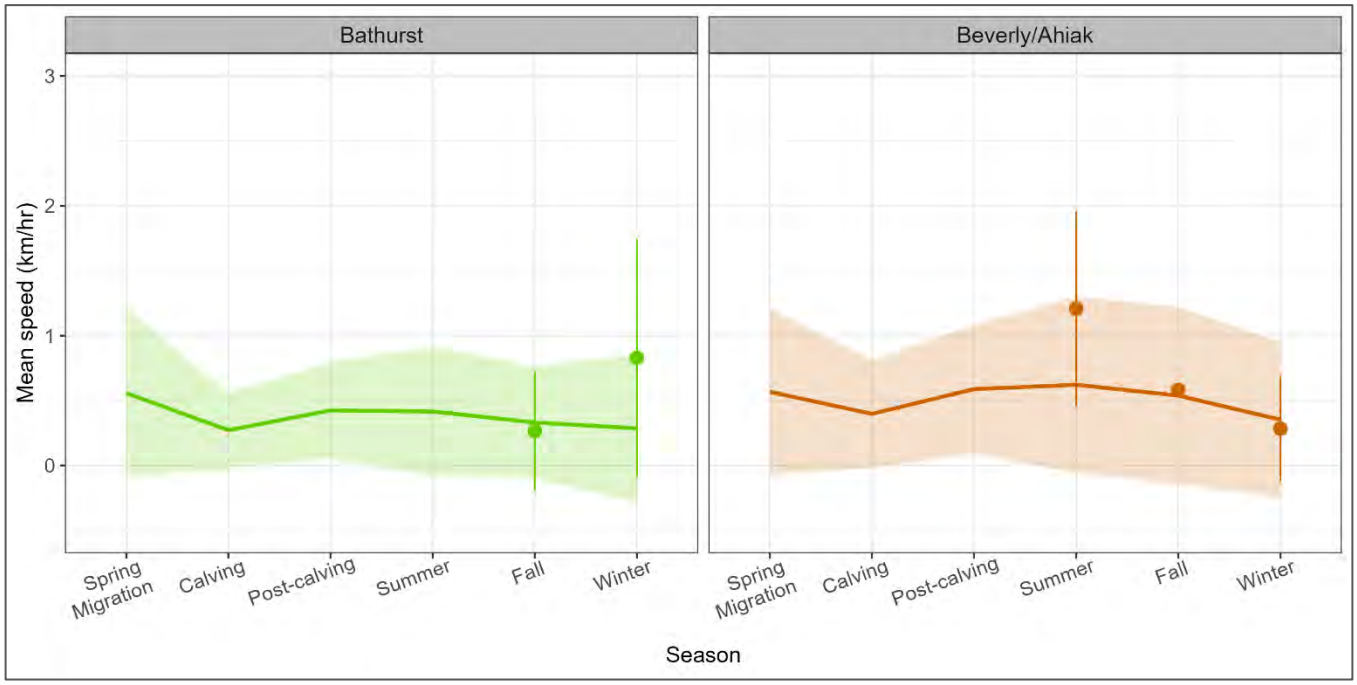


Figure 6: Mean speed (km/hr) by herd and season of caribou with movement paths in the 3 km buffer zone around the Mine in 2023.

Note: Error bars represent two standard deviations (SD) of the mean. Horizontal lines and shading represent the mean plus/minus two SD for the reference group of each herd and season. SD are provided where sample sizes ≥ 3 caribou. Corresponding mean speed values by season and herd within the 3 km buffer zone are presented in Table 8.

Proportion of Hard Turns

The distribution of relative turning angles for caribou within the 3 km buffer (0-3 km) around the Mine are compared to the reference group for each herd in Figure 7. The reference group for each herd had the highest sample size of turning angles, and the total frequency was higher for Beverly/Ahiak caribou than Bathurst caribou (Figure 7). In general, the distribution of turning angles was similar across the 3 km buffer and reference groups, where caribou exhibited greater frequencies of relative turning angles that were less than 60˚. Sample sizes of turning angles in the 3 km buffer were much smaller than the reference groups, which resulted in smaller distributions in the 3 km buffer per season and herd (Figure 7). The 3 km buffer zone had low frequencies of turning angles because few caribou movement paths were available in the small 3 km buffer around the Mine.

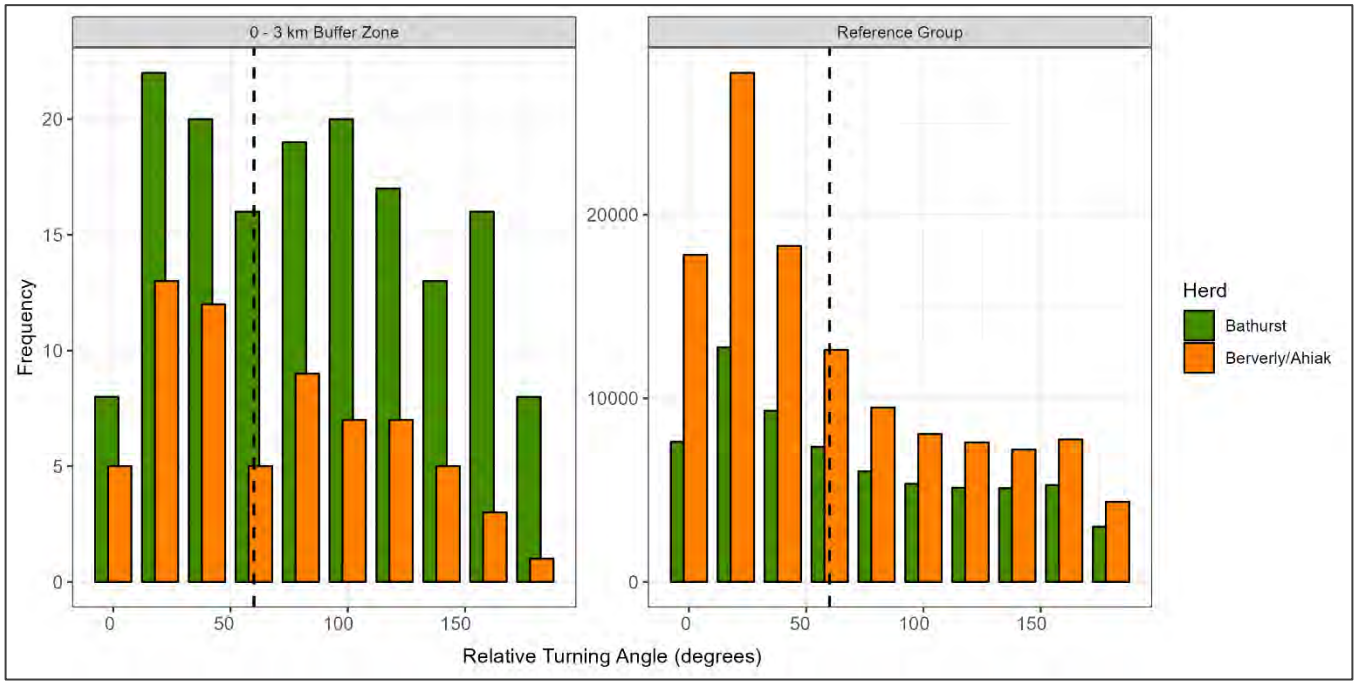


Figure 7: Frequency of relative turning angles (˚) for Bathurst and Beverly/Ahiak caribou herds within the 3 km buffer and reference group, 2022-2023.

Note: The dashed line indicates the threshold for determining a hard turn (i.e., ≥ 60˚).

Mean proportion of hard turns was relatively constant for each reference group across seasons, ranging from 0.3–0.6 (Table 9; Figure 8). Thus, approximately one third to one half of turns made by reference group caribou were hard turns (≥ 60˚; Table 9; Figure 8). The proportion of hard turns varied across individuals in the 3 km buffer zone from 0.3 to 0.7 (Table 9; Figure 8). Most of these caribou had proportion of hard turns that were within or slightly outside the proportions exhibited by the reference group (i.e., within 2 SD). Standard deviation could not be calculated for any value presented in Table 9 and Figure 8 due to low sample sizes per season for each herd (n = ≤ 2).

Table 9: Mean proportion of hard turns (turns ≥ 60˚) of caribou with movement paths in the 3 km buffer around the Mine, 2022-2023.

Herd	Season	Collared caribou within 3 km buffer		Collared caribou within reference group (outside 30 km)	
		n[(a)]	Mean proportion of hard turns ± 1 SD (> 60°)[(a)]	n[(a)]	Mean proportion of hard turns ± 1 SD (> 60°)[(a)]
Bathurst	Spring migration	0	-	44	0.3 ± 0.1
	Calving	0	-	43	0.5 ± 0.1
	Post-calving	0	-	43	0.6 ± 0.1
	Summer	0	-	42	0.6 ± 0.1
	Fall	1	0.7	40	0.4 ± 0.1
	Winter	1	0.3	61	0.5 ± 0.1
Beverly/Ahiak	Spring migration	0	-	102	0.3 ± 0.1
	Calving	0	-	100	0.4 ± 0.1
	Post-calving	0	-	100	0.3 ± 0.1
	Summer	0	-	100	0.5 ± 0.1
	Fall	0	-	88	0.4 ± 0.1
	Winter	2	0.5	106	0.4 ± 0.1

(a) Proportion of hard turns was calculated for each caribou with ≥ 2 turns (equals ≥ 4 consecutive telemetry locations) collected in the 3 km buffer or reference group (outside 30 km buffer). Standard deviation is provided for estimates with sample sizes ≥ 3 caribou.

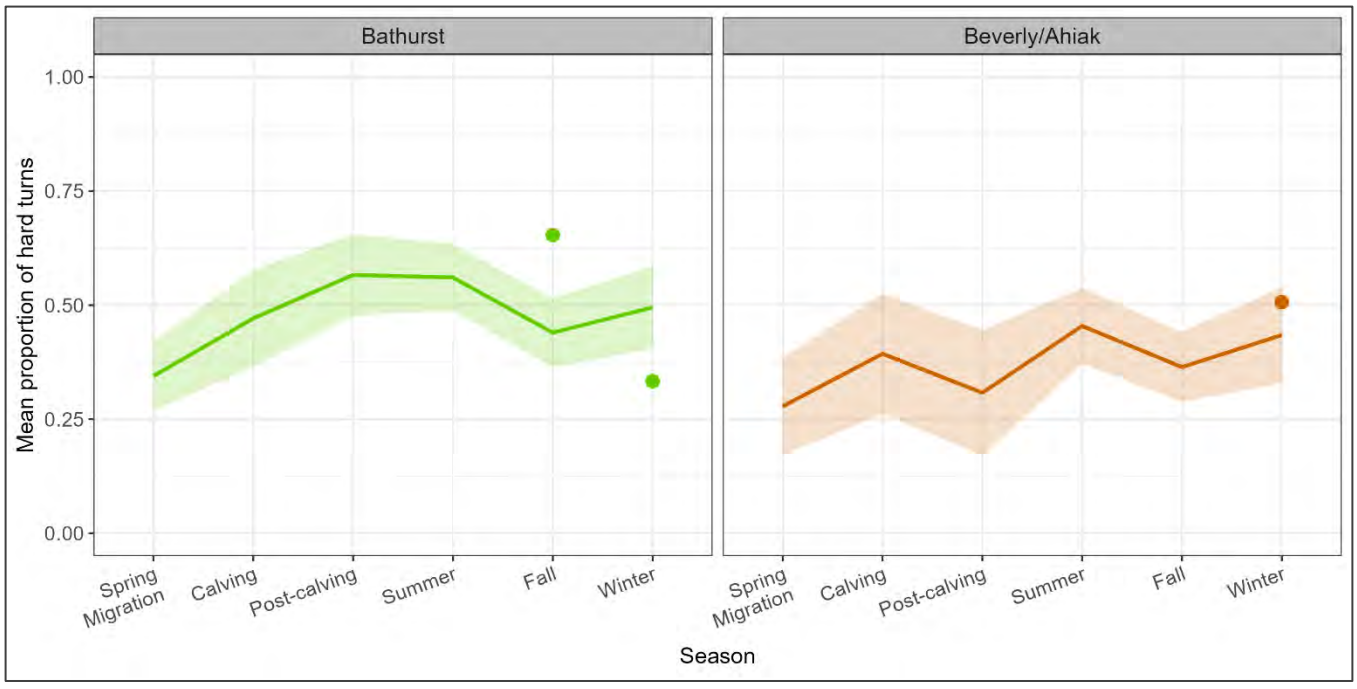


Figure 8: Mean proportion of hard turns (turns ≥ 60˚) by herd and season of caribou with movement paths in the 3 km buffer around the Mine in 2022-2023.

Note: Error bars represent two standard deviations (SD) of the mean. Horizontal lines and shading represent the mean plus/minus two SD for the reference group of each herd and season. SD are provided where sample sizes ≥ 3 caribou. Corresponding mean proportion of hard turn values by season and herd within the 3 km buffer zone are presented in Table 9.

4.2.3 Conclusion

This movement analysis summarized and compared speed and proportion of hard turns of caribou within 3 km of the Mine and in each herds' reference group (i.e., located ≥ 30 km from the Mine). During 2023, a total of six caribou were observed within the 3 km buffer in the summer, fall, and winter. In most cases, collared caribou exhibited speeds and proportions of hard turns that were within the range of estimates for their associated reference group. There are very low numbers of collared caribou that spend time near the Mine.

Movement metrics estimated for the Bathurst and Beverly/Ahiak reference groups in 2023 were similar to those exhibited by the reference groups in 2010 to 2022, as evaluated in the 2022 WMMR (WSP 2023). For example, during spring migration, collared caribou in the reference group travelled faster and had lower proportions of hard turns. This indicates that caribou moved directionally and quickly as they migrated to their calving grounds. In contrast, during calving, summer, and fall, reference caribou tended to move slower and less directionally (i.e., higher proportion of hard turns), suggesting that individuals engaged in foraging and/or bedding behaviour more often than moving directionally over long-distances.

All caribou in the 3 km buffer exhibited mean speeds that overlapped the variation in mean speeds exhibited by the Bathurst and Beverly/Ahiak reference groups (i.e., overlapped 2 SD of mean speed). Four of the six caribou in the reference group had enough data available to calculate proportion of hard turns. Of the four caribou that had enough telemetry data in the 3 km buffer to estimate proportion of hard turns, two had proportion of hard turns that overlapped the estimates of their reference group. One caribou (BGCA22131; female) that was observed in the 3 km buffer for six consecutive days on the mainland to the east of the Mine in the fall 2023 (Figure 5) had a proportion of hard turns that exceeded the variation the Bathurst reference group. This caribou also exhibited slower speeds, which may indicate foraging, bedding and/or resting behaviour in suitable habitat in the 3 km buffer (Figure 5). The remaining Bathurst caribou (BGCA21702; female) was observed in winter 2022 for less than one day where it travelled quickly and directionally through the 3 km buffer from the mainland northwest of the Mine through the southwest portion of East Island (Figure 5). This caribou exhibited less hard turns than the Bathurst reference group and had faster speeds than most caribou in the 3 km buffer, indicating that it travelled quickly and mostly in a straight line.

Overall, caribou appeared to exhibit similar movement metrics when in proximity to the Mine, relative their herd's reference group. However, the low sample sizes of caribou that used areas within 3 km of the Mine limited the inferences that could be made about caribou movement behaviours near the Mine but confirms that a very small proportion of Bathurst and Ahiak caribou interact with the Mine. This movement analysis should not be used to infer the presence and/or magnitude of a ZOI surrounding the Mine, nor should 30 km (cut-off distance for the reference group) be inferred as the ZOI surrounding the Mine. Boulanger et al. (2021) investigated second order habitat selection (Johnson et al. 1980) within 40 km of mines and found that the ZOI around the Diavik-Ekati mine complex varied by year and ranged from 0.0 to 12.8 km from 2009 through 2017. The movement analysis presented here investigated movement behaviour within 3 km of the Mine and outside 30 km of the Mine.

4.3 Changes to Behaviour

Ground-based behavioural observations, or scan sampling, are completed to provide data on changes in caribou behaviour as a function of distance from the Mine. The monitoring objective from Handley (2010) is:

- To determine if caribou behaviour changes with distance from the mines.

The 2021 Diamond Mine Wildlife Monitoring Meetings hosted by the GNWT-ENR on 2 and 3 of February 2021 determined that the caribou behaviour monitoring program could be discontinued. Although 24 years of monitoring indicates no strong adverse response, in December 2023, DDMI agreed to continue to conduct group scan caribou behaviour monitoring visible from the Mine site (i.e., near field) (GNWT-ECC 2024b) and will discontinue far-field scans in 2024.

4.3.1 Methods

Caribou groups were scanned every eight minutes for a minimum of four observations and a maximum of eight observations. For each scan, the number of animals exhibiting each type of behaviour was recorded (Murphy and Curatolo 1987). Individual caribou activities were recorded as feeding, bedded, standing, alert, walking, trotting, or running. Individuals were classified as feeding when they were actively foraging or searching for food (i.e., walking with head down). The GPS location was recorded, and observations were completed during the autumn (and more recently, during winter) when more caribou were passing through the area. Group composition was classified (e.g., males, females, males and females, and females and calves), and the number of animals in the group was recorded. If a group was too large where recording behaviour for each individual was not feasible, the total group size was noted, and a subset of the group was observed for behaviour. The response variable is caribou behaviour, while the covariates include distance from either mine, group composition, and weather variables.

Caribou observations during snow-free periods were performed in one habitat type (tundra with <30% bedrock or boulders). During recent years, caribou have been present during winter, when far-field monitoring of caribou behaviour increases human health risks or requires a change in methods of data collection (e.g., snowmobile versus helicopter). Such changes influence continuity with historical data and may increase disturbance to caribou. During winter months, only caribou groups near the Mine are monitored to avoid these issues. In winter months, habitat types are not observable, and scans are completed on caribou groups irrespective of habitat type. For the scan observations, weather conditions such as wind speed and direction, temperature, and type of precipitation were documented.

Response of caribou to stressors (natural or anthropogenic) was also assessed. In the event that a stressor was introduced during scan sampling, the observers noted the time and recorded the response of caribou to stressors as either no response, looked in the direction of the stressor, trotted or ran away. The reaction of the majority of the group was used in selecting the category. Estimated distance (m) from the stressor was also recorded. Stressors included type of wildlife, type of aircraft, type of vehicle, and blasts from pits. The observers then waited until the animals resumed their previous behaviour (usually 1 to 2 minutes) and would begin scanning observations again.

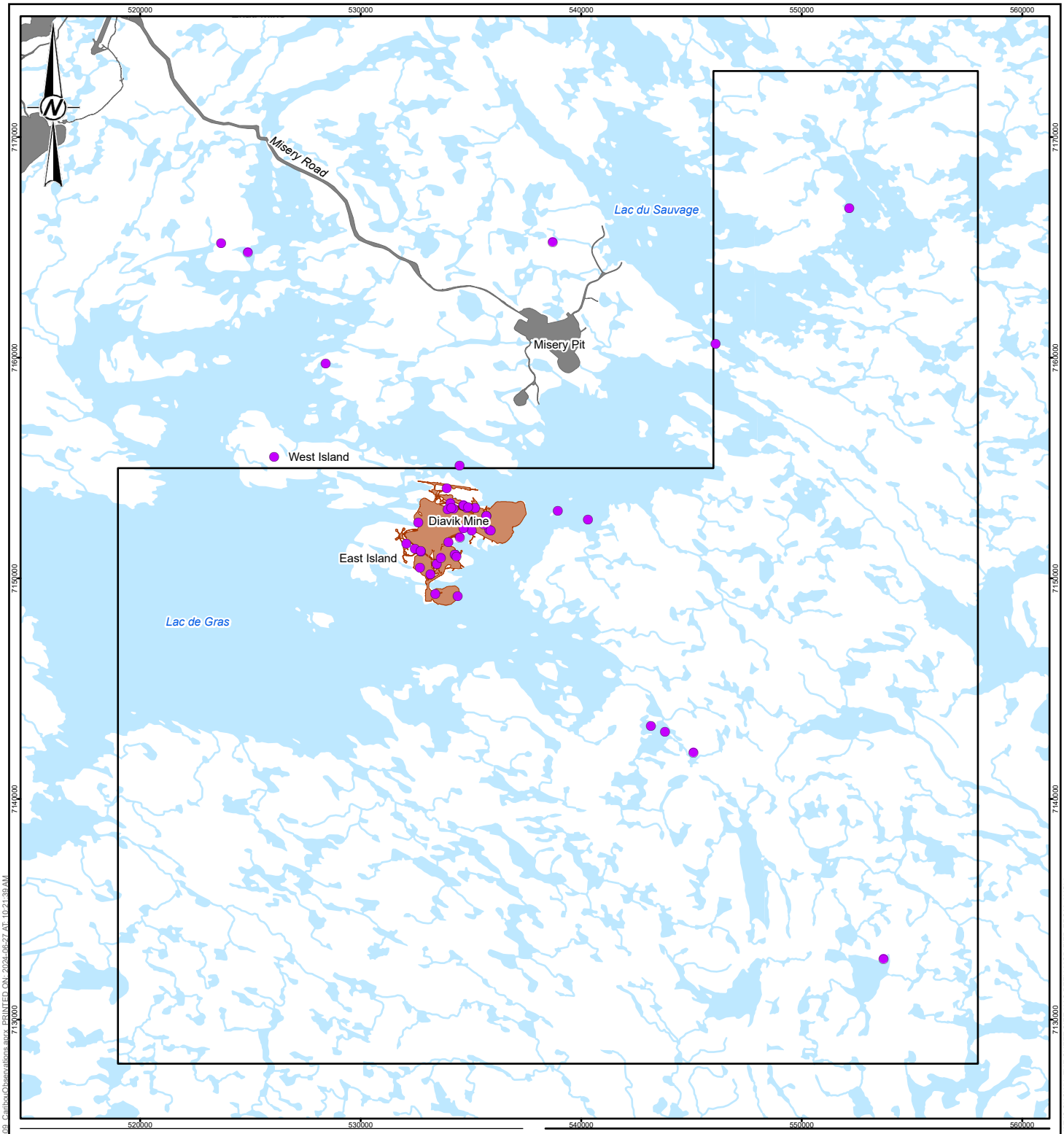
Focal scans are not included in the caribou behavioural analysis. Focal scans can provide valuable information on animal states and behavior; however, low and inadequate annual group scan samples have prevented such an analysis. This has been documented in annual reports (Golder 2018, 2019a, 2020, 2021; WSP Golder 2022; WSP 2023a). The emphasis by DDMI continues to be on the collection of group scan data until a fulsome set of observations that align with other regional observations is achieved.

4.3.2 Results

From 25 March to 30 October behaviour scans were completed on 44 caribou groups from 0 km to 5 km from the Mine (Figure 9; Appendix B). Of the 44 scans conducted, 14 could not be included in the behaviour analysis because the scans did not contain the minimum number of four observations, or the recorded data were incomplete or contained errors (Appendix B). The caribou behaviour analysis was conducted with the 30 behaviour scans containing sufficient data. These caribou were potentially from the Beverly/Ahiak and Bathurst herds based on collared caribou locations.

A total of 956 caribou were observed across the 30 behaviour scans. Group size ranged from 1 to 250 with an average group size of 31 animals (1SD = 78 animals). The estimated mean proportions (± 2SE) of caribou behaviour observed were as follows: bedded 29% (17%), feeding 35% (17%), standing 5% (8%), alert 2% (6%), walking 26% (16%), trotting 1% (3%), and running 2% (5%). No focal scans were completed in 2023.

The number of caribou groups observed in 2023 remained below the 55 groups in different distance strata required to detect a 15% change in behaviour derived from past summer and autumn results. If seasonal variation in behaviour is present, it would increase sample size requirements for these data to be combined with observations collected during summer/autumn (because most caribou were not present in past winters). Seasonal variation in female and male behaviour is expected due to differences in energetic and nutritional demands and environmental conditions (e.g., milk production for calves, autumn rut, insect harassment, and snow depth and hardness).



LEGEND

- LOCATION OF SCANNING OBSERVATIONS
- DIAVIK WILDLIFE STUDY AREA BOUNDARY
- DIAVIK FOOTPRINT
- EKATI FOOTPRINT
- WATERCOURSE
- WATERBODY

0 5 10

1:250,000 KILOMETRES

REFERENCE(S)

1. BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.
PROJECTED COORDINATE SYSTEM: NAD 1983 UTM ZONE 12N

CLIENT
RIO TINTO EXPLORATION INC.

PROJECT
DIAVIK DIAMOND MINES INC.

TITLE
LOCATIONS OF CARIBOU BEHAVIOUR SCANNING OBSERVATIONS, 2023

CONSULTANT

YYYY-MM-DD	2024-06-27
DESIGNED	GE
PREPARED	SP
REVIEWED	DC
APPROVED	DC

PROJECT NO.	CONTROL	REV.	FIGURE
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4.4 Incidents and Mortalities

Mineral development in the Bathurst caribou herd range created concerns about increased mortality, which includes vehicle collisions, aircraft collisions, and accidents associated with caribou in hazardous areas around mining activities (DDMI 1998b). Mitigation practices and policies have been implemented to avoid and reduce the potential for mortalities such as, review of collared caribou maps provided regularly by the GNWT-ECC to detect approaching caribou, wildlife have the right-of-way on all roads, communicating the presence of caribou via radio, and the caribou traffic advisory. The objective for this component is to determine the number of caribou deaths or injuries associated with the Mine. The following section summarizes the methods and results from incident reporting and road observations. The impact prediction in the EER (DDMI 1998b) is:

- Mine-related mortality is expected to be low (i.e., less than 1% change from baseline conditions [DDMI 1998b]).

4.4.1 Methods

Mine-related incidents and mortalities are reported to the Environment Department for documentation in a detailed incident investigation for immediate follow-up (Appendix D). All caribou mortalities are reported immediately to the GNWT-ECC, and the GNWT-ECC is consulted for follow-up mitigation and disposal procedures. The information is tabulated and provided for annual comparisons.

4.4.2 Results

In 2023, there were no known Mine-related caribou injuries or mortalities recorded, which has been the case for the past 19 years (Table 10). The only Mine-related caribou mortality reported to date occurred in 2004. In May 2023, employees reported approximately 10 caribou carcasses near an esker roughly 28 kms northeast from the Mine (Appendix D). The site was described as the remnants of a camping site with a fire pit. Employees speculated that the site was not new, but instead revealed by melting snow.

Table 10: Caribou Mortalities on East Island, Baseline to 2023

	Baseline[(a)]	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Natural Caribou Mortalities on East Island	8	7	1	1	0	2	0	0	1	0	0	0	1	1	1	1	0	0	1	0	0	1	0	1	10
Mine-related Mortalities	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(a) Includes data from 1995 to 1997.

4.5 Caribou Advisories

The objective of the caribou advisories is to make certain that workers are aware of the approximate numbers of caribou on and near East Island, which is related to the potential for interactions between caribou and mining activities. This raises general awareness so that employees are alert to the likelihood that mitigation could be triggered. The number of animals on East Island and in specific areas dictates the type of mitigation practices that will be undertaken (e.g., haul road closure, speed reduction).

4.5.1 Methods

Various methods were used to determine whether or not animals were present in the vicinity of East Island, which included incidental observations reported from pilots and workers, and using the satellite collar locations provided by GNWT-ECC. Caribou road surveys, and PKC and rock pile monitoring surveys were discontinued on a scheduled basis in 2014 (Golder 2020).

4.5.2 Results

In 2023, caribou numbers on the East Island reported by staff ranged from 1 to 250 animals (Appendix F). Caribou were most likely from the Beverly/Ahiak and Bathurst herds based on collared caribou data. Photos of caribou taken at the Mine are included in Appendix E. There were two instances where groups of 100 caribou or more were observed. The first instance occurred in March where a herd of about 250 caribou were observed feeding in tundra near the winter road approximately 20 km from the Mine. The second occurred in April with a herd of about 130 caribou located in tundra approximately 12 km from the Mine. In total there were 101 different incidental observations reported from 25 March to 30 October (Appendix F) including an observed kill site of 10 animals 28 kms from the Diavik mine site.

A total of 30 caribou were spotted on or in proximity to haul roads in 2023 during 15 separate sightings (1 to 4 individuals/observation). Twelve of these sightings resulted in traffic control measures being implemented based on proximity to road and presence of traffic in area, such as speed reductions, road closures, and radio wildlife advisories on local channels. One site-wide communication was distributed notifying workers of caribou presence on East Island. Caribou were also observed near the airport (i.e., runway, road) on 16 occasions, and 11 of these observations resulted in traffic control measures being implemented.

Three separate events involved an individual caribou on the Mine site that resulted in deterrence measures being implemented (Section 4.6.2).

4.6 Deterring Caribou from Hazardous Areas

When caribou are present on East Island their movements are monitored so that Mine personnel are aware of their presence and location. Of particular importance from a safety perspective (both human and animal), is caribou presence near hazardous areas (such as the airstrip and blast areas). When caribou are sighted adjacent to potentially hazardous areas, DDMI implements its Standard Operation Procedure for deterring caribou from these areas.

4.6.1 Methods

The method used to move caribou away from hazardous areas consists of the slow advancement of Environment Department staff (Environment) behind the caribou, encouraging the movement of the animals in a safe direction.

4.6.2 Results

In 2023, three instances of caribou deterrence occurred. On 12 June, one caribou was spotted in the tundra about 1 km southeast of Pond 7, and in the margin of the 1 km blast exclusion zone at the WRSA-SCRP. A blast was schedule to occur at WRSA-SCRP at this time. Environment used clapping and raised voices to deter the caribou out of the blast radius.

The second deterrent event occurred on 8 July, where Environment were notified of a single caribou grazing in the southwestern corner of the 1 km blast exclusion zone at the A21 dike south approach, which was delaying a scheduled blast. Upon arrival to the location, Environment used raised voices and their truck to direct the caribou northward on the haul road until it moved out of the bast zone, and then directed it off the haul road onto the tundra. Once on the tundra, Environment monitored the caribou until the blast was cleared. Environment could not hear the blast from their location and noted no visible response from the caribou.

The last instance occurred on 14 July and involved a single caribou at the west end of the Magazine Storage Area. Environment department was notified, and once on site, they used their vehicle to slowly direct the caribou away from the area and onto the tundra. This action did not deter the caribou, at which Environment used the truck horn to alert the animal, and successfully direct it out of the area. All personnel were advised via radio to reduce speeds and give the caribou the right of way.

A Wildlife Report was submitted for the caribou deterrence events on 8 July and 14 July (Appendix H).

4.7 Adaptive Management and Recommendations

Additional mitigation measures were included in the Conditionally Approved WMMP (DDMI 2022a). The WMMP describes how approaching caribou will be detected, identifies trigger levels to initiate action, and introduces tiered mitigations that may be undertaken to avoid and reduce sensory disturbance to caribou and avoid mortality or injury risks (DDMI 2022a). Tiered mitigation considers proximity of caribou to East Island and Mine areas, (e.g., within 5 km of East Island, reported on East Island) and corresponding mitigation and monitoring measures that will be implemented, including traffic control and reduced speed limits. One site-wide communication was distributed notifying workers of caribou presence on the East Island. A 1 km blast exclusion zone was implemented during blasting activities, consistent with Condition 5 provided by GNWT-ENR after their review and conditional approval of the 2022 WMMP (DDMI 2022a), along with already established blasting procedures, such as blasting taking place within a 12 m deep charge hole and blasts being directed upward rather than outward (DDMI 2021). In 2023, there were two instances where a caribou was identified within or near the 1 km blast exclusion zone at the WRSA-SCRP and the A21 open pit immediately prior or during blasting operations (Section 4.6.2). In both instances, blasting was delayed while Environment deterred caribou outside of the 1 km blast exclusion zones using their vehicle, raised voices, clapping, and sounding the truck horn. Blasting commenced only after Environment confirmed that the caribou were outside of the blast exclusion zone and remained in the area to monitor the caribou during the blasting event.

The last regularly scheduled above ground blast at the A21 open pit occurred in September 2023, after which blasting activity in 2023 was conducted fully underground except for infrequent surface blasts at the WRSA-SCRP. In 2024 and through the remainder of operations, production blasts will occur fully underground with infrequent surface blasts at the WRSA-SCRP.

In December 2023, DDMI met with the EMAB and GNWT-ECC, and agreed to continue monitoring behaviour of caribou visible from the Mine throughout the remainder of operations (GNWT-ECC 2024b). As a result, the 2024 WMMR and following WMMRs will include a caribou behaviour analysis using scan data collected from caribou behaviour scan surveys.

5.0 GRIZZLY BEAR

The barren-ground grizzly bear (*Ursus arctos*) ranges throughout most of the NWT. The western population of grizzly bear is currently designated as Special Concern under Schedule 1 of the *Species at Risk Act* (SARA; GOC 2023) and listed as Special Concern under the NWT General Status Rank (NWT SAR 2023).

Grizzly bears have low population densities, low reproductive rates, and are sensitive to human activity (DDMI 1998b; McLoughlin et al. 1999). While some grizzly bears may avoid mineral developments, others may be attracted to human activity through odours associated with development (Gau and Case 1999; Johnson et al. 2005). Effects to grizzly bears from mining may occur through direct habitat loss, habitat suitability reduction, and direct mortality. The focus of grizzly bear monitoring is to estimate direct habitat loss, monitor grizzly bear presence, and report Mine-related mortalities.

5.1 Habitat Loss

Grizzly bears use a wide variety of vegetation and habitat types. Studies of grizzly bears in the NWT have led to understanding their seasonal habitat preferences (McLoughlin et al. 2002; Johnson et al. 2005). Loss of habitat may result in negative effects on grizzly bears. The objective of this component of the WMMR is to determine if direct habitat loss for grizzly bear from the Mine footprint is within the prediction in the EER (DDMI 1998b):

- At full development, direct terrestrial habitat loss for grizzly bear from the project is predicted to be 8.67 km^2.

5.1.1 Methods

Methods used to determine grizzly bear habitat loss are similar to that described in Section 4.1; grizzly bear habitat is assumed to include all terrestrial habitats (i.e., all landscape types in Table 2) except for deep water, shallow water, and disturbed areas).

5.1.2 Results

Cumulative direct grizzly bear habitat loss resulting from the Mine up to 2023 was 8.41 km^2, which is below that predicted in the EER.

5.2 Incidents and Mortalities

Although there is some interaction between the Mine and grizzly bears, every effort is made to immediately report any animals that come into contact with the Mine. Bear awareness instruction is provided to employees and has contributed to the timely reporting of bears approaching site, which limits interactions. Despite mitigation, Mine activities may lead to grizzly bear mortalities, injuries, or relocations. The specific impact prediction in the EER (DDMI 1998b) is:

- Mortalities associated with mining activities are predicted to be 0.12 to 0.24 bears per year.

5.2.1 Methods

Incidental observations of grizzly bears are recorded and are usually made by Mine staff and reported to the Environment Department. Typically, each independent grizzly bear observation is recorded because it is usually not known if different observations are of the same bear. As the number of incidental observations may be partially related to the number of people on site, the occurrences of incidental observations of grizzly bears were compared to the camp population.

Mine-related incidents and mortalities are reported to the Environment Department for documentation in a detailed incident investigation for immediate follow-up. All grizzly bear mortalities are reported immediately to GNWT-ENR, and GNWT-ENR is consulted for follow-up mitigation and disposal procedures. If wildlife had to be deterred to reduce the risk of a wildlife-human incident, then all effort is made by the Environment staff to start with the least intrusive method available, and all deterrent actions are recorded.

5.2.2 Results

There were 87 reported instances of grizzly bears on East Island in 2023, and a total of 134 grizzly bears were observed (Table 11; Appendix H). Grizzly bears were observed on 77 days from 22 April to 06 October. While these observations are not collected systematically, and contain repeated observations, incidental observations provide an indication of the potential for wildlife incidents or problem wildlife.

In 2023 there was an average of 583 people at the Mine (Table 11). The number of incidental observations of grizzly bears does not appear to be related to the number of people on site (Spearman correlation rho = -0.14, P = 0.54); however, staff reporting incidental observations does foster an awareness of wildlife issues at the Mine.

Of the 134 grizzly bears seen (87 observation instances), 56 animals (26 observation instances) involved deterrent actions and 78 animals (61 observation instances) did not involve deterrent actions (Table 12; Appendix G). Deterrents used to encourage bears to move away from infrastructure included trucks, air horns, bear bangers, rubber bullets, gun cycles (noise), yelling, and clapping (Appendix G). The number of deterrents used does not appear to be related to the number of people on site (Spearman correlation rho = -0.13, P = 0.56).

No grizzly bear relocations or mortalities occurred in 2023. The calculated Mine-related mortality rate over the 24-year monitoring period is 0.13 bears per year, which is within the range predicted in the EER.

Table 11: Average Camp Population, Total Waste Rock Moved, and Number of Incidental Grizzly Bear Observations, 2002 to 2023

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Average Camp Population	1100	470	397	646	716	747	979	562	579	630	629	537	484	524	625	641	578	586	585	558	557	583
Grizzly Bear Reported instances on East Island	5	19	24	43	21	41	5	22	44	56	97	65	69	77	137	89	90	80	95	80	75	87

(a) Values have been rounded for presentation purposes.

Table 12: Grizzly Bear Deterrent Actions, Incidents, and Mine-related Mortalities, 2000 to 2023

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Days with Bear Visitations on East Island	15	14	5	15	24	34	20	34	5	22	44	41	77	47	59[a]	56[b]	94[c]	73[d]	70[e]	70[f]	79[g]	60[h]	57[i]	77[j]
Days Deterrent Actions were Utilized	10	8	2	6	20	23	8	20	3	18	40	31	65	40	39	27	50	51	36	45	50	41	33	26
Relocations	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	0
Mortalities	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0

(a) Over 59 separate days, 69 grizzly bear observations were recorded.
(b) Over 56 separate days, 77 grizzly bear observations were recorded.
(c) Over 94 separate days, 137 grizzly bear observations were recorded.
(d) Over 73 separate days, 89 grizzly bear observations were recorded.
(e) Over 70 separate days, 90 grizzly bear observations were recorded.
(f) Over 70 separate days, 125 grizzly bear observations were recorded.
(g) Over 79 separate days, 169 grizzly bear observations were recorded.
(h) Over 60 separate days, 89 grizzly bear observations were recorded.
(i) Over 57 separate days, 164 grizzly bear observations were recorded.
(j) Over 77 separate days, 134 grizzly bear observations were recorded.

5.2.3 Adaptive Management and Recommendations

Diavik participated in regional grizzly bear hair snagging monitoring in collaboration with BHP Billiton and De Beers Canada Inc. in 2012 and 2017. The results through 2017 indicated that the regional grizzly bear population is stable or increasing and not adversely affected by the Diavik and Ekati mines (ERM 2018). Program partners at the 2021 Diamond Mine Wildlife Monitoring Meetings (GNWT-ENR 2021) concluded that the grizzly bear hair snagging program will be discontinued. Diavik continues to use deterrent actions that keep grizzly bears and Mine personnel safe.

6.0 WOLVERINE

6.1 Introduction

Wolverine (*Gulo gulo*) are annual residents in the Lac de Gras region (DDMI 1998b). Wolverines are federally listed as Special Concern under Schedule 1 of the SARA (Government of Canada [GOC] 2024) and are considered Not at Risk in the NWT (NWT SAR 2024, Species at Risk Committee 2014).

Wolverine home ranges have been estimated at 126 km^2 for adult females and 404 km^2 for adult males (Mulders 2000). The feeding behaviour of wolverine may result in their attraction to camps and habituation if they receive a food reward, which has been demonstrated during baseline, construction, and operations in the Lac de Gras area. Wolverines in the tundra have been shown to depend primarily on scavenging barren-ground caribou for their diet (Mattisson et al. 2016) particularly in the winter (Magoun 1987) and may travel long distances in search of carrion (NWT SAR 2024).

6.2 Presence and Distribution

The initial objective of this component of the WMMR was to determine if mining activities are influencing the presence of wolverines in the study area. The revised monitoring objective determined in Handley (2010) is to:

- Provide estimates of wolverine abundance and distribution in the study area over time.

To meet this objective, DDMI participated in a joint wolverine DNA hair sampling research program in cooperation with Dominion Diamond Mines and the GNWT. Program partners present at the 2021 Diamond Mine Wildlife Monitoring Meetings (GNWT-ENR 2021) determined to discontinue hair sample monitoring for wolverine. The initial monitoring objective on wolverine presence noted previously will be resumed.

Wolverine presence around the Mine is monitored using the following systematic and anecdotal methods:

- snow track surveys
- incidental observations at site

6.3 Snow Track Surveys

6.3.1 Background

Surveys designed to detect organisms on the landscape are important for understanding factors influencing population dynamics and species ranges. Many surveys stratify the landscape into sampling locations (i.e., sites) and seek to determine whether a site is occupied by a given species or not. To estimate patterns of site occupancy, methods either assume perfect detection in the sampling methods or statistically control for imperfect detection in the analysis. Snow-track surveys are a popular non-invasive method for surveying mammalian communities with better detectability than alternative methods (Bayne et al. 2005). In snow-track surveys, the site occupancy of an animal is inferred by the presence of tracks in snow; however, the assumption of perfect detection is rarely met (Whittington et al. 2015). For the length of a transect to be occupied by an animal, the path of that animal must intersect with the transect at some point and leave behind distinguished, identifiable tracks. Detection depends on the observer(s) visually detecting the track and correctly identifying the source of the track. There is a non-zero probability that a transect be occupied by an animal and its tracks go undetected either through failure to see the track, or misidentification. To test hypotheses relating to the spatial distribution of animals on the landscape by way of contrasting occupied sites against unoccupied sites, the analysis must concurrently account for the probability that a site was occupied but the animal was not detected (MacKenzie et al. 2002).

6.3.2 Methods

Snow track surveys began in 2003 and have been completed with the assistance of a community member, when available. From 2003 to 2006, the study design and data collection used the experience of Inuit Qaujimajatuqangit to locate transects and record wolverine snow tracks. This included surveys of 23 transects of variable length and distance from the Mine within a 1,270 km^2 area. In 2008, DDMI revised the wolverine track survey to increase statistical power to detect changes in wolverine occurrence in the study area. Design changes included the placement of 40 survey transects of equal length (4 km long, total length = 160 km) located in areas of preferred wolverine habitat including heath tundra and heath boulder. The final locations of snow track survey transects were the result of a stratified random sampling process of potential locations in the study area, but some transects were relocated from Lac de Gras to areas of preferred wolverine habitat (based on Inuit Qaujimajatuqangit), including heath tundra and heath tundra boulder.

Each transect is driven by a snowmobile in March and/or April and all wolverine tracks and other sign (e.g., digs and dens) are recorded. In most years since 2015, each transect was surveyed twice so that detection probability could be estimated and incorporated into analyses of relative presence and distribution in the study area. However, two rounds of wolverine transect surveys were not completed in 2020 and 2021 due to delays and cancellations of the programs as a result of a staff shortage at the Mine from COVID-19 impacts.

The detection of snow tracks can be influenced by wind or snowfall. The effect of snowfall was estimated by determining the number of days from the survey date since the most recent snowfall. A wind threshold index was estimated from Mine meteorological data by determining the number of days prior to the survey date that the mean hourly wind speed eclipsed 7.7 metres per second (m/s) because a wind speed of 7.7 m/s is sufficient to move dry snow along the ground (Li and Pomeroy 1997). For each survey, a track density index (TDI) was calculated as the number of wolverine tracks per transect length per number of days since recent snowfall or threshold wind speed.

In addition, a single season occupancy model was applied to wolverine transect data using the package unmarked (Fisk and Chandler 2011) in R (R Core Team 2022). The standard occupancy model was based on zero-inflated binomial models as per MacKenzie et al. (2002) to estimate detection probabilities and the probability that a site (transect) was occupied by wolverine. The effect of wind and snowfall on track detectability was included in the model by measuring the minimum number of days since either most recent snowfall or when wind speeds surpassed the wind threshold index. The resultant values for number of days since threshold weather event were standardized and included as a covariate for estimating detection probability.

6.3.3 Results

The 2023 snow track surveys were conducted along 36 transects between 24 March and 12 April. Transects WT09, WT10, WT26, and WT30 were not surveyed in 2023 due to weather interference. Repeated surveys were conducted on 25 transects, while 11 transects were only sampled once also because of weather interference. In addition to wolverine, wolf (tracks and scat), and caribou (individuals) were observed during snow track surveys. On April 9, observers recorded one ptarmigan carcass off transect that was scavenged by unknown animals.

Wolverine tracks were identified at 24 of 36 transects (67% of transects surveyed; Appendix I). The number of wolverine tracks identified among transect surveys ranged from 0 to 7 individuals. One wolverine was spotted on transect WT21 on 4 April (Figure 10). Weather-adjusted measures of track density index (TDI) across all surveys yielded a mean TDI (± 2SE) of 0.23 ± 0.09 tracks/km/day since the last weather threshold (Table 13). Mean TDI was higher in 2023 than in 2022 (0.06 ± 0.04) and the number of transects with at least one observed wolverine track was greater in 2023 (24 transects) than in 2022 (12 transects). Surveys in 2023 recorded a total count of 70 wolverine tracks across all surveyed transects, which is the largest number of tracks recorded since surveys in 2016 observed 100 tracks (Table 13).

According to the single season occupancy model, the expected occupancy probability (ψ ± 2SE) was 0.57 ± 0.26, whereby ψ represents the probability of wolverine occupying a site and applies to all possible sites in the sample (Royle and Dorazio 2009). The number of days since a weather threshold event no significant influence on detecting wolverine tracks (β =5.63, Z =0.82, P = 0.41), where the probability of detection (p ± 2SE) was 0.90 ± 0.62 when the weather threshold covariate was held constant at zero. The estimate p describes the probability of detecting a species that is present.

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West Island

East Island

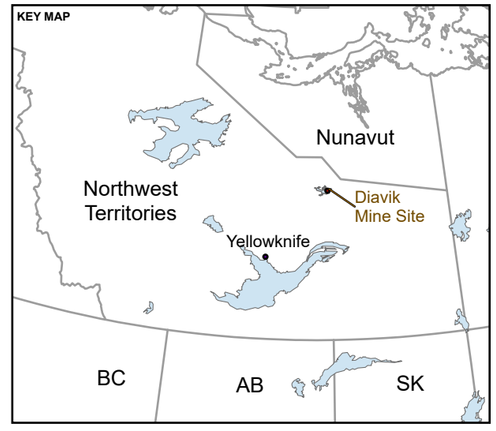
Lac du Sauvage

Lac de Gras

LEGEND

- WOLVERINE SIGHTING
- WOLVERINE TRACK
- TRANSECT
- DIAVIK FOOTPRINT
- EKATI FOOTPRINT
- WATERBODY

KEY MAP



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REFERENCE(S)

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PROJECTED COORDINATE SYSTEM: NAD 1983 UTM ZONE 12N

CLIENT
RIO TINTO EXPLORATION INC.

PROJECT
DIAVIK DIAMOND MINES INC.

TITLE
SNOW TRACK TRANSECTS AND WOLVERINE OCCURRENCE IN 2023

CONSULTANT

YYYY-MM-DD	2024-06-27
DESIGNED	GE
PREPARED	SP
REVIEWED	DC
APPROVED	DC

PROJECT NO.	CONTROL	REV.	FIGURE
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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Table 13: Wolverine Track Index and Mean Days Since Snow Fall, 2003 to 2023

Year	Survey Period	Number of Tracks	Distance of Transects Surveyed (km)	Mean Days Since Snowfall[a]	Mean Days Since Threshold Wind Speed[a]	Track Index (Tracks/km)	Mean Track Density Index (± 2SE)[b]
2003	10 – 12 Apr	13	148	2.2	2.1	0.09	0.05 ± 0.04
2004	16 – 24 Apr	22	148	4.0	4.6	0.15	0.06 ± 0.04
2004	2 – 8 Dec	10	148	3.9	2.5	0.07	0.05 ± 0.04
2005	30 – 31 Mar	7	148	7.5	3.9	0.05	0.03 ± 0.02
2005	7 – 12 Dec	18	148	2.4	3.5	0.12	0.11 ± 0.04
2006	30 Mar – 1 Apr	5	148	1.0	2.5	0.03	0.03 ± 0.01
2007[c]	-	-	-	-	-	-	-
2008[d]	30 Apr – 2 May	15	160	17.1	4.1	0.09	0.02 ± 0.01
2009	2 – 4 Apr	11	156	31.0	9.0	0.07	0.01 ± 0.01
2010[e]	-	-	-	-	-	-	-
2011	30 Mar – 3 Apr	23	156	0.9	6.7	0.15	0.17 ± 0.07
2012	28 Mar – 3 Apr	22	160	2.8	4.4	0.14	0.10 ± 0.06
2013	2 – 6 Apr	26	156	3.1	2.9	0.17	0.08 ± 0.04
2014	23 – 26 Mar	25	160	6.7	1.0	0.13	0.16 ± 0.08
2015	24 – 29 Mar	21	160	5.3	11.0	0.13	0.06 ± 0.05
	14 – 17 Apr	17	160	2.1	1.6	0.11	0.17 ± 0.13
2016	22 – 27 Mar	50	160	6.5	5.5	0.31	0.19 ± 0.13
	8 – 13 Apr	50	160	6.7	3.1	0.31	0.21 ± 0.10
2017	22 Mar – 4 Apr	10	160	4.1	2.5	0.06	0.02 ± 0.01
	9 – 19 Apr	42	160	2.4	2.7	0.26	0.26 ± 0.01
2018	23 Mar – 11 Apr	10	132	4.5	1.8	0.08	0.08 ± 0.06
	13 – 22 Apr	4	132	3.2	1.7	0.03	0.03 ± 0.03
2019	23 Mar – 2 Apr	14	160	1.6	1.2	0.09	0.14 ± 0.11
	13 – 21 Apr	32	160	2.1	2.3	0.20	0.21 ± 0.11
2020[f]	01 Apr – 18 Apr	21	160	2.0	3.6	0.13	0.14 ± 0.10
2021[f]	26 Mar – 4 Apr	24	156	4.6	4.8	0.15	0.04 ± 0.02
2022[f]	29 Mar – 14 Apr	16	148	5.9	4.3	0.11	0.06 ± 0.04
2023	24 Mar – 4 Apr	61	144	4.6	2.3	0.42	0.31 ± 0.14
	6 – 12 Apr	9	100	2.1	3.1	0.09	0.11 ± 0.08

(a) Presented as a summary of the data used to calculate track densities. Wind threshold speed = 7.7 metres per second.

(b) For each transect, a track density index (TDI) was calculated as the number of wolverine tracks per transect length per number of days since recent snowfall or threshold wind speed. TDI is reported as mean Track Density Index ± 2 times the standard error (Appendix I).

(c) Survey was not completed in 2007 because a Wildlife Research permit was not acquired in time.

(d) The new survey technique was introduced in 2008. Only data hereafter was included in the multi-season occupancy analysis.

(e) Survey was not completed in 2010 due to community assistant not being available to participate in survey.

(f) Second round of surveys were not completed due to site access restrictions or staffing issues resulting from the COVID-19 pandemic.

km = kilometres; tracks/km = tracks per kilometre; SE = standard error.

6.4 Incidents and Mortalities

Mortalities can occur if wolverines become habituated to mining activities resulting from efforts to locate food or shelter (DDMI 1998b). Diligent waste management and strictly enforced speed limits and immediate reporting of wildlife sightings on East Island have limited the mortality of wolverine during the operation phase of the Mine. To date, efforts have been focused on limiting Mine-related mortalities and associated changes to wolverine population parameters.

The prediction made in the EER was:

- Mine-related mortalities, if they occur, are not expected to alter wolverine population parameters in the Lac de Gras area.

6.4.1 Methods

Incidental observations of wolverine by Mine staff are reported to the Environment Department (Appendix J). Mine-related incidents and mortalities are also reported to the Environment Department for documentation in a detailed incident investigation and through incident reports submitted by Mine staff (Appendices C and D). All wolverine mortalities are reported immediately to GNWT-ECC, and GNWT-ECC is consulted for follow-up mitigation and disposal procedures. If wildlife had to be deterred to reduce the risk of a wildlife-human incident, then all effort is made by the Environment staff to start with the least intrusive method available and all deterrent actions are recorded. Correlation analysis was completed for wolverine observations, use of deterrence, and removals to ascertain if relationships exist between these variables and the number of individuals on site, total waste rock hauled, and total material moved.

6.4.2 Results

In 2023, there were 15 reported wolverine observations on East Island, and a total of 17 wolverines (Table 14; Appendix J). These sightings were reported over 15 days from 17 January to 23 December. These observations are collected incidentally and may contain repeated observations of the same animal. An observation reported on 6 July included three different wolverines; two of which were observed near the Processed Kimberlite Containment (PKC) Facility and the third wolverine was spotted at West Dam PKC (Appendix J). Incidental observations provide an indication of the potential for wildlife incidents or problem wildlife. Wolverine incidental observations increased in 2023 from 2022. There is no significant correlation between the number of incidental observations of wolverine and the number of people on site (Spearman correlation rho = 0.16, P = 0.46); however, staff reporting incidental observations does foster an awareness of wildlife issues at the Mine.

Of the 15 wolverine observations on East Island in 2023, none were mortality incidents, required relocation, or required deterrent action (Table 15). These actions continue to be uncommon at the Mine and are not expected to have a measurable influence on wolverine population survival and reproduction rates. The number of wolverine relocations does not appear to be related to the number of people on site (Spearman correlation rho = 0.03, P = 0.87). There is no significant correlation between the number of wolverine mortalities and the number of people on site (Spearman correlation rho = 0.31, P = 0.15). While there were no deterrent actions required in 2023, the number of deterrent actions was not related to the number of people on site (Spearman correlation rho = 0.31, P = 0.16).

Table 14: Average Camp Population and Number of Incidental Wolverine Observations, 2002 to 2023

Year [a]	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Average Camp Population	1100	470	397	646	716	747	979	562	579	630	629	537	484	524	625	641	578	586	585	558	557	583
Wolverine Observation instances on East Island	4	38	14	43	31	19	46	21	28	4	11	3	6	118	105	44	28	21	17	6	8	17[c]

(a) Monthly average camp population is not available for 2000 and 2001.

(b) A total of 17 wolverine observations were recorded in 2023 from 15 reports; one wolverine observation report included three separate wolverines.

Table 15: Wolverine Observations, Deterrents, Relocations and Mortalities, 2000 to 2023

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Days with Wolverine Visitations on East Island	25	36	4	38	14	43	31	19	46	21	28	4	11	3	6	83[b]	73[c]	36[d]	23[e]	21[f]	16[g]	6[h]	8[i]	15
Days Deterrent Actions were Utilized	9	10	0	1	1	5	2	1	17	1	0	0	1	0	0	4	6	4	0	7	4	0	1	0
Relocations	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	2	1	0	0	0
Mortalities	0	1	0	0	0	0	0	0	1	0	0	0	2[a]	0	0	0	1	0	0	0	0	0	0	0

(a) Two wolverine mortalities occurred in 2012 at an off-site fish compensation program undertaken by DDMI.

(b) Over 83 separate days, 118 independent wolverine observations were recorded. It is believed that the majority of these observations were for the same wolverine which was relocated on 23 March 2015.

(c) Over 73 separate days, 105 independent wolverine observations were recorded.

(d) Over 36 separate days, 44 independent wolverine observations were recorded.

(e) Over 23 separate days, 28 independent wolverine observations were recorded.

(f) Over 19 separate days, 21 independent wolverine observations were recorded.

(g) Over 16 separate days, 17 independent wolverine observations were recorded.

(h) Over six separate days, six independent wolverine observations were recorded.

(i) Over nine separate days, 10 independent wolverine observations were recorded.

(j) Over 15 separate days, 17 independent wolverine observations were recorded.

6.4.3 Adaptive Management and Recommendations

Future monitoring of wolverine snow tracks will continue to attempt two rounds of surveys to determine whether detection rates of snow tracks vary over longer periods of time. Results from the analysis of long-term snow track monitoring indicate consistent presence of wolverine since 2008. The Environment Department will continue to encourage staff to report wolverine and other wildlife sightings as these promote awareness at site and help to prevent and limit incidents. The Environment Department will continue to work with site departments as a reminder about the importance of waste segregation and securing waste bins to prevent wildlife access. Program partners at the 2021 Diamond Mine Wildlife Monitoring Meetings (GNWT-ENR 2021) determined that the wolverine hair snagging program would be discontinued.

7.0 RAPTORS

Raptors (birds of prey) present in the study area include peregrine falcon (*Falco peregrinus anatum/tundrius*), gyrfalcon (*Falco rusticolus*), rough-legged hawk (*Buteo lagopus*), snowy owl (*Bubo scandiacus*), and short-eared owl (*Asio flammeus*). The federal SARA considers the peregrine falcon as Special Concern; however, they currently have no status under NWT species at risk legislation but have a general species rank of sensitive (NWT SAR 2023). In 2017, COSEWIC re-assessed the status of the *anatum/tundrius* peregrine falcon as Not at Risk (NWT SAR 2023). Short-eared owls are designated as Special Concern under Schedule 1 of the SARA, assessed as threatened by COSEWIC, and currently have no status under NWT species at risk legislation (GOC 2023; NWT SAR 2023).

Habitat loss, sensory disturbance, and changes to prey populations may influence raptors nesting in the Lac de Gras area. Mining activities may cause raptors to avoid the area and surrounding habitats. Mine-related changes in habitat quality can influence the presence and distribution of raptors. Impact predictions related to raptors (DDMI 1998a) were:

- Disturbance from the Mine and the associated zone of influence is not predicted to result in measurable impacts to the distribution of raptors in the study area.
- The Mine is not predicted to cause a measurable change in raptor presence in the study area.

Analysis of Diavik and Ekati peregrine falcon and gyrfalcon nest data from 1998 to 2010 determined that sensory disturbance was not influencing nest occupancy and success (Coulton et al. 2013). Instead, the study concluded that the patterns of use and success were associated with the spatial distribution of nest site quality and the age of nest sites, respectively, which is consistent with findings from another long-term study (Wightman and Fuller 2005). The results confirmed the decisions at the 2010 Diamond Mine Wildlife Monitoring Workshop that annual collection of raptor nest occupancy and success in the study area should be discontinued, and data collection should be focused on mitigating effects to raptors nesting in open pits and on Mine infrastructure.

The monitoring objectives presented in Handley (2010) are to:

- Determine if pit walls or other infrastructure are utilized as nesting sites for raptors.
- Determine nest success in areas of development and document effectiveness of deterrent efforts used.
- Document and determine the cause of direct Mine-related mortalities of raptors.

Another objective related to monitoring the regional status of raptor populations includes:

- Support GNWT-ECC in regional monitoring of raptor nest occupancy and productivity to determine long-term population trends.

Note that the Handley (2010) objective for regional monitoring of raptor nest occupancy for the Canadian Peregrine Falcon Survey (CPFS) has been changed because the CPFS has been discontinued. Instead, monitoring is contributed to a regional database administered by GNWT-ECC.

7.1 Nest Site Occupancy

7.1.1 Methods

The Canadian Peregrine Falcon survey is no longer completed; however, DDMI will still support surveys of nest use and success in the study area for regional monitoring by GNWT-ECC and other researchers. Nest monitoring for inclusion in regional and national databases is scheduled for every five years and was last completed in 2020. The monitoring was completed by GNWT-ECC biologists and included surveys of known nest sites in early and late summer to determine nest use and the presence of hatchlings. The monitoring approach included a helicopter survey using fly-by techniques to minimize disturbance to nesting birds.

Falcons and other raptors have been known to nest on Mine infrastructure and within the vertical rock faces of open pits at both the Mine and the Ekati Mine. Pit wall/infrastructure inspections at the Mine are completed at least once per week during the nesting season. Pit walls and other infrastructure are inspected for nests and falcon nesting behaviour. If nests are found, DDMI attempts to determine the species occupying the nest along with the presence of eggs and/or chicks. Nests are only considered active if eggs or young are observed. Deterrent actions are only considered in consultation with GNWT-ECC if the nest is in an area hazardous to the birds but not if eggs or young are observed.

Pit wall/infrastructure inspections are completed at eight locations on the Mine: A21 Pit area (Lookout #1, #2, #3, and A21 South Ramp), A154 Pit area (Lookout #1 and #2), A418 Pit area (Lookout #1 and #2), South Tank Farm, Process Plant, Powerhouse #1 and Powerhouse #2, Site Services Building, Boiler House, and Backfill Plant. The survey is completed by stopping at a clear vantage point and thoroughly scanning the area for any potential nesting locations.

7.1.2 Results

Regional nest monitoring was not completed in 2023, with the next scheduled survey to occur in 2025.

A total of 20 Pit Wall/infrastructure inspections were completed from 06 May until 18 August to determine use by raptors (Appendix K). No deterrent actions were used to prevent raptor nesting in 2023.

One confirmed, active peregrine falcon nest was recorded in 2023 on the Process Plant, specifically on the northeast corner of the Process Plant. On 5 August, the nest was confirmed present and successful as two juveniles were confirmed to have fledged from the nest. On 11 August, two adults and two fledglings were observed on the roof of the Processing Plant. One fledgling was spotted perched on the Site Services Building under an overhang to stay out of the rain on 18 August. This fledgling is presumed to be one that fledged from the nest at the Process Plant.

Rough-legged hawk nesting activity was recorded at the A21 south ramp between 6 May to 5 August. Mating behaviour was noted on 6 May with two adults observed at the location. On 1 July, one adult and two juveniles were observed at the nest. On 5 August, all three juveniles were considered fledged as they were observed perched outside of the nest (Appendix J). No other observations of rough-legged hawk nesting were recorded at the site after this observation.

Potential rough-legged hawk nesting activity was identified at the A418 Pit on 18 May and 20 May where an adult was observed carrying nesting material towards the east site of the pit. No observations of nesting activity at A418 Pit were reported after this date and a nest was not confirmed.

Although not considered “raptors”, common ravens (*Corvus corax*) are functional raptors and were confirmed nesting in the South Tank Farm on the northern-most fuel tank closest to the Powerhouse.

Table 16: Active Nests Observed on Mine Infrastructure, Open Pits, and Equipment in 2023

Area	Species	Date	Observations
Process Plant	Peregrine falcon	16 May to 5 August	A potential nest was first observed on 16 May where two adults were observed, one was flying in the area and the other was perched on the northwest corner of the Process Plant roof (suspected nest site). On 10 June, an adult was observed perched in the same northeast corner of the building. On 5 August, the nest was confirmed present and successful as two juveniles were confirmed to have fledged from the nest. They were perched on the Process Plant Run of Mine (ROM) and one flew a short distance between the Field Lab and Carpenter Shop. Two adults and two fledglings were observed at the Processing Plant on 11 August. The last observation included one fledgling perched on an overhang to stay out of the rain on the Site Services Building on 18 August.
A21 South Ramp	Rough-legged hawk	6 May to 5 August	A potential rough-legged hawk nest was first observed on the A21 South Ramp on 6 May. The nest was confirmed on 12 May with two adults sitting on the nest. One to two adults were observed perched on the nest/ramp or flying in the area during all weekly surveys from 06 May to 5 August. Juveniles were observed in the nest on 1 July. The nest was deemed successful as three fledglings were observed perched outside of the nest on the southwest berm of the pit on 5 August.
South Tank Farm	Common raven	12 May to 24 June	An active common raven nest was recorded on 12 May and again on 10 June with three to four visible nestlings. The nest was deemed successful on 24 June when three juveniles had fledged from the nest and were observed perched on the ground and flying near the powerhouse.

7.2 Incidents and Mortalities

7.2.1 Methods

Mine-related incidents that occur are reported to Environment Department staff through incident reports submitted by Mine staff. Environment Department staff follow up on any incident and complete the necessary documentation, GNWT-ECC is consulted for mitigation and disposal procedures. This information is tabulated and provided for annual comparisons.

7.2.2 Results

Three raptor mortalities occurred in 2023 (Appendix D). On 27 July, a dead rough-legged hawk was discovered along the roadway on the A154 dike. A second dead rough-legged hawk was discovered on the A154 dike on 14 August. A third rough-legged hawk was found on the outside of the A21 dike on 16 October. The causes of all three mortalities are unknown.

Since 2002, twelve Mine-related or Mine-suspected raptor mortalities have occurred. The majority of these mortalities have occurred in proximity to Mine roads.

Two raptor observations were incidentally reported in non-raptor mortality reports (Appendix D). On 15 August a Northern pintail mortality was reported, and two peregrine falcons were observed perched near the DOC/South Camp parking lot. On 20 August a Northern pintail mortality was reported. A single peregrine falcon was observed flying over the carcass and portraying defensive behaviours when the Mine employee approached the carcass.

7.3 Adaptive Management and recommendations

Diavik will continue Pit Wall/infrastructure monitoring for nesting raptors and support regional nest monitoring. The next regional nest monitoring is scheduled to occur in 2025 and assumed to be completed by GNWT-ECC.

8.0 WASTE MANAGEMENT

Diavik is committed to taking the necessary steps to collect, store, transport, and dispose of all waste generated by the Mine, which is important to mitigate risks from attracting wildlife to the Mine. These procedures are being completed in a safe, efficient, and environmentally compliant manner. The Waste Management Plan is an integral part of DDMI's Environmental Management System and focuses on practical and positive management of waste.

The objectives of the Waste Management Plan include:

- creating a system for proper disposal of waste
- minimizing potentially adverse impacts on the physical and biological environment
- complying with Federal and NWT legislation

Mitigation practices include food waste incineration, categorical segregation of non-food waste for storage and subsequent removal from site, and on-site disposal and monitoring. In addition to these mitigation practices, DDMI has implemented recycling and renewable energy initiatives.

In addition to waste management, waste rock and the number of employees at site have been identified as indices of Mine activity (Golder 2017) and have been reported annually beginning in 2017. Waste rock deposition includes hauling of waste rock and is a source of fugitive dust, noise, and general activity at the Mine site. Mine activity includes all sources of sensory disturbance (e.g., dust, smells, lights, noise, and presence of people) potentially influencing the distribution of wildlife in areas adjacent to the Mine.

8.1 Waste Inspections

The DDMI Waste Management Plan outlines practices for waste disposal and mitigation actions. A Waste Management Plan was submitted in January 2015 to the Wek'èezhìı Land and Water Board (WLWB) as part of the water license renewal under water license number W2015L2-0001 (WLWB 2015). The most recent version of Waste Management Plan was submitted to the WLWB on 2 April, 2024 and was implemented in 2024 (DDMI 2024). The Asset Management Department at the Mine maintains the various waste collection transfer and disposal points, inventories of bulk wastes, waste management datasheets, and status of protective equipment and spill kits. This assists in evaluating the capacity of waste management facilities, planning for logistics associated with backhauling, and requirements for any modifications to the system.

Waste Management staff identify problem areas and work with contractors and Mine employees to resolve any issues. Numbering and inspecting waste collection bins prior to pick up is an effective method of facilitating communication between Waste Management and Environment Department staff and addressing issues within various departments. Efforts are made to identify improperly disposed waste in the large waste collection bins prior to collection; however, on occasion improperly disposed waste may end up in either the Landfill or the burn pit.

Incineration, segregation, and storage of waste takes place at the waste transfer area (WTA), which was established to provide proper handling and storage of waste on site. The facility is located on the south side of East Island. The WTA is a lined facility surrounded by a gated, three-metre-high chain link fence to control wind transportation of any litter and prevent most wildlife intrusion. Contained within the WTA are two incinerators for food waste, a burn pit for nontoxic/non-food contaminated burnable material, a hydrocarbon contaminated material containment area (landfarm), as well as sea cans, sheds, and storage areas for drums, crates, bins, and totes. Two water scrubbed incinerators were installed and operational in October 2012 and are located within the incinerator building. One of the incinerators was replaced in the fall of 2020 with a non-scrubbed incinerator that is large enough to handle all waste. The remaining incinerator is currently used as a back up to the new incinerator. The majority of waste is inventoried and stored at the WTA while awaiting backhaul on the Tibbitt-to-Contwoyto Winter Road.

On-site disposal of non-burnable wastes such as steel (ground support for underground mining), vent tubing, plastics, and glass currently occurs at the Landfill located within the WRSA-NCRP. Waste is pushed into a large depression in the Landfill. The location of the Landfill within the rock pile and traffic in the area will continue to discourage wildlife access to the Landfill, thereby limiting the availability of infrequently misdirected food and food packaging for animals.

8.1.1 Methods

In 2023, waste inspections at the WTA, Landfill, Underground waste bins, and A21 Area were completed twice per week throughout the year. These inspections are to confirm that all waste segregation, storage, and disposal procedures set out in the Waste Management Plan are being followed. Inspections undertaken by Environment Department staff consist of walking the area of the WTA, Landfill, A21 Area, and Underground waste bins, where safe to do so, and documenting the type and number of misdirected waste items, as well as wildlife species and sign that were present during the survey. Corrective actions at the WTA and Landfill area include notifying a WTA coordinator and transferring items to the appropriate disposal area. Corrective actions at the A21 Area and Underground waste bins include notifying the area supervisor to arrange for the transfer of items to the appropriate disposal area, notifying the area manager and safety superintendents for follow-up, and additional

worker education where required. All misdirected waste items found during inspections in the WTA and Landfill are sorted into the proper disposal area by Waste Management staff. For example, non-burnable material is removed from the incinerator waste stream and transferred to the designated area in the Landfill. Hazardous wastes are stored in the WTA until they can be shipped to licensed facilities off-site.

8.1.2 Results

Development of the Underground mines and the A21 open pit in 2023 yielded 357,291 tonnes of mined waste rock and 0 tonnes of overburden till and lake bottom sediment, while a total of 2,158,334 tonnes of ore were processed. The average daily population at the Mine in 2023 was 583 people, and weekly the population ranged from 494 to 631 people (Table 11; Appendix L). During 2023, the WTA and Landfill were surveyed on 122 and 120 occasions, respectively. The A21 Area and Underground were surveyed 123 and 123 times, respectively. All surveys occurred from 4 January to 31 December (Table 17; Appendix M). A total of 502 misdirected waste items were found during WTA inspections, 849 items during Landfill inspections, 100 items at the A21 Area, and 275 items at the waste segregation area of the Underground (Table 17). At the WTA, Landfill, A21, and Underground, 47.5%, 65.0%, 31.7%, and 52.0% of the inspections had at least one item of misdirected waste, respectively.

In the WTA, the most common misdirected waste item was gloves (172 items), followed by recyclable drink containers (102 items), and cigarette butts (44 items). In the Landfill, the most common misdirected item was food (100 items), followed by recyclable drink containers (99 items), and food packaging (90 items). In the A21 Area, the most common misdirected waste item was cigarette butts (22 items), followed by food packaging (19 items) and aerosol cans (17 items). In the Underground, the most common misdirected waste item was gloves (83 items), followed by other (55 items), and recyclable drink containers (42 items).

Considering the total amount of waste disposed (488,719 kg municipal and food waste incinerated, 651,000 kg of wood products incinerated, and 1,456 tonnes landfilled), the amount of misdirected waste is negligible. Improperly disposed items at the WTA and Landfill were reported to Waste Management staff for immediate rectification.

Wildlife were observed on 5.7% of inspections of the WTA, 5.8% of inspections of the Landfill, and 4.9% of inspections at the waste segregation area of the Underground. Wildlife were not observed during inspections of the A21 area (Table 18). Wildlife species observed during inspections were common raven and red fox (*Vulpes vulpes*). Wildlife sign was observed on 4.1%, 0.8%, 0.0%, and 0.8% of inspections at the WTA, Landfill, A21 Area, and Underground, respectively. The most common wildlife sign observed were red fox tracks.

Table 17: Misdirected Waste at the Waste Transfer Area, Landfill, A21 Area, and Underground, 2023

Misdirected Waste Type	Waste Transfer Area (n = 122 surveys)		Landfill (n = 120 surveys)		A21 Area (n = 123 surveys)		Underground (n = 123 Surveys)	
	Total Number Found in All Inspections	Percent of Inspections	Total Number Found in All Inspections	Percent of Inspections	Total Number Found in All Inspections	Percent of Inspections	Total Number Found in All Inspections	Percent of Inspections
Aerosol Cans	1	0.8	41	13.3	17	4.1	10	4.1
Batteries	0	0.0	54	12.5	16	5.7	10	0.8
Cigarette Butts	44	1.6	62	15.0	22	6.5	37	4.1
Cigarette Packaging	35	16.4	50	13.3	6	4.1	2	1.6
Drink Containers Recyclable	102	23.8	99	23.3	1	0.8	42	17.1
Food	9	5.7	100	15.0	7	4.1	2	0.8
Food Packaging	64	23.0	90	20.0	19	4.1	12	5.7
Gloves	172	23.0	82	15.0	4	3.3	83	22.8
Oil Contaminated Waste	1	0.8	69	11.7	4	3.3	11	3.3
Oil Products and Containers	3	1.6	66	16.7	1	0.8	11	3.3
Oily Rags	4	1.6	65	17.5	0	0.0	22	6.5
Other	80	16.4	71	14.2	3	2.4	55	18.7
Total	**502**	**47.5[a]**	**849**	**65.0[a]**	**100**	**31.7[a]**	**275**	**52.0[a]**

(a) This value indicates the total percentage of inspections with at least one misdirected waste item for that particular sample location.

Table 18: Wildlife and Wildlife Sign in the Waste Transfer Area, Landfill, A21 Area, and Underground, 2023

Species	Waste Transfer Area (n = 122 surveys)			Landfill (n = 120 surveys)			A21 Area (n = 123 surveys)			Underground (n = 123 Surveys)		
	Number of Inspections with Wildlife Observations	Total Number of Observations	Number of Inspections with Wildlife Sign Observed	Number of Inspections with Wildlife Observations	Total Number of Observations	Number of Inspections with Wildlife Sign Observed	Number of Inspections with Wildlife Observations	Total Number of Observations	Number of Inspections with Wildlife Sign Observed	Number of Inspections with Wildlife Observations	Total Number of Observations	Number of Inspections with Wildlife Sign Observed
Bear spp.	0	0	0	0	0	0	0	0	0	0	0	0
Red fox	7	11	5	6	9	0	0	0	0	2	2	1
Common raven	6	8	0	1	1	1	0	0	0	0	5	0
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0
Total	13	19	5	7	10	1	0	0	0	2	7	1

Since 2014 (when frequency of inspections during summer was reduced to once per week), wildlife observed during waste inspections has remained consistently low. The highest amount of wildlife was recorded at the WTA in 2014 where 38 red fox, 14 common raven, and 2 unknown gull species were recorded. No wildlife were recorded at the Landfill in 2019 and 2022, the Underground in 2020, and the A21 Area from 2019 to 2021, and 2023. Overall, 7% of inspections since 2014 have included wildlife observations (Figure 11).

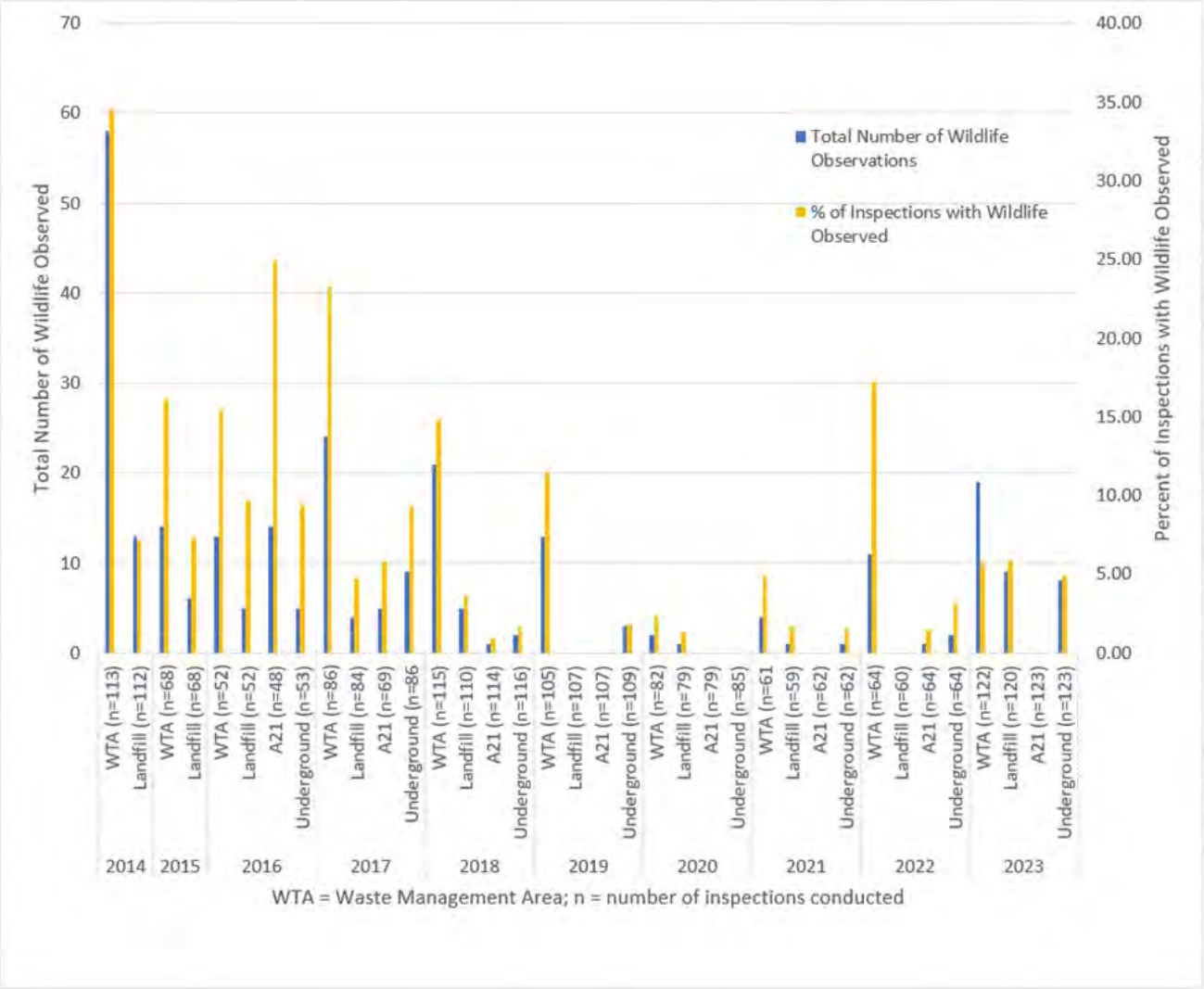

Figure 11: Total Number of Wildlife Observations per Waste Management Area, 2014 to 2023

Wildlife observed since 2014 during waste inspections are summarized in Table 19. The WTA has had an average of 18.8 wildlife observations recorded per year during inspections; 2014 having the highest amount of wildlife recorded with 58 observations recorded. The most frequently observed species at the WTA has been red fox. The Landfill has had an average of 4.4 observations recorded per year during inspections; 2014 having the highest amount of wildlife recorded with 13 observations. The most frequently observed species at the Landfill has been common raven. An average of 2.6 observations have been recorded per year since 2016 when inspections began at the A21 Area; 2016 having the highest amount of wildlife recorded with 14 observations. The most frequently observed species at the A21 Area has been fox species. An average of 3.9 observations have been recorded per year since 2016 when inspections began at the Underground; 2017 having the highest amount of wildlife recorded with nine observations. The most frequently observed species at the Underground has been fox species.

Table 19: Wildlife Reported During Waste Inspections, 2014 to 2023

Year	Location	Number of Surveys in Year	Red Fox	Fox spp.	Grey Wolf	Wolverine	Arctic Hare	Common Raven	Rough-Legged Hawk	Gull spp.	Unidentified	Total
2014	WTA	113	38	0	0	0	0	14	0	2	4	58
	Landfill	112	4	0	1	1	0	4	3	0	0	13
2015	WTA	68	0	6	0	0	0	5	0	0	3	14
	Landfill	68	0	3	0	0	0	3	0	0	0	6
2016	WTA	52	0	5	0	0	0	1	0	0	7	13
	Landfill	52	0	2	0	0	0	2	0	0	1	5
	A21	48	0	11	0	3	0	0	0	0	0	14
	Underground	53	0	3	0	2	0	0	0	0	0	5
2017	WTA	86	0	16	0	2	0	5	0	1	0	24
	Landfill	84	0	2	0	0	0	2	0	0	0	4
	A21	69	0	1	0	1	0	2	0	0	1	5
	Underground	86	0	7	0	0	0	2	0	0	0	9
2018	WTA	115	19	0	0	1	0	1	0	0	0	21
	Landfill	110	2	0	0	0	0	3	0	0	0	5
	A21	114	0	0	0	1	0	0	0	0	0	1
	Underground	116	0	0	0	0	0	2	0	0	0	2
2019	WTA	105	11	0	0	0	0	1	0	1	0	13
	Landfill	107	0	0	0	0	0	0	0	0	0	0
	A21	107	0	0	0	0	0	0	0	0	0	0
	Underground	109	2	0	0	0	1	0	0	0	0	3
2020	WTA	82	2	0	0	0	0	0	0	0	0	2
	Landfill	79	1	0	0	0	0	0	0	0	0	1
	A21	79	0	0	0	0	0	0	0	0	0	0
	Underground	85	0	0	0	0	0	0	0	0	0	0
2021	WTA	61	3	0	0	0	0	1	0	0	0	4
	Landfill	59	0	0	0	0	0	1	0	0	0	1
	A21	62	0	0	0	0	0	0	0	0	0	0
	Underground	62	0	0	0	0	0	1	0	0	0	1
2022	WTA	64	3	0	0	0	0	17	0	0	0	20
	Landfill	60	0	0	0	0	0	0	0	0	0	0
	A21	64	1	0	0	0	0	0	0	0	0	1
	Underground	64	0	0	0	0	0	3	0	0	0	3
2023	WTA	122	11	0	0	0	0	8	0	0	0	11
	Landfill	120	9	0	0	0	0	0	0	0	0	9
	A21	123	0	0	0	0	0	0	0	0	0	0
	Underground	123	2	0	0	0	1	5	0	0	0	2
Total			108	56	1	11	2	83	3	4	16	248

Note: waste inspections began in 2016 at the A21 and Underground waste bin areas.

Recycling Initiatives

During 2008, DDMI implemented an employee-driven recycling program for plastic bottles and aluminium cans generated on site. Aluminium and plastic containers were collected in 2023 but have yet to be shipped off the Mine site for recycling. This is planned occur in 2024. To date, the total proceeds since the inception of the employee-driven recycling program has generated $32,777.50.

Scrap copper was collected and sold in 2023 and proceeds were donated to local charities. Since 2019, over 405,500 pounds of copper has been salvaged and over $880,000 has been donated.

During 2023, approximately 115,925 litres of waste oil were collected to be used in the waste oil boiler that was commissioned in the second quarter of 2014. Since the boiler was commissioned, 2,099,319 litres of waste oil were burned to create heat at the Mine rather than being shipped off-site. In addition, a number of waste materials generated on-site are shipped off-site using winter road backhauls. Diavik is committed to maximizing recycling opportunities for wastes generated from Mine operations that cannot be disposed of on site. Items shipped for recycling include:

- used oil, oil filters, and grease
- used glycol
- aerosol cans
- batteries (lead-acid and dry cell)
- expired/waste fuel (e.g., Jet B)
- oil-based paint
- absorbents

Diavik will continue to increase recycling opportunities and reduce waste streams generated at the Mine.

8.2 Renewable Energy

The wind farm became operational on 28 September 2012 and it was predicted that it would reduce Mine diesel consumption by 10%, as well as greenhouse-gas emissions by 12,000 tonnes of carbon dioxide (CO_2) equivalents annually. During the twelfth year of operation, the wind farm generated 13,540,000 kilowatt hours (kWh) of power, which represents 7.3% of the total power generated in 2023 and an approximate diesel savings of 3.4 million litres (Figure 12). From 2005 through 2023, the annual diesel fuel consumption at the Mine has ranged from 55,573,000 litres to 82,236,753 litres. In 2023, the total fuel consumption was 69,534,672 litres.

In 2023, DDMI began construction of a 4,200-megawatt hour solar panel farm on the PKCF west cell. The solar farm will provide up to 25% of Diavik's electricity during closure work that will run until 2029. The solar farm will be operational in the first half of 2024 and will reduce diesel consumption by 5.3 million litres and 15,800 tons of CO_2 emissions over 5 years.

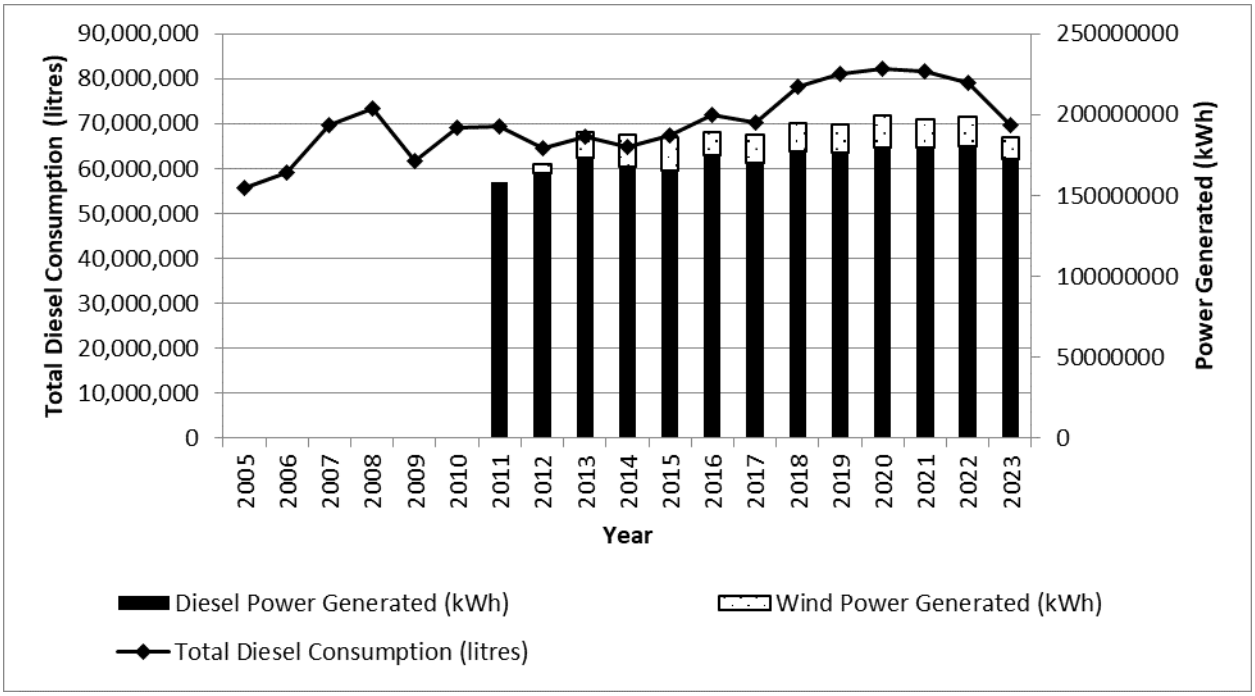

Figure 12: Annual Diavik Power Generation and Diesel Consumption

The peak amount of total power used can be as high as 60% wind power on a given day. The wind farm offset an estimated 9,267 tonnes of CO_2 emissions in 2023 (Table 20). The total CO_2 emissions (equivalents) offset since 2013 by the wind farm is 126,610 tonnes.

Table 20: Total Litres of CO_2 Offset by the Wind Farm (2013-2022)

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Wind Farm Energy Generated (KWh's)	15,823,543	19,747,333	20,842,138	14,297,803	17,192,885	18,001,285	17,326,685	19,292,380	17,011,845	17,600,000	13,540,000
CO_2 Offset (tonnes)	12,000	14,068	14,403	9,030	10,478	12,063	10,798	12,898	10,269	11,336	9,267
Total CO_2 Offset by Windfarm (tonnes)								**126,610**			

8.3 Adaptive Management and Recommendations

Procedures and mitigation strategies currently in place have been relatively successful at limiting wildlife interactions in the WTA and Landfill. While foxes, ravens and occasionally wolverine appear to be present at the WTA, Landfill, A21 Area, and Underground waste bins, these animals are natural scavengers and will continue to visit these areas throughout the Mine's life. Diavik will continue to monitor the WTA and Landfill at the frequency of twice per week in the winter and once per week in the summer, and the A21 Area and Underground once per week during the year. Diavik remains committed to carrying out employee education programs related to waste handling.

Signature Page

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APPENDIX A

Comments on the 2022 Wildlife Management and Monitoring Report

DIAVIK DIAMOND MINES (2012) INC.

TECHNICAL MEMORANDUM

DATE 1 December 2023

Reference No. 23586538-2516-TM-Rev0-3000

DIAVIK WORK PLAN No. 759 Rev. 0

DIAVIK PO No. 3105855547

TO Nicole Goodman and Mark Nelson
Diavik Diamond Mines (2012) Inc.

CC Kyla Gray (DDMI), Rainie Sharpe (WSP)

FROM Meghan Beale and Daniel Coulton

EMAIL:
meghan.beale@wsp.com;
daniel.coulton@wsp.com

RESPONSES TO COMMENTS ON 2022 WILDIFE MANAGEMENT AND MONITORING REPORT

On November 16, 2023, Diavik Diamond Mines (2012) Inc. (DDMI) received comments and recommendations by the Government of the Northwest Territories Department of Environment and Climate Change (GNWT-ECC), the Wek'èezhìı Renewable Resource Board (WRRB), the Environmental Advisory Management Board (EMAB) and Environment and Climate Change Canada (ECCC) on Diavik's 2022 Wildlife Management and Monitoring Report (WMMR). The comments, recommendations, and proponent responses are presented in Table 1. Additional supporting information is presented in Figures 1 to 3, below.

Table 1: Responses to Comments on the 2022 Wildlife Management and Monitoring Report (WMMR)

Comment Identifier	Topic	Reviewer Comment	Reviewer Recommendation	Proponent Response
WRRB-WMMR-1	WMMR	The WRRB has no comments on the WMMR. The Board looks forward to reviewing the full ZOI addendum when it is finalized.	N/A	No response is required.
EMAB-WMMR-1	Caribou Movement Behaviour (DDMI-WMP-78)	The movement behaviour analysis presented this year included data from 2010 to 2022. We were unclear on how much, if any, new geo-fenced collar data on caribou movement was added to the dataset from what was originally presented in the 2022 Addendum?	Can DDMI clarify how much new data was available for analysis since the 2022 Addendum was completed? How many times did geo-fenced collared caribou come within 3 km of the mine? How many collared caribou came within 30 km of the mine?	An additional 13 months of data were included in the 2022 WMMR, compared to the Addendum (i.e., *Exploratory Collared Caribou Movement Analysis*; WSP 2022b). The Addendum (WSP 2022b) included telemetry up to the end of November 2021 whereas DDMI included telemetry data up to 31 December 2022 in the 2022 WMMR. Section 4.2.1.1 of the 2022 WMMR summarizes sample sizes of data included in the 2022 WMMR. Telemetry data were collected from 115 collared caribou between November 2021 and December 2022. A total of 78 collared caribou came within 30 km of the mine between November 2021 and December 2022. Further, 21 caribou came within 3 km of the mine between November 2021 and December 2022.
EMAB-WMMR-2	Caribou Movement Behaviour (DDMI-WMP-79)	Throughout the movement analysis the reporting refers to the standard deviation of mean values for residency, speed or proportion of hard turns in relation to the standard deviation of the Reference Group of caribou. We are confused about what the interpretation of means and standard deviations among sample groups is meant to tell us. We assume these comparisons are made to infer whether the differences between a particular sample group and the reference group are different or not, but it is not clearly explained in the text of the WMMR what the reader is to infer from the interpretation of mean values and standard deviations presented in the WMMR. Standard deviation is not appropriate for making inferences about the difference between two samples, it is simply a measure of the variation within a given sample. Standard error, which is the accuracy of a sample group mean compared to the true population mean, would be the appropriate metric if inferences about differences between groups is the goal.	Can DDMI please clarify what is to be inferred if the mean for a particular sample group (e.g., speed of Bathurst caribou in Spring) is "*within two SD of the Reference Group for each herd and season*" (WSP Golder 2023; pg. 33).	Standard deviation was used to infer the natural range of variation (NRV) among caribou in each sample group. Standard error measures the precision of the estimated population mean whereas standard deviation measures the dispersion, or variability, of a population. Understanding whether sample groups fall within the natural range of variation of the Reference Group is important for understanding whether the sample group is moving differently than the Reference Group. It is important to note that these types of comparisons were based on observed values, whereas conclusions in the report were based on modeled values. Modeled values are subjected to more rigorous statistical testing.
EMAB-WMMR-3	Caribou Movement Behaviour (DDMI-WMP-80)	In 2022, between March 5th and August 10th, observations were collected on 38 caribou groups from 0 to 15 km from the Mine. Observations far from the Mine were not attempted in the winter due to human safety considerations and required changes in data collection methods (i.e., snowmobile versus helicopter). Overall, 702 caribou were observed in 2022, this is 277 more than the previous year. As in 2021, DDMI again indicated that there remains insufficient data (# caribou groups) to detect a 15% change in behaviour (55 unique groups of caribou in two distance groups are required). We continue to emphasize the importance of these data in understanding the influence of the Mine on caribou and for use in ground-truthing the behavioural data gathered from the geo-referenced collars on caribou.	We recommend continuing the collection of ground-based behaviour data to support the inferences about behaviour made from the geo-fenced collar data.	DDMI will meet with the GNWT-ECC and EMAB regarding the status of behaviour monitoring by DDMI.
EMAB-WMMR-4	Caribou Movement Behaviour (DDMI-WMP-81)	Most of the group scan surveys were completed within 0.5 km of the mine and >15 km from the mine.	Please discuss how sample sizes varied across all distance buffers.	Sample sizes are presented in Table 17 in the 2022 WMMR. Most group scan surveys (i.e., approximately 40%) were completed within 500 m of the mine. Another 32% of group scan surveys were completed further than 15 km from the mine. The remaining 28% of group scan surveys were completed between 500 m and 15 km from the mine.
GNWT-ECC-WMMR-1	Discontinuation of caribou behaviour monitoring beyond 2022	The Executive Summary, and Sections 1.1, 4.3 and 4.6 of the report state that Diavik will no longer monitor caribou behaviour beyond 2022. As per GNWT-ECC's letter to DDMI on Oct. 20, 2023, ECC considers the question of whether behavioural monitoring of barren-ground caribou should continue to be unresolved at this time, as ECC determined that WMMP Approval Condition #6 has not been satisfactorily addressed due to lack of evidence that DDMI had collaborated with EMAB before making the decision to discontinue behaviour monitoring.	Please refer to GNWT-ECC's letter dated Oct. 20, 2023, for the proposed path forward to resolve this issue.	See response to EMAB-WMMR-3.

Table 1: Responses to Comments on the 2022 Wildlife Management and Monitoring Report (WMMR)

Comment Identifier	Topic	Reviewer Comment	Reviewer Recommendation	Proponent Response
GNWT-ECC-WMMR-2	Inclusion of barren-ground caribou collars with different fix rate intervals in the analysis of changes to movement versus distance to mine.	The analysis of barren-ground caribou collar data to assess changes in movement behaviour as a function of distance to mine and other covariates included collar data from 2010 to 2022. Section 4.2.1.1 acknowledges that prior to 2015, collars had variable fix rates range from one per day, every 8 hours, and a few that had fix rates of 1 to 3 hours during specific seasons. After 2015, most collars had geofences that triggered 1-hours fixes when caribou were within 30 km of the Diavik-Ekati mine complex. Movement paths generated from the collar data were used to measure residency, speed, and proportion of hard turns within different buffer distances from the mine complex. One would expect that collars with lower fix rates (i.e., longer times between fixes) would result in less sinuous movement paths and thus lower proportions of hard turns than collars with 1-hr fix rates. Lower fix intervals might also underestimate speed because they do not capture the finer scale movements that occurred between 2 points measured 24 or 8 hours apart. The analyses did not evaluate the influence of fix interval on these different movement metrics, and although some figures provide average indices by year, there would be some years (around 2015) that include a mix of collars with different fix rates, and the figure panels are simply too small for a reader to be able to look for yearly differences that might be reflective of differences in collar fix rates. Furthermore patterns of movement metrics by distance interval are compared in the figures against a global mean across years for the reference category (30-111 km), which would include collars with different fix rates.	1) Evaluate the influence of different collar fix rates on the movement metrics used to evaluate changes in movement behaviour at different distances from the mine complex 2) Provide mean movement metrics for each of the different collar fix rates (e.g., the mean for collars that had 24-hr fix intervals, the mean for collars with 8-hour fix intervals, the mean for collars with 1-hr fix intervals) 3) Provide a discussion about whether the inclusion of collars with different fix rates would affect the capacity to detect patterns in changes in movement metrics as a function of distance to the mine complex	1) 3) A random effect for caribou ID was included to account for temporal and spatial autocorrelation, but also meant that every caribou included in analyses contributed the same amount of data regardless of frequency of locations or length of collar deployment (i.e., the sample size becomes the number of collars and not the number of fixes per collar, once a random effect per caribou ID is added). Therefore, including a collar with high location frequency and a long deployment period will not bias the results in a mixed model like it would in a model without a random effect for caribou ID. Inclusion of collars with different fix rates, so long as a random effect for caribou ID is included, does not affect the capacity to detect movement patterns at different distances from the mine. 2) Mean movement metrics for each collar fix rate are summarized in Figure 2 and Figure 3. Including a random effect for caribou ID accounts for differences in movement metrics due to fix rate.
GNWT-ECC-WMMR-3	Caribou movement analysis - Cleaning telemetry data	Section 4.2.1.1 states that collar locations with Classes "2" (i.e., 500 m radius accuracy), "3" (i.e., 250 m radius accuracy), "5" (i.e., 100 m radius accuracy), "GPS" (i.e., 100 m radius accuracy) and "A" (i.e., <100 m radius accuracy) were included in the analysis. In Poole et al. (2021), collar locations from Telonics Argos (satellite) were removed from the analysis as they provide location errors up to 350-1000 m. Also, fine-scale analyses of movement requires accurate GPS locations as these locations are linked to a landcover type. If a caribou location is off by several hundred meters, this can significantly impact the covariate of the model and provide erroneous results. Therefore, any collar locations with equal or more than a 100 m radius accuracy should be removed from the analysis.	For future analyses, please remove all collar locations with Classes "2", "3", "5", and "GPS" from the filtered telemetry dataset.	The telemetry dataset included Class “0”, “1”, “2”, and “3” fixes from Telonics Argos collars, as well as Class “G” fixes (i.e., “GPS” fixes) from both Telonics Argos and Telonics Iridium collars. Class “5” fixes were also present in the Bathurst data. Poole et al. (2021) removed fixes with over 350 – 1000 m accuracy (i.e., Class “0” and “1” fixes; Telonics 2015). Following Poole et al. (2021), DDMI also excluded Class “0” and “1” fixes from analyses; this removed approximately 9% of the telemetry data. The remaining 91% of the telemetry data were comprised of Class “2”, “3”, “5”, and “GPS” fixes. If DDMI were to remove all these fix types from future analyses, there would be no telemetry data left to analyze. DDMI assumes that GNWT-ECC’s recommendation to remove Class “2”, “3”, “5”, and “GPS” fixes from the dataset is to exclude fixes with lower spatial accuracy. For future analyses, DDMI can retain only Class “5” and “GPS” fixes and exclude Class “2” and “3” fixes. Removing Class “2” and “3” fixes would remove an additional 1% of the data and retain a total of 90% of the Beverly/Bathurst data for analyses.
GNWT-ECC-WMMR-4	Caribou movement analysis - Modelling	Landcover type was included in the GLMM as a categorical covariate where the predominant landcover class was assigned to each movement path (as stated in Section 4.2.1.3.). Although this is a good option for investigating the potential effects of landcover type on caribou movements/behaviour, this approach does filter out a lot of spatial information. It would be interesting to investigate how the proportions of landcover types where suitable caribou forage is expected affect caribou movements/behaviour. This may help explain if caribou with long path durations (i.e., caribou that spent a long time in each buffer zone) that moved at slower speeds and had higher proportion of hard turns are feeding in good habitat or there's an influence of a barrier to movements.	Consider evaluating the influence of the proportion of landcover type on the movement metrics used to evaluate changes in movement behaviour at different distances from the mine complex.	DDMI will investigate whether continuous landcover covariates (vs. categorical landcover covariates) are appropriate for evaluating changes in movement behaviour, and present the results of the investigation in the next comprehensive WMMR.

Table 1: Responses to Comments on the 2022 Wildlife Management and Monitoring Report (WMMR)

Comment Identifier	Topic	Reviewer Comment	Reviewer Recommendation	Proponent Response
GNWT-ECC-WMMR-5	Interpretation of movement patterns based on collar	Section 4.2.2, page 50 notes that "Caribou with long path durations (i.e., caribou that spent a long time in each buffer zone) moved at slower speeds and had higher proportion of hard turns. These results align with a priori expectations and support that increased time spent in an area is related to non-directional movement and slow speeds, which supports foraging and/or bedding behaviour." Is it not possible that longer path durations and higher proportions of hard turns can also indicate the influence of a barrier to movements? This is acknowledged in the second last paragraph on page 51. Page 51 also states that the slower speeds and higher proportions of hard turns within 30 km of the mine might reflect an attraction to habitats near the mine complex, but also acknowledges that the availability of different land cover classes as a function of distance to the mine was not assessed. This seems like a logical next step for these analyses to try and interpret the differences in movement behaviour within 30 km of the mine versus the reference category.	In future analyses of movement behaviour versus distance to the mine complex, evaluate whether there is an underlying gradient in the availability of preferred land cover classes across the different buffer zones.	DDMI evaluated whether there is an underlying gradient in the availability of preferred landcover classes across different buffer zones (i.e., distances from the mine) in the *2019 Wildlife Monitoring Report* (Golder 2019). Preferred caribou habitat included heath tundra, heath boulder, esker, tall shrub, sedge wetland and tussock-hummock land cover types (Golder 2019). Amount of preferred caribou habitat significantly increased with distance from mine ($p < 0.01$). There is also an underlying decreasing gradient of deep-water habitat that decreased with distance from mine and that caribou avoid ($p < 0.01$). Section 4.2.2 in Golder (2019) summarizes these results. Relative to the behaviour scan results reported, spatial patterns of feeding behaviour by non-nursery groups corresponds with an increasing preferred habitat gradient while nursery groups are disproportionately feeding more where preferred habitat is less available near the mines. Neither pattern supports an adverse response by caribou.
GNWT-ECC-WMMR-6	Integrating caribou group scan data into caribou movement analysis	Section 4.2.2. states that "caribou with long path durations (i.e., caribou that spent a long time in each buffer zone) moved at slower speeds and had higher proportion of hard turns. These results align with a priori expectations and support that increased time spent in an area is related to non-directional movement and slow speeds, which supports foraging and/or bedding behaviour." GNWT-ECC believes this hypothesis should be tested with the data from caribou group scans.	For each 3-km buffer segment where caribou had long path durations, slow speed, and high proportions of hard turn, investigate caribou behaviour from results of caribou group scans (within the same buffer, season, and time period). Are the caribou group scans demonstrating that caribou are foraging and/or bedding in areas where the caribou movement analysis found that caribou had long path durations, slow speed, and high proportions of hard turn?	This assumption/hypothesis was tested in the 2021 WMMR Addendum (i.e., *Exploratory Collared Caribou Movement Analysis*; WSP 2022b). WSP (2022b) determined that individuals with slower speeds (i.e., longer paths) and higher proportions of hard turns allocated higher proportions of their activity budgets to feeding. Table 9 in WSP (2022b) summarizes these correlations.
GNWT-ECC-WMMR-7	Caribou group scans - response to stressors	Section 4.3.1.1, bottom of page 52, describes how caribou response to stressors was recorded during caribou group scans but there is no analysis or summary of that data provided in this report.	Please report on the response of caribou to stressors that occurred during the 2022 caribou group scans, and summarize the results according the description of variables noted for recording response to stressors on page 52.	A total of 68 stressor events were recorded in 2022. Almost half of stressor events were caused by light vehicles (49%), followed by heavy vehicles (i.e., haul trucks and water trucks [12%]), and snowmobiles (12%). Humans, airplanes, helicopters, other equipment (e.g., augers), and bear bangers comprised between 9 and 1% of stressor events. Caribou did not respond to 67% of light vehicle stressor events ($n = 33$) and 50% of heavy vehicle events ($n = 8$). Caribou also did not respond to the one instance of bear bangers being deployed. Caribou responded by looking in the direction of the stressor in 100% of events caused by equipment ($n = 2$), 83% of events related to humans (e.g., coughing, closing a door; $n = 6$), 63% of events related to snowmobiles ($n = 8$), 40% of events related to airplanes ($n = 5$), 21% of events related to light vehicles, 20% of events related to helicopters ($n = 5$), and 13% of events related to heavy vehicles. Caribou responded to heavy equipment, helicopters, and airplanes by trotting away 13%, 20%, and 20% of the time, respectively. Finally, in 60% and 40% of helicopter and airplane stressor events, respectively, caribou exhibited the strongest response. Caribou ran away during 25% of snowmobile encounters and during 25% of heavy vehicle encounters. These results are summarized in Figure 1 of this technical memorandum.
GNWT-ECC-WMMR-8	Caribou group scans - relationship to habitat	Page 70 states that habitat at the site of the group scan could not be observed winter and autumn, and thus the potential confounding effect of habitat on proportions of different behaviours observed could not be assessed. Would it not be possible to use the same land cover data used in the analysis of collared caribou movements to infer the predominant land cover class at each of the group scan locations?	Consider using land cover data to assign predominant habitat types to group scan observation locations to evaluate the potential confounding effect of habitat.	DDMI will consider using landcover data to assign predominant habitat types to group scan observation locations for future comprehensive analyses.

Table 1: Responses to Comments on the 2022 Wildlife Management and Monitoring Report (WMMR)

Comment Identifier	Topic	Reviewer Comment	Reviewer Recommendation	Proponent Response
GNWT-ECC-WMMR-9	Wolverine monitoring - predicted occupancy versus observed occupancy	It would be interesting to compare the annual observed occupancy rates in addition to the predicted occupancy rates on Figure 27.	For future analyses, please include the annual observed occupancy on the figure of predicted occupancy.	Although it would be interesting to compare annual observed occupancy, predicted occupancy considers detectability and is the metric that should be carried forward from effects monitoring to inform decision-making and adaptive management.
GNWT-ECC-WMMR-10	Wildlife Incident Reports	GNWT-ECC appreciates the consistent and thorough approach to documenting wildlife incidents and incidental observations as evidenced by the reports provided in Appendix H, J, K and L.	Continue implementing these aspects of the WMMP.	DDMI will continue implementing these aspects of the WMMP in future reports.
ECCC-WMMR-1		ECCC has reviewed this file in accordance with our mandate and has no comments at this time.	N/A	No response is required.

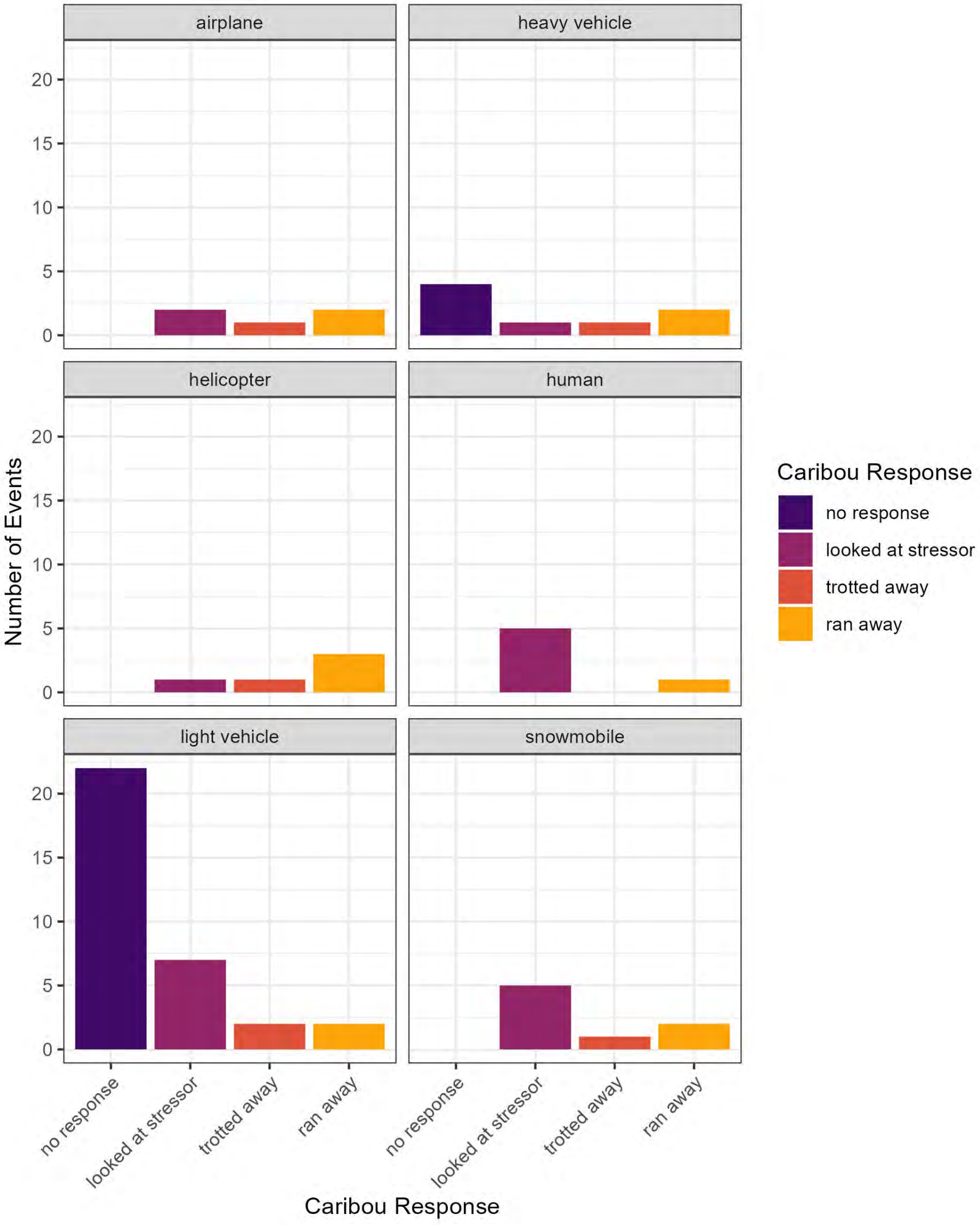

Figure 1: Number of events resulting in four potential caribou responses (i.e., no response, looked at stressor, trotted away, or ran away) for six common stressors (i.e., airplane, heavy vehicle, helicopter, human, light vehicle, and snowmobile), in 2022.

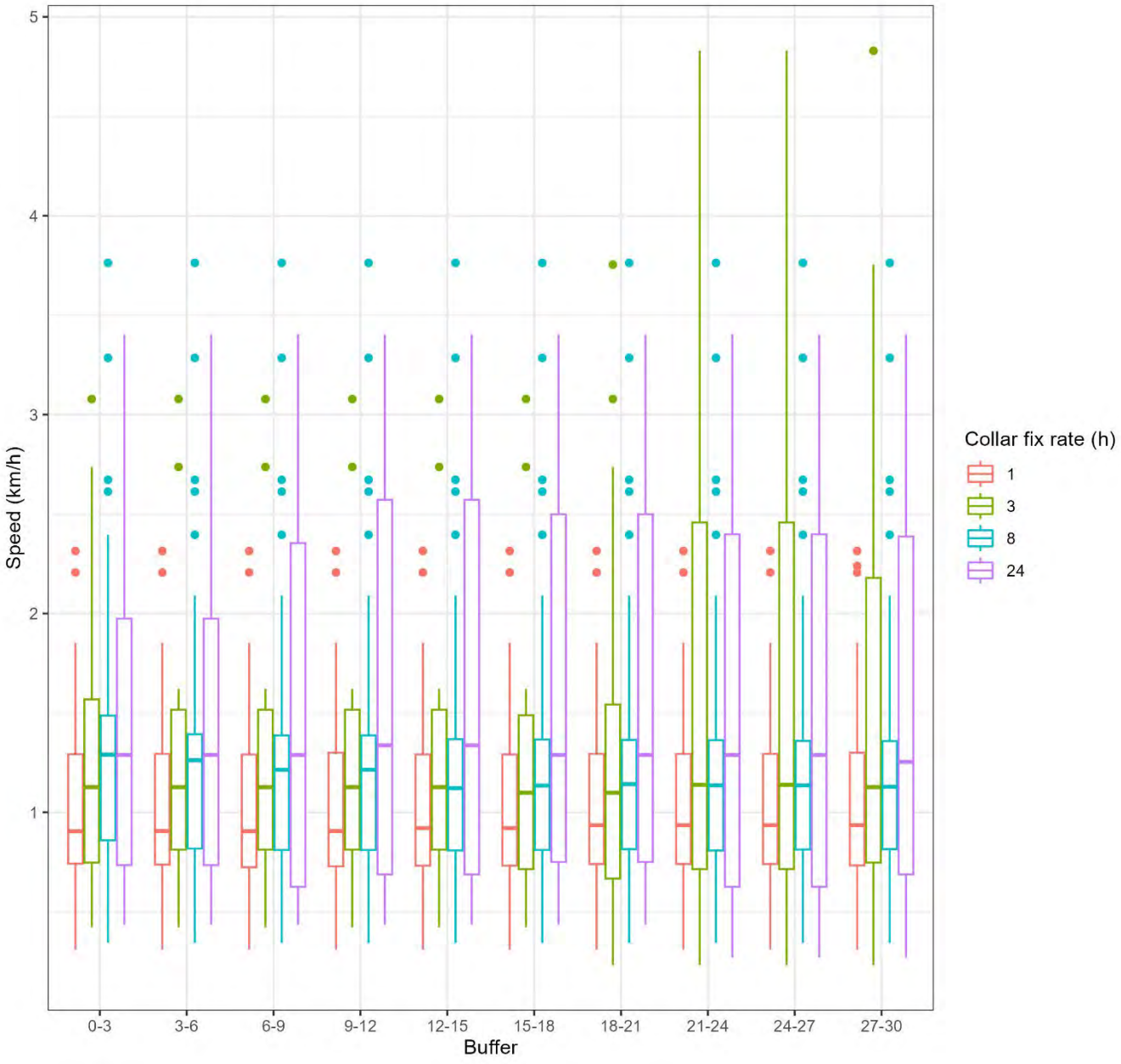

Figure 2: Mean speed at different buffer distances for collars with 1-, 3-, 8-, and 24-hour fix rates.

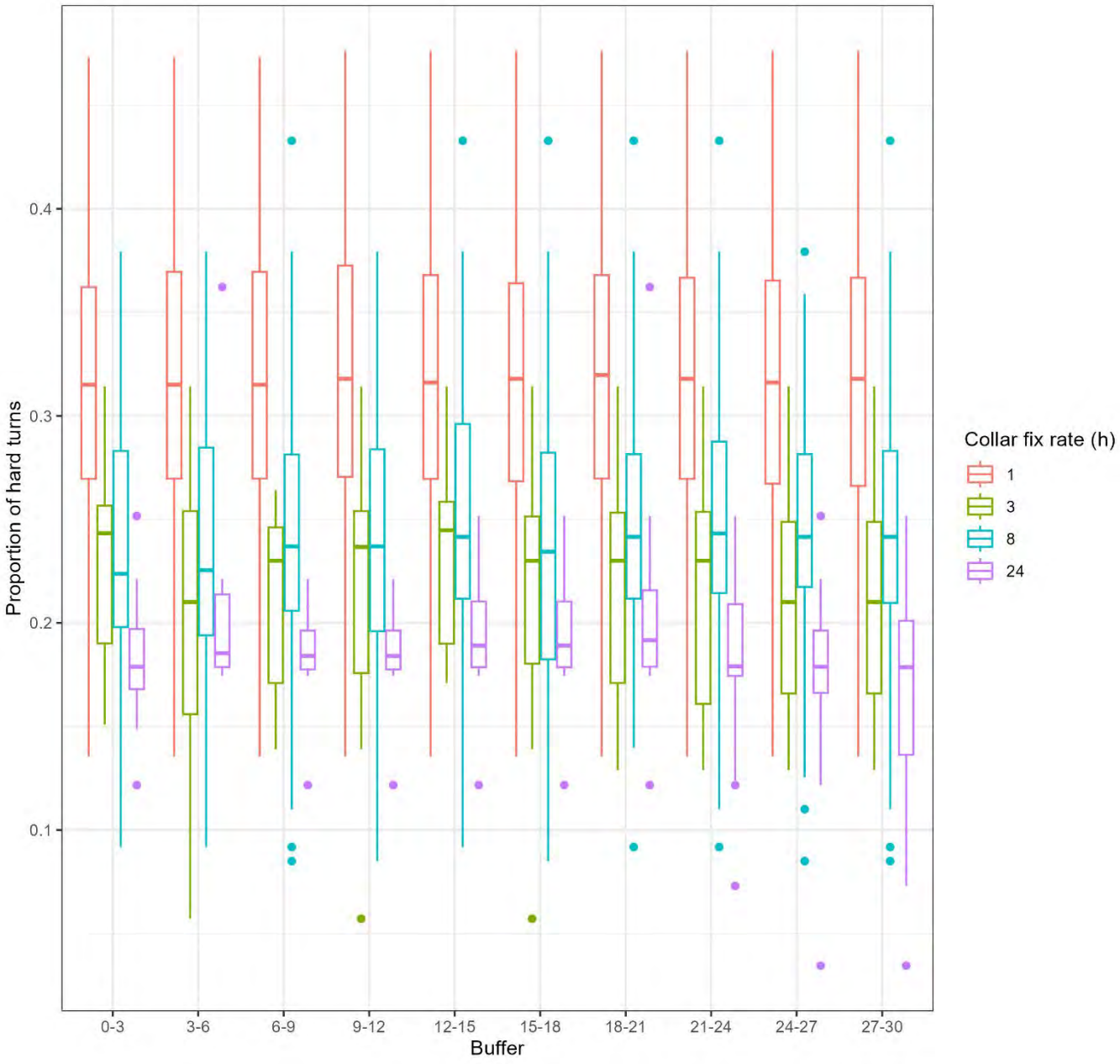

Figure 3: Mean proportion of hard turns at different buffer distances for collars with 1-, 3-, 8-, and 24-hour fix rates

Closure

We trust the above meets your present requirements. If you have any questions or requirements, please contact the undersigned.

WSP Canada Inc.

ORIGINAL SIGNED

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Disclaimer

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WSP. 2022b. Exploratory Collared Caribou Movement Analysis. Technical memorandum submitted to Diavik Diamond Mines (2012) Inc. 33 pp.

APPENDIX B

Caribou Behavioural Observations Summary 2023

Date	Time	Distance to Mine Component (km)	UTM Easting	UTM Northing	Group Size	Sample Composition	Included in Caribou Behaviour Analyses[(a)]
2023-03-25	12:28	12.92	524880	7164776	**53**	Males/Females/Calves	No
2023-03-25	13:53	6.76	528410	7159725	**30**	NA	No
2023-03-25	14:30	6.41	526074	7155506	**13**	Females/Calves	Yes
2023-03-31	8:30	11.18	543800	7143029	**1000**	Males/Females/Calves	No
2023-03-31	10:05	25.30	553710	7132745	**100**	Males/Females	No
2023-04-01	10:11	0.91	534485	7155094	**6**	Males/Females/Calves	Yes
2023-04-03	5:05	0.00	534400	7149180	**23**	Males/Females/Calves	No
2023-04-04	10:20	12.77	545092	7142099	**23**	NA	No
2023-04-05	11:20	13.99	523677	7165192	**20**	Females/Males/Calves	No
2023-04-07	9:10	11.31	546092	7160636	**100**	Females/Males/Calves	Yes
2023-04-07	12:15	19.92	552160	7166789	**300**	Females/Males/Calves	Yes
2023-04-07	17:21	11.72	538710	7165240	**130**	NA	Yes
2023-04-08	9:15	10.49	543162	7143300	**15**	Females/Calves	No
2023-04-09	8:20	1.44	538937	7153066	**50**	Females/Males/Calves	Yes
2023-04-09	13:26	2.82	540310	7152666	**18**	Females/Calves	Yes
2023-05-11	8:17	0.04	534072	7153404	**1**	Females	No
2023-05-16	11:15	0.02	534811	7153178	**1**	Males	Yes
2023-05-17	15:58	0.02	534659	7153303	**1**	Males	Yes
2023-05-21	16:37	0.02	534659	7153303	**2**	Males / Females	No
2023-05-26	9:22	0.04	533903	7154088	**2**	Males / Females	Yes
2023-05-31	16:24	0.00	535198	7153185	**2**	Males / Females	No
2023-06-03	15:14	0.00	535698	7152820	**1**	Females	Yes
2023-06-08	15:05	0.07	534870	7153212	**2**	Males / Females	Yes
2023-06-16	7:45	0.00	535038	7152155	**3**	Males / Females	Yes
2023-06-21	14:24	0.07	533976	7151635	**4**	Males / Females	Yes
2023-06-27	15:21	0.05	532738	7151204	**2**	Males / Females	Yes
2023-06-28	7:40	0.00	532460	7151350	**2**	Males	Yes
2023-06-29	10:41	0.00	534215	7153166	**2**	Males	No
2023-07-03	15:14	0.00	535698	7152820	**1**	Females	Yes
2023-07-04	10:38	0.00	532615	7152530	**2**	Males / Females	Yes
2023-07-06	8:08	0.00	535832	7152196	**2**	NA	Yes
2023-07-07	16:39	0.06	534501	7151850	**1**	NA	Yes
2023-07-08	15:26	0.01	533161	7150177	**1**	Males	Yes
2023-07-10	11:03	0.00	533950	7153125	**1**	Males	Yes
2023-07-11	11:11	0.04	532727	7151233	**1**	Males	Yes
2023-07-14	14:45	0.02	532070	7151569	**1**	Males	Yes
2023-07-15	16:30	0.00	532692	7150479	**2**	Males	No
2023-07-17	9:11	0.00	534297	7151085	**3**	Males / Females	Yes

Date	Time	Distance to Mine Component (km)	UTM Easting	UTM Northing	Group Size	Sample Composition	Included in Caribou Behaviour Analyses[(a)]
2023-07-21	7:41	0.00	534112	7153187	**1**	Males	No
2023-07-22	9:18	0.00	534664	7152255	**1**	NA	No
2023-07-25	13:30	0.00	534265	7151080	**2**	Males	Yes
2023-07-27	17:20	0.00	533455	7150637	**1**	Males	Yes
2023-07-27	10:42	0.00	535586	7152444	**1**	Males	No
2023-07-28	9:43	0.00	535899	7152156	**1**	Males	No
2023-07-29	11:10	0.00	534346	7150992	**1**	Males	Yes
2023-08-03	10:00	0.00	533642	7150922	**1**	Males	Yes
2023-10-30	11:39	0.00	533388	7149277	**1**	Males	Yes

(a) Of the 44 surveys conducted, 14 could not be included in the behavioural analyses because they did not include a minimum of four observations, or the recorded data was incomplete.

APPENDIX C

General Wildlife Reports 2023

Wildlife Report - 2021

Caribou - 2023-07-11 - ROM Hill

Complete

Score	**100%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Caribou - 2023-07-11 - ROM Hill
Document No.	WildlifeReport000271
	11.07.2023

Audit	100%
Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Caribou

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Single adult male caribou

Photo (If Possible)

Photo 1

Enter Initial Time of Wildlife Sighting	11.07.2023 06:50 MDT

Department/Individual Who Reported Wildlife:

Site Services

Environment at Call-out Location	11.07.2023 07:00 MDT

Chronological Events

6:55 - Site Services makes announcement on channel 5 stating a single caribou was walking south along the south haul road towards the truck shop area

7:00 - Environment (ENV) arrives on scene and observes the caribou walking up the ROM hill towards the Process Plant ROM and North Haul Road. ENV followed at a distance to monitor the movement of the animal, alerting personnel working in the area to the presence of the caribou

7:10 - Caribou continued up ROM Hill and moved north towards the PKC muster area. Caribou began heading up a pipeline channel towards the PKC area.

7:20 - Caribou reached the top of the hill and walked into the PKC facility, eventually climbing a small berm onto the South Dam and moved out of sight heading west. Personnel in area were notified and asked to move in the area with caution. ENV leaves scene.

Movement Map (Import NotePlus Site Map)

Photo 2

End of Environment Call-out	11.07.2023 07:30 MDT

Final Location of Wildlife

PKC South Dam, heading west.

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Justin Macek
12.07.2023 10:11 MDT

Media summary

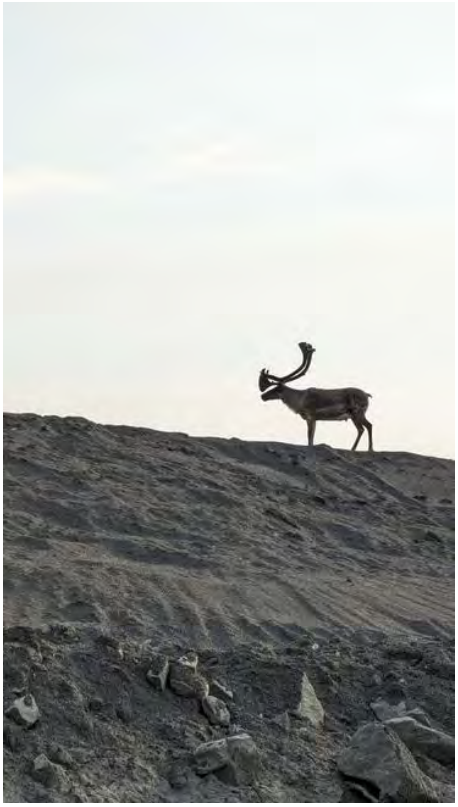


Photo 1

Photo 2

Wildlife Report - 2021

Fox/Wolverine - 2023-07-01 - Com Shack

Complete

Score	**100%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Fox/Wolverine - 2023-07-01 - Com Shack
Document No.	WildlifeReport000268
	07.07.2023

Audit	100%
Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Wolverine

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

1 Wolverine, walking towards com shack,
1 Fox interacting with Wolverine

Photo (If Possible)

Photo 1

Enter Initial Time of Wildlife Sighting	01.07.2023 12:25 MDT

Department/Individual Who Reported Wildlife:

Unknown

Environment at Call-out Location	01.07.2023 12:05 MDT

Chronological Events

1145- Environment (ENV) received call about a Wolverine outside by ice rink area.
1200- ENV arrived at location but could not locate Wolverine
1225- ENV heard barking by Com Shack area. Spotted a Fox then saw it was barking/snapping at the Wolverine.
1245-ENV monitored them interacting till the fox pushed it to South winter road approach/ Pond 11 and both Fox and ENV left scene.

Movement Map (Import NotePlus Site Map)

Photo 2

End of Environment Call-out	01.07.2023 00:45 MDT

Final Location of Wildlife

South winter road/ Pond 11

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Tina Burke
07.07.2023 18:02 MDT

Media summary

Photo 1

Photo 2

Wildlife Report - 2021

Grizzly - 2023- 06-03- Behind Airport.

Complete

Score	100%	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023- 06-03- Behind Airport.
Document No.	WildlifeReport000255
	03.06.2023

Audit	100%
Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Grizzly Bear

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Male Grizzly 7yrs old? 340lbs , light brown . Grazing in field behind the airport comms building.

Photo 1

Photo (If Possible)

Photo 2

Enter Initial Time of Wildlife Sighting	03.06.2023 10:05 PDT

Department/Individual Who Reported Wildlife:

RTX

Environment at Call-out Location	03.06.2023 10:13 PDT

Chronological Events

11:05 Bear call
11:13 Eyes on Grizzly, grazing
11:17AM crossed pond and continued grazing
11:21AM grizzly grazing and heading NW away from airport.

Movement Map (Import NotePlus Site Map)

Photo 3

End of Environment Call-out	03.06.2023 10:30 PDT

Final Location of Wildlife

north west of airport communication building.

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

03.06.2023 15:19 PDT

Media summary

Photo 1

Photo 2

Photo 3

Wildlife Report - 2021

Grizzly-2023-06-03 - NI - 154 Dyke (in field)

Complete

Score	**100%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly-2023-06-03 - NI - 154 Dyke (in field)
Document No.	WildlifeReport000254
	03.06.2023

Audit	100%
Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Grizzly Bear

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

1 Sow - 260lbs , light brown , looks healthy, age unknown.
3- cubs , 2 years old

Photo (If Possible)

Photo 1

Enter Initial Time of Wildlife Sighting	03.06.2023 09:00 PDT

Department/Individual Who Reported Wildlife:

surface mining

Environment at Call-out Location	03.06.2023 09:20 PDT

Chronological Events

10:00AM Bear call to environment from Surface mining, a sow and 3 cubs spotted at North Inlet headed east.
10:20AM got eyes on Grizzly sow and her 3 cubs.
10:30AM grazing in field beside North inlet and water tree.
10:58AM still monitoring and blocking way to main road way, bears crossed road into the A154 dyke In field area, where there has been no activity for many years.
11:07AM made an all call on where bears are located and she was feeding her cubs, decided it was a safe location to leave.

Photo 2

Movement Map (Import NotePlus Site Map)

Photo 3

End of Environment Call-out 03.06.2023 10:10 PDT

Final Location of Wildlife

A154 in field area.

Closure & Sign-off 100%

Wildlife Report Complete On

Signature

03.06.2023 13:53 PDT

Media summary

Photo 1

Photo 2

Photo 3

Wildlife Report - 2021

Grizzly - 2023-08-15 - Shallow Bay

Complete

Score	1 / 1 (100%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-08-15 - Shallow Bay
Document No.	WildlifeReport000285
	17.08.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Grizzly Bear

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

1, blonde with dark underside, medium/large

Photo (If Possible)

Enter Initial Time of Wildlife Sighting	15.08.2023 00:00 MDT

Department/Individual Who Reported Wildlife:

Backfill

Environment at Call-out Location	15.08.2023 21:30 MDT

Chronological Events

9:35 ENV received call from security that an adult bear was in the backfill loadout area.

9:40 ENV confirmed with backfill and site services that bear was heading towards the truck shop.

10:10 ENV confirmed location of the bear in the shallow bays on the east end.

10:15 ENV watched bear for 5 minutes to ensure it was heading east away from camp.

10:20 Call ended.

Movement Map (Import NotePlus Site Map)

Photo 1

End of Environment Call-out	15.08.2023 22:20 MDT

Final Location of Wildlife

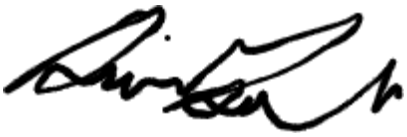
East end of shallow bays.

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature



Dani Bowler
17.08.2023 10:35 MDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly - 2023-09-07 - Pond 5 to PKC

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-09-07 - Pond 5 to PKC
Document No.	WildlifeReport000291
	11.09.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Sighting

General Wildlife Sighting

Animal Type	Grizzly Bear

Description of Individual / Activity (eg. number of individuals, colour, age, size, etc.)

Single grizzly, likely a yearling. Frequently spotted around site.

Photo (If Possible)

Enter Initial Time of Wildlife Sighting	07.09.2023 08:00 MDT

Department/Individual Who Reported Wildlife:

Surface Ops/Maintenance

Environment at Call-out Location	07.09.2023 08:15 MDT

Chronological Events

8:15 - Environment (ENV) responds to a bear call. Single bear just off the South Haul Road near Pond 5. Bear grazing in vegetated area at base of North Haul Road rock pile. ENV monitors from distance of approximately 50 meters.
8:25 - Bear turns towards rock pile and begins climbing up towards North Haul Road. ENV communicates with Surface Operations that there is a bear in their area and repositions.
8:30 - Bear is spotted by Surface Ops heading across North Haul Road towards PKC East and enters area.
8:35 - ENV arrives at PKC East area but unable to visually confirm bear's location.
8:45 - ENV monitors area attempting to locate bear but unable to do so. Surface Ops are notified of the bear in the area. ENV leaves scene.

9:30 - ENV notified that bear has been spotted in PKC West area. ENV returned to scene.
9:40 - Bear had already exited PKC area to the west. ENV confirmed bear had headed down the side of the PKC hill towards Pond 4 and away from mine infrastructure. ENV leaves scene.

Movement Map (Import NotePlus Site Map)

Photo 1

End of Environment Call-out	07.09.2023 09:40 MDT

Final Location of Wildlife

Near Pond 4, heading west away from site.

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Justin Macek
11.09.2023 15:05 MDT

Media summary

Photo 1

APPENDIX D

Wildlife Mortality Incident Reports 2023

Wildlife Report - 2021

Duck - 2023-08-15 - DOC Parking Lot

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Duck - 2023-08-15 - DOC Parking Lot
Document No.	WildlifeReport000284
	15.08.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 15.08.2023 07:15 MDT

Department/Individual Who Reported Mortality:

South Camp personnel

Environment at Call-out Location 15.08.2023 07:30 MDT

Location

DOC/South Camp parking lot

Animal Type Other

Description of Animal/Scene

Single deceased duck. Two peregrine falcons and a single raven were in area, likely all attempting to feed on the specimen.

Photo of Scene


Photo 1


Photo 2


Photo 3


Photo 4


Photo 5


Photo 6

Estimated Time of Death Hours

End of Environment Call-out 15.08.2023 07:45 MDT

Final Location of Carcass

Deposited onto tundra south of A21/RTX laydown area

Closure & Sign-off 1 / 1 (100%)

Wildlife Report Complete On

Signature

Justin Macek
15.08.2023 16:05 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Wildlife Report - 2021

Grouse - 2023-10-25 - Comm Shack

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	**Grouse - 2023-10-25 - Comm Shack**
Document No.	**WildlifeReport000306**
	25.10.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality
Wildlife Mortality	
Enter Initial Time of Report	25.10.2023 14:30 MDT
Department/Individual Who Reported Mortality:	Site Services
Environment at Call-out Location	25.10.2023 14:35 MDT
Location	On road between South Camp and Communication Shack
Animal Type	Other

Description of Animal/Scene

Single deceased grouse middle of road between the Communication Shack and South Camp. Slightly frozen to ground, still intact.

Photo of Scene


Photo 1

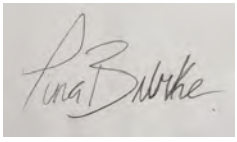

Photo 2


Photo 3


Photo 4

Estimated Time of Death	Hours
End of Environment Call-out	25.10.2023 14:45 MDT
Final Location of Carcass	Environment Sulfur Lab Freezer
Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	On

Signature



Tina Burke
25.10.2023 15:13 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Wildlife Report - 2021

Hare - 2023-04-17 - South Haul Road

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Hare - 2023-04-17 - South Haul Road
Document No.	WildlifeReport000244
	18.04.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 17.04.2023 22:30 MDT

Department/Individual Who Reported Mortality:

Water Treatment

Environment at Call-out Location 17.04.2023 23:00 MDT

Location

South Haul Road near Backfill plant

Animal Type Other

Description of Animal/Scene

At 22:30, April 17th, A pickup truck operator reported an injured Arctic Hare on the south haul road. Environment on call person mobilized to the scene to assess the injury.
At 23:00, Environment arrived on scene. The vehicle operator was present and pointed environment to the animal. The injured Arctic Hare was sitting on top of a road berm beside the truck that called in the injured animal. The operator reported to environment that the animal had run out in front of the moving vehicle on the south haul road in the dark and had been hit in the back right leg. Environment confirmed that the leg was severely broken and the animal was not moving away when approached. Environment came to the conclusion that the animal was in severe distress, and decided to euthanize the animal as humanely and swiftly as possible. Environment was able to approach close enough to physically dispatch the animal with a stunning blow to the head, followed by severing of the spinal cord. Photos were taken of the scene, and the carcass was removed from the road and placed on the tundra in the North Inlet Containment area to protect scavengers from road traffic.
21:30 Environment off scene

Photo of Scene


Photo 1

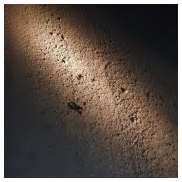


Photo 2


Photo 3


Photo 4


Photo 5

Estimated Time of Death Hours

End of Environment Call-out 17.04.2023 11:30 MDT

Final Location of Carcass

Carcass was removed from the road and placed on the tundra in the North Inlet Containment area to protect scavengers from road traffic.

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Gord Cumming
18.04.2023 08:54 MDT

Media summary

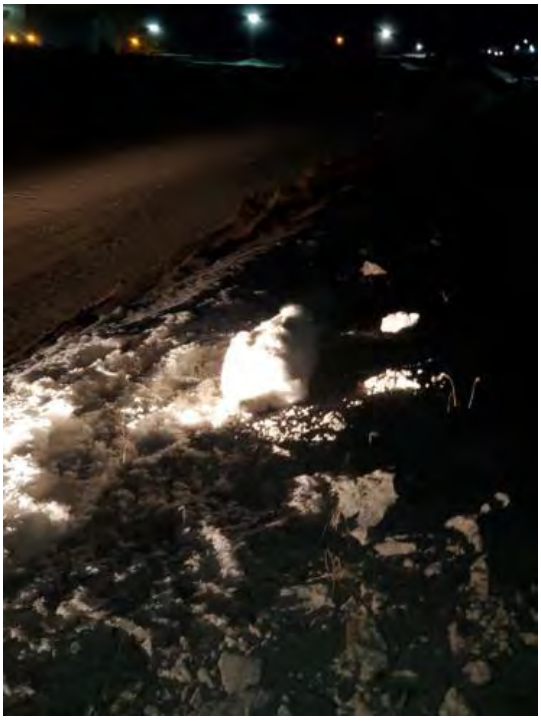


Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Wildlife Report - 2021

Hare - 2023-07-18 - Truck Shop Tire Dump

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Hare - 2023-07-18 - Truck Shop Tire Dump
Document No.	WildlifeReport000274
	19.07.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 18.07.2023 13:00 MDT

Department/Individual Who Reported Mortality:

Truck Shop Personnel

Environment at Call-out Location 18.07.2023 15:00 MDT

Location

Truck Shop Tire Dump

Animal Type Other

Description of Animal/Scene

Rabbit/hare found deceased by truck shop personnel near tire dump. Substantial insect colonization signaling it's been dead for multiple days at time of discovery.

Photo of Scene


Photo 1


Photo 2


Photo 3


Photo 4

Estimated Time of Death	Days
End of Environment Call-out	18.07.2023 15:30 MDT

Final Location of Carcass

Waste transfer area for incineration.

Closure & Sign-off 1 / 1 (100%)

Wildlife Report Complete	On

Signature

Justin Macek
19.07.2023 10:14 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Wildlife Report - 2021

Northern Pintail-2023-08-20- main camp road

Complete

Score	Flagged items	Actions
1 / 1 (100%)	**0**	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Northern Pintail-2023-08-20-main camp road

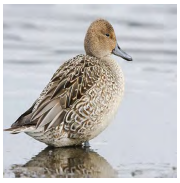


Photo 1

Document No.	WildlifeReport000286
	20.08.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 20.08.2023 08:40 MDT

Department/Individual Who Reported Mortality:

Warehouse Personal

Environment at Call-out Location 20.08.2023 08:55 MDT

Location

On the road between the STP and DOC

Photo 2

Animal Type Other

Description of Animal/Scene

8:55AM-spotted Duck in the middle of the road
8:57AM-started taking photos of deceased duck, it looked partially eaten. There was peregrine falcon flying over the carcass. Since it was a high traffic area, the falcon was hesitant to pick away at it, but it was making a lot of noise while I was near the carcass.

Photo of Scene

the time stamp on the camera was off.

Photo 3

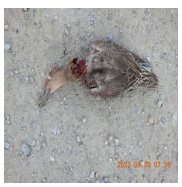


Photo 4

Photo 5

Estimated Time of Death Days

presumable time of death 5 hours , due to how much of the carcass was eaten.

End of Environment Call-out 20.08.2023 09:00 MDT

Final Location of Carcass

Environment lab freezer until further notice.

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

20.08.2023 09:59 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Wildlife Report - 2021

Northern Pintail Duck - 2023-08-15 - DOC Parking Lot

Complete

Score	1 / 1 (100%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Northern Pintail Duck - 2023-08-15 - DOC Parking Lot
Document No.	WildlifeReport000284
	15.08.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 15.08.2023 07:15 MDT

Department/Individual Who Reported Mortality:

South Camp personnel

Environment at Call-out Location 15.08.2023 07:30 MDT

Location

DOC/South Camp parking lot

Animal Type Other

Description of Animal/Scene

Single deceased pin-tailed duck. Two peregrine falcons and a single raven were in area, likely all attempting to feed on the specimen.

Photo of Scene


Photo 1


Photo 2


Photo 3


Photo 4


Photo 5


Photo 6

Estimated Time of Death Hours

End of Environment Call-out 15.08.2023 07:45 MDT

Final Location of Carcass

Deposited onto tundra south of A21/RTX laydown area

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete On

Signature

Justin Macek
15.08.2023 16:05 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Wildlife Report - 2021

Ptarmigan- 2023- 10- 13- C- Portal UG

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Ptarmigan- 2023- 10- 13- C- Portal UG
Document No.	WildlifeReport000298
	13.10.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 13.10.2023 07:45 MDT

Department/Individual Who Reported Mortality:

Underground Personnel

Environment at Call-out Location 13.10.2023 08:00 MDT

Location

Ramp Road heading down to C portal Entrance

Photo 1

Animal Type Other

White Tailed Ptarmigan

Description of Animal/Scene

8:02 AM - Found the three ptarmigan's that were called in on the road to C-portal UG entrance.
8:03AM - two ptarmigans were deceased one of which was decapitated and one was alive but very injured and could not move/flee when we approached the one ptarmigan.
8:08AM - Had to put the ptarmigan down due to sustained injuries.

Photo of Scene


Photo 2

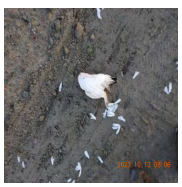


Photo 3


Photo 4


Photo 5


Photo 6


Photo 7


Photo 8


Photo 9


Photo 10


Photo 11


Photo 12


Photo 13

Estimated Time of Death	Hours
End of Environment Call-out	13.10.2023 08:15 MDT

Final Location of Carcass

Environment lab freezer awaiting ENR instruction.

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

13.10.2023 09:41 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Photo 12

Photo 13

Wildlife Report - 2021

Ptarmigan - 2023-10-24 - NCRP Ramp

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	**Ptarmigan - 2023-10-24 - NCRP Ramp**
Document No.	**WildlifeReport000304**
	25.10.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	**General sighting / Other**
Report Type	**Mortality**
Wildlife Mortality	
Enter Initial Time of Report	**24.10.2023 08:15 MDT**
Department/Individual Who Reported Mortality:	**Surface Operator**
Environment at Call-out Location	**24.10.2023 08:15 MDT**
Location	**Bottom of NCRP Ramp**
Animal Type	**Other**

Description of Animal/Scene

Two (2) ptarmigans at the side of the road near the base of the NCRP ramp. One of the ptarmigans had its insides (breast) completely visible due to absence of feathers along the breast. Other ptarmigan appeared to have small blood stains in various spots. Both ptarmigans were soft, limp, and slightly warm.

Both birds had their bodies intact with no missing limbs.

Photo of Scene


Photo 1

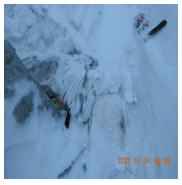


Photo 2


Photo 3


Photo 4

Estimated Time of Death	**Hours**
End of Environment Call-out	**24.10.2023 08:30 MDT**
Final Location of Carcass	**Sulfur lab freezer**
Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	**On**

Signature

Anton Jitnikovitch
25.10.2023 07:58 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Wildlife Report - 2021

Ptarmigan - 2023-10-25 - AN road

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	**Ptarmigan - 2023-10-25 - AN road**
Document No.	**WildlifeReport000305**
	25.10.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	**General sighting / Other**
Report Type	**Mortality**
Wildlife Mortality	
Enter Initial Time of Report	**25.10.2023 10:15 MDT**
Department/Individual Who Reported Mortality:	**Site Services - Light vehicle 310**
Environment at Call-out Location	**25.10.2023 10:20 MDT**
Location	**AN road, behind Waste Transfer**
Animal Type	**Other**
Description of Animal/Scene	**2 Deceased Ptarmigans on side of road**

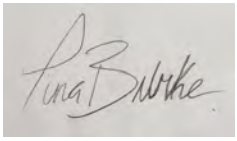
Photo of Scene


Photo 1


Photo 2

Estimated Time of Death	**Hours**
End of Environment Call-out	**25.10.2023 10:30 MDT**
Final Location of Carcass	**Environment Sulfur Lab Freezer**
Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	**On**

Signature



Tina Burke
25.10.2023 11:16 MDT

Media summary

Photo 1

Photo 2

Wildlife Report - 2021

Ptarmigan - 2023-10-27 - A21 Dike

Complete

Score	1 / 1 (100%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	**Ptarmigan - 2023-10-27 - A21 Dike**
Document No.	**WildlifeReport000307**
	27.10.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	**General sighting / Other**
Report Type	**Mortality**
Wildlife Mortality	
Enter Initial Time of Report	**27.10.2023 11:00 MDT**
Department/Individual Who Reported Mortality:	**Geotech**
Environment at Call-out Location	**27.10.2023 11:11 MDT**
Location	**North on A21 Dike**
Animal Type	**Other**

Description of Animal/Scene

Two (2) deceased Ptarmigans on the outer road of the A21 dike. Single raven picking at one Ptarmigan's body upon arrival. Both bodies were still soft.

Photo of Scene


Photo 1


Photo 2


Photo 3

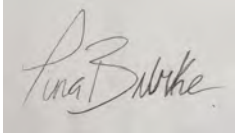

Photo 4


Photo 5


Photo 6

Estimated Time of Death	**Hours**
End of Environment Call-out	**27.10.2023 10:20 MDT**
Final Location of Carcass	**Environment Sulfur Lab freezer**
Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	**On**

Signature



Tina Burke
27.10.2023 11:52 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Wildlife Report - 2021

Ptarmigan - 2023-10-29 - Lakeshore Boulevard

Complete

Score	1 / 1 (100%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	**Ptarmigan - 2023-10-29 - Lakeshore Boulevard**
Document No.	**WildlifeReport000309**
	30.10.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	**General sighting / Other**
Report Type	**Mortality**
Wildlife Mortality	
Enter Initial Time of Report	**29.10.2023 10:00 MDT**
Department/Individual Who Reported Mortality:	**Surface Operator**
Environment at Call-out Location	**29.10.2023 10:15 MDT**
Location	**Lakeshore boulevard**
Animal Type	**Other**

Description of Animal/Scene

10:15 to 12:10 - ENV did not locate any carcass while searching on Lakeshore blvd.
12:11 - A Raven was scavenging the remnants of a ptarmigan north of the A21 intersection. There was no carcass remaining to collect upon arrival.

Photo of Scene


Photo 1

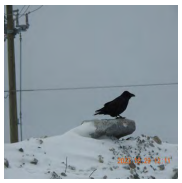


Photo 2


Photo 3


Photo 4


Photo 5

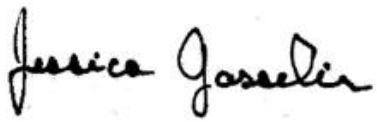

Photo 6


Photo 7


Photo 8

Estimated Time of Death	**Hours**
End of Environment Call-out	**29.10.2023 12:25 MDT**
Final Location of Carcass	**Unknown**
Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	**On**

Signature



Jessica Gosselin
30.10.2023 11:09 MDT

Media summary

Photo 1

Photo 2

Photo 3

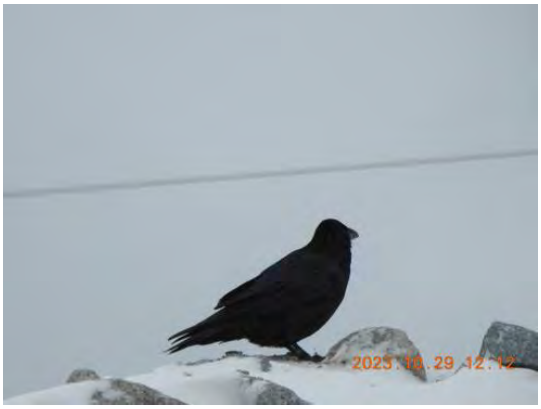


Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Wildlife Report - 2021

Ptarmigan - 2023-10-30 - Airport Road

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	**Ptarmigan - 2023-10-30 - Airport Road**
Document No.	**WildlifeReport000308**
	30.10.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	**General sighting / Other**
Report Type	**Mortality**
Wildlife Mortality	
Enter Initial Time of Report	**30.10.2023 06:50 MDT**
Department/Individual Who Reported Mortality:	**Site Services**
Environment at Call-out Location	**30.10.2023 07:15 MDT**
Location	**Airport road, before the N17 Laydown**
Animal Type	**Other**

Description of Animal/Scene

Single Ptarmigan deceased in the middle of the airport road just around the corner before N17 laydown. No signs of blood, body was hard and frozen upon retrieval.

Photo of Scene

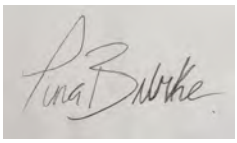

Photo 1


Photo 2


Photo 3

Estimated Time of Death	**Hours**
End of Environment Call-out	**30.10.2023 07:30 MDT**
Final Location of Carcass	**Cooler in Environment Sulfur Lab freezer**
Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	**On**

Signature



Tina Burke
30.10.2023 07:50 MDT

Media summary

Photo 1

Photo 2

Photo 3

Wildlife Report - 2021

Ptarmigan - 2023-11-25 - Airport Road

Complete

Score	1 / 1 (100%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	**Ptarmigan - 2023-11-25 - Airport Road**
Document No.	**WildlifeReport000310**
	25.11.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	**General sighting / Other**
Report Type	**Mortality**
Wildlife Mortality	
Enter Initial Time of Report	**25.11.2023 11:30 MST**
Department/Individual Who Reported Mortality:	**Environment**
Environment at Call-out Location	**25.11.2023 11:25 MST**
Location	

Airport road 2 different locations.
(1) West of North Inlet Water Treatment Plant
(2) Before N17 Laydown

Animal Type	**Other**

Description of Animal/Scene

(1) Middle of road, just inside bits left on ground
(2) Middle of road, just inside bits left on ground
Two Ravens were flying around in area and a fox spotted near the Airport heading East.

Photo of Scene


Photo 1

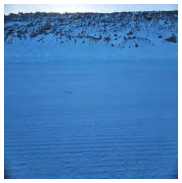


Photo 2

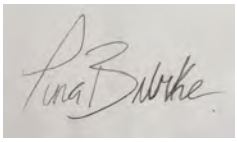

Photo 3


Photo 4


Photo 5

Estimated Time of Death	**Hours**
End of Environment Call-out	**25.11.2023 11:40 MST**
Final Location of Carcass	**Taken by an animal**
Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	**On**

Signature



Tina Burke
25.11.2023 11:57 MST

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Wildlife Report - 2021

Raven -2023-05-28 - AN Road

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Raven -2023-05-28 - AN Road
Document No.	WildlifeReport000250
	29.05.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 28.05.2023 09:30 MDT

Department/Individual Who Reported Mortality:

Environment Brennan

Environment at Call-out Location 28.05.2023 09:30 MDT

Location

AN Road on transformer platform closest to Emulsion Plant.

Photo 1

Animal Type Other

Raven

Description of Animal/Scene

Raven stuck on electrical platform,

Photo of Scene


Photo 2

Estimated Time of Death	Days
End of Environment Call-out	29.05.2023 10:00 MDT

Final Location of Carcass

Freezer

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

?
22.08.2023 10:09 MDT

Media summary

Photo 1

Photo 2

Wildlife Report - 2021

Rough Legged Hawk - 2023-07-27- A154 Dike

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Rough Legged Hawk - 2023-07-27- A154 Dike
Document No.	WildlifeReport000280
	27.07.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 27.07.2023 11:30 MDT

Department/Individual Who Reported Mortality:

HSE Dylan Price

Environment at Call-out Location 26.07.2023 09:30 MDT

Location

A154 Dike

Animal Type Other

Description of Animal/Scene

Rough Legged Hawk found deceased on the A154 Dike near a power pole.

Photo of Scene


Photo 1


Photo 2


Photo 3

Estimated Time of Death	Hours
End of Environment Call-out	26.07.2023 10:00 MDT

Final Location of Carcass

Environment Freezer

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Dylan Price
27.07.2023 11:39 MDT

Media summary

Photo 1

Photo 2

Photo 3

Wildlife Report - 2021

Rough Legged Hawk - 2023-08-14 - A154 Dike

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Rough Legged Hawk - 2023-08-14 - A154 Dike
Document No.	WildlifeReport000283
	14.08.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 14.08.2023 14:00 MDT

Department/Individual Who Reported Mortality:

Surface Geotechnical

Environment at Call-out Location 14.08.2023 15:00 MDT

Location

Northeast side of A154 Dike.

Animal Type Other

Description of Animal/Scene

Single deceased Rough Legged Hawk. Found on dike on a windy day (20 kts from Northwest) under power lines around dike. No evident injuries.

Photo of Scene


Photo 1


Photo 2


Photo 3


Photo 4

Estimated Time of Death	Hours
End of Environment Call-out	14.08.2023 15:30 MDT

Final Location of Carcass

Shipped to ECC - Yellowknife office

Closure & Sign-off 1 / 1 (100%)

Wildlife Report Complete	On

Signature

Justin Macek
14.08.2023 18:27 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Wildlife Report - 2021

Rough legged Hawk- 2023-10-17 **Complete**

Score	1 / 1 (100%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Rough legged Hawk- 2023-10-17
Document No.	WildlifeReport000299
	17.10.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 16.10.2023 17:30 MDT

Department/Individual Who Reported Mortality:

Dan Guigon, Geo Technical services

Environment at Call-out Location 17.10.2023 10:55 MDT

Location

A21 Dike south by power transformer

Photo 1

Animal Type Other

Rough Legged Hawk

Description of Animal/Scene

Rough Legged Hawk
10:55AM- found RLHA on the outside of the A21 Dike slopping down towards the water.
11:00AM- Took pictures of scene and packed RLHA in plastic bag, brought back to environment Freezer.

Photo of Scene

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

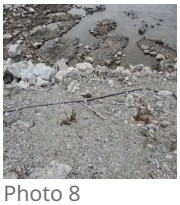


Photo 8

Estimated Time of Death	Days

Got email from geo tech department end of shift on Monday 6:30PM October 16th.

End of Environment Call-out	17.10.2023 11:05 MDT

Final Location of Carcass

Environment freezer until ENR further instruction.

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

17.10.2023 13:45 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Wildlife Report - 2021

Sic Sic- 2023-05-07 - geology coreshack in D1 Laydown

Complete

Score	1 / 1 (100%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Sic Sic- 2023-05-07 - geology coreshack in D1 Laydown
Document No.	WildlifeReport000247
	08.05.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 07.05.2023 09:00 MDT

Department/Individual Who Reported Mortality:

Geology/Sarah

Environment at Call-out Location 08.05.2023 09:30 MDT

Location

In the middle of road a dead end road, in front of the geology core shack at the D1 lay down.

Photo 1

Animal Type Other

Sic Sic

Description of Animal/Scene

Sic Sic,
9:30AM- drove up into the D1 laydown by the Geo shack and immediately saw the Sic Sic.
9:32AM - examined mortality and it looked fairly fresh, possibly ETD was the last night or very early morning.
9:34AM - Sic Sic insides blew out his back.

Photo of Scene

Photo 2

Photo 3

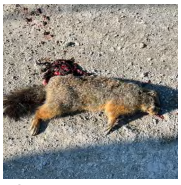


Photo 4

Estimated Time of Death	Hours
End of Environment Call-out	07.05.2023 09:40 MDT

Final Location of Carcass

Back of the N17 Laydown.

Photo 5

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Brennan Debassige
08.05.2023 07:30 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

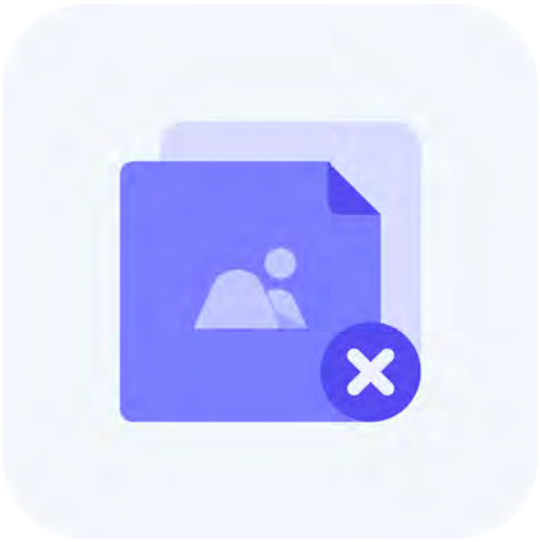


Photo 5

Wildlife Report - 2021

Sic Sic- 2023-05-07 - geology coreshack in D1 Laydown

Complete

Score	1 / 1 (100%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Sic Sic- 2023-05-07 - geology coreshack in D1 Laydown
Document No.	WildlifeReport000247
	08.05.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 07.05.2023 09:00 MDT

Department/Individual Who Reported Mortality:

Geology/Sarah

Environment at Call-out Location 08.05.2023 09:30 MDT

Location

In the middle of road a dead end road, in front of the geology core shack at the D1 lay down.

Photo 1

Animal Type Other

Sic Sic

Description of Animal/Scene

Sic Sic,
9:30AM- drove up into the D1 laydown by the Geo shack and immediately saw the Sic Sic.
9:32AM - examined mortality and it looked fairly fresh, possibly ETD was the last night or very early morning.
9:34AM - Sic Sic insides blew out his back.

Photo of Scene

Photo 2

Photo 3

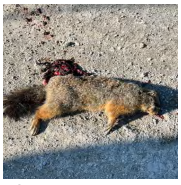


Photo 4

Estimated Time of Death	Hours
End of Environment Call-out	07.05.2023 09:40 MDT

Final Location of Carcass

Back of the N17 Laydown.

Photo 5

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Brennan Debassige
08.05.2023 07:30 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

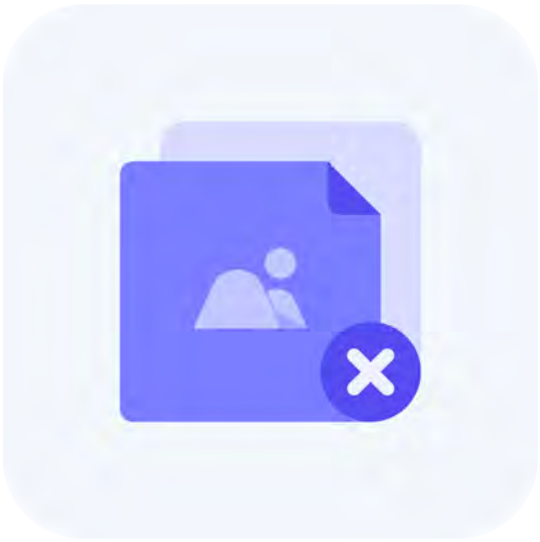


Photo 5

Wildlife Report - 2021

SikSik - 2023-08-24 - Airport Road

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	SikSik - 2023-08-24 - Airport Road
Document No.	WildlifeReport000287
	24.08.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 24.08.2023 15:00 MDT

Department/Individual Who Reported Mortality:

Environment

Environment at Call-out Location 24.08.2023 15:00 MDT

Location

Middle of airport road near the ERT Training Gounds

Animal Type Other

Description of Animal/Scene

Siksik found in middle of the road with guts protruding. Mortality appeared likely to be related to a vehicle collision with the siksik.

Photo of Scene


Photo 1


Photo 2


Photo 3


Photo 4

Estimated Time of Death Hours

End of Environment Call-out 01.08.2023 00:00 MDT

Final Location of Carcass

Tundra west of N17 Laydown

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete On

Signature

Anton Jitnikovitch
24.08.2023 17:05 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Wildlife Report - 2021

White Crowned Sparrow - 2023-08-29 - Truck Shop Bay 3

Complete

Score	**1 / 1 (100%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	White Crowned Sparrow - 2023-08-29 - Truck Shop Bay 3
Document No.	WildlifeReport000289
	29.08.2023

Audit	1 / 1 (100%)
Type of Wildlife Report	General sighting / Other
Report Type	Mortality

Wildlife Mortality

Enter Initial Time of Report 29.08.2023 16:50 MDT

Department/Individual Who Reported Mortality:

Truck Shop Personnel

Environment at Call-out Location 29.08.2023 16:55 MDT

Location

Truck Shop Bay 3

Animal Type Other

Description of Animal/Scene

Deceased White Crowned Sparrow found on the ground inside Bay 3 of the truck shop.

Photo of Scene


Photo 1


Photo 2


Photo 3


Photo 4

Estimated Time of Death Hours

End of Environment Call-out 29.08.2023 00:00 MDT

Final Location of Carcass

Environment Sulfur Lab Freezer

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete On

Signature

Anton Jitnikovitch
29.08.2023 17:04 MDT

Media summary

Photo 1

Photo 2

Photo 3

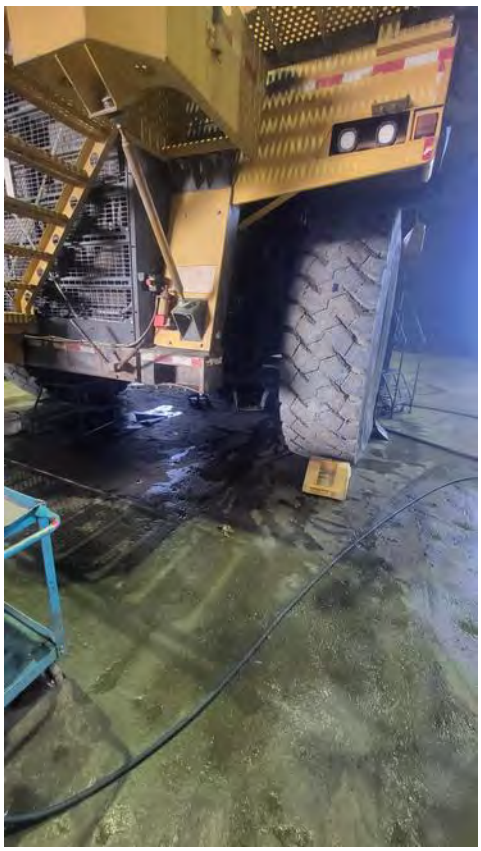


Photo 4

APPENDIX E

Site Wildlife Photographs 2023

Figure 1: Barren-ground caribou (*Rangifer tarandus groenlandicus*). 3 July 2023.

Figure 2: Wolverine (*Gulo gulo*). 5 July 2023.

Figure 3: Grizzly bear (*Ursus arctos*). 15 June 2023.

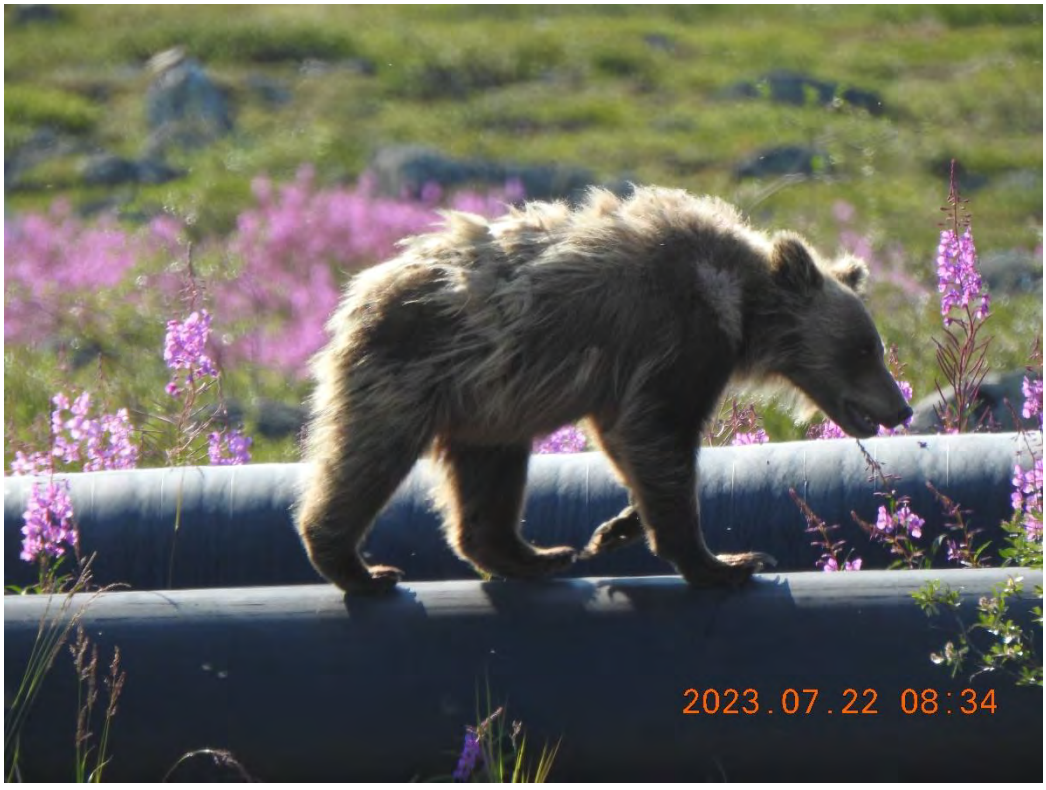


Figure 4: Grizzly bear. 22 July 2023.

Figure 5: Grizzly bear sow and cub. 22 May 2023.

Figure 6: Red fox (*Vulpes vulpes*). 13 May 2023.

Figure 7: Arctic hare (*Lepus arcticus*). 22 July 2023.

Figure 8: Peregrine falcon (*Falco peregrinus*). 05 Aug 2023.

Figure 9: Sik-sik (*Spermophilus parryii*). 3 June 2023.

Figure 10: Grizzly bear sow and cubs. 9 June 2023.

Figure 11: Common raven (*Corvus corax*). 18 June 2023.

Figure 12: Greater white-fronted geese (*Anser albifrons*). 18 June 2023.

Figure 13: Bald eagle (*Haliaeetus leucocephalus*). 22 June 2023.

Figure 14: Barren-ground caribou. 17 July 2023.

Figure 15: Red fox. 29 August 2023.

Figure 166: Barren-ground caribou. 27 June 2023.

Figure 17: Grizzly bear sow and cubs. 9 June 2023.

APPENDIX F

Caribou Incidental Observations Summary 2023

Date	Estimated Number of Caribou	Description
2023-03-25	45	Large herd observed while doing transect (on snowmobiles) and stopped
2023-03-31	250	Large herd feeding near winter road
2023-04-03	23	Herd observed on tundra
2023-04-04	23	Herd observed on tundra
2023-04-05	20	Herd observed on tundra
2023-04-07	130	Herd observed on tundra
2023-04-08	15	Females with calves observed near camp on tundra
2023-04-09	30	Herd observed bedded close to ice road
2023-04-21	25	Southeast of the south winter road approach, outside the blast exclusion zone heading NE
2023-05-07	40	40 caribou were reported spotted near the emulsion plant
2023-05-09	1	Single caribou walking on South Haul Road towards the shallow bay
2023-05-10	1	Single caribou observed walking north towards the tundra near the intersection of Airport Road and N17 Laydown
2023-05-12	1	Single caribou, observed east of the airport office along pond
2023-05-13	1	Single caribou, same one from previous day in similar location
2023-05-13	1	Single Caribou, different from animal near airport, on ice near A21
2023-05-14	1	Single caribou, same caribou near the airport from previous day, on hill near airport
2023-05-16	1	Single caribou, short dark forked antlers, white coat, likely young male adult, walking observed at SCRP
2023-05-16	1	Same caribou as this morning, at airport
2023-05-17	1	Same single caribou as 5/16/2023, in the same area at the airport
2023-05-19	1	Single, very blonde caribou, probably same as 17 May, observed at north inlet
2023-05-20	2	Same two caribou as spotted over last week. Both light coated, one young adult male, one female. Observed at north inlet
2023-05-21	2	Same two caribou as spotted over last week. Both light coated, one young adult male, one female. Observed at north inlet
2023-05-22	2	Same two caribou as spotted over last week. Both light coated, one young adult male, one female. Observed at north inlet
2023-05-26	2	Same two caribou spotted over last week. Both light coated, one young male adult, one female. Observed beside airport runway
2023-05-30	2	Same two caribou spotted over last week. Both light coated, one young male adult, one female. Observed beside airport runway
2023-05-31	2	Same two caribou spotted over last week. Both light coated, one young male adult, one female. Observed at north end of NIWT
2023-06-06	1	Single caribou observed between pond 2/3
2023-06-08	2	Two caribou. Both with antlers. One had a large antler rack and sizeable white spot around the neck and upper to mid body - suggesting it is a male. Other caribou had a smaller antler rack and smaller white spot - suggesting it is a female. Both caribou antlers were noticeably covered in a furry velvet, however, male antlers appeared more velvet (potentially due to larger size). Age unknown but were not calves. Observed in vegetation patch alongside Airport Road
2023-06-10	1	Single caribou laying down on tundra, observed along Airport Road
2023-06-11	1	Single caribou walking on road, observed moving North along Airport Road

Date	Estimated Number of Caribou	Description
2023-06-12	1	Single caribou. Likely female due to small antler rack and not overly large white spot around the neck. Appeared to have some fur hanging off the left side of its mid-body, potentially due to fur shedding. Observed near Pond 7
2023-06-13	2	Two caribou. Appeared to be the same male and female from earlier in the week. Observed west of the airport terminal
2023-06-15	3	3 Caribou observed lakeside of the south haul road
2023-06-16	3	3 caribou heading north, observed at South Haul Road by SCAP warehouse
2023-06-16	3	3 caribou spotted near the south shallow bay - not on the road
2023-06-19	4	4 caribou observed near shallow bays to north of the haul road
2023-06-20	2	2 caribou, both have large antler racks, observed near intersection of south and north haul road to Zone 1
2023-06-20	2	2 caribou, one with small antler rack and other with big antler rack, observed near intersection of South Haul Road and Backfill Plant, and Shallow Bay
2023-06-21	4	4 caribou, males/females, observed at Shallow Bay
2023-06-23	1	caribou sighting @ 3am, sounds like the same caribou that has been hanging around site, moved east toward A418ay 11:30
2023-06-23	1	single caribou lying down on tundra near emulsion plant
2023-06-27	2	2 caribou, 1 smaller and light brown, observed at SCRP
2023-06-27	2	2 caribou, different from the sighting at SCRP. Observed at Pond 12
2023-06-28	2	2 caribou, same size. Observed at Process ROM Rejects
2023-06-29	1	1 Caribou, appears to be healthy. Observed near connector heading to PKC and near south cell of PKC
2023-06-29	2	2 caribou, 1 smaller and light brown. Observed near Airport Road
2023-06-29	1	Adult observed near Pond 12
2023-06-30	1	Adult, dark brown, grazing. Observed on tundra near Waste Transfer and near A21 Muster
2023-06-30	3	Observed at the intersection of the North Haul Road
2023-06-30	2	Two caribou - no description was provided - personnel who reported glanced over and saw them momentarily. Observed near (1) Zone 1 Laydown and (2) in the tundra near E21 sump
2023-07-01	2	Appeared healthy. Observed near 154 Ramp heading towards Dump 7
2023-07-01	1	Between A21 Pit Shop and Lakeshore Blvd just South of Seacan Alley
2023-07-02	2	Appeared healthy. (1) and (2) observed just behind Zone 1 at the Batch Plant
2023-07-03	4	Adult caribou, fur shedding, large antlers. Observed near PKC, batch plant, veg plots, SCAP, South/North Haul Road, North Inlet
2023-07-04	2	1 light color female. 1 smaller darker male, observed near Pond 3 and 4
2023-07-06	2	2 adults, both large antlers. Observed at back of Batch Plant
2023-07-06	1	Single caribou (presumed female), large antler rack. Fur appears somewhat mangy/patchy but overall, a healthy adult. Observed near South Haul Road moving towards Truck Shop and Vegetation Patch, and near the Vegetation patch outside the BB Dorm/Cafeteria area
2023-07-07	1	Single caribou observed near Shallow Bays
2023-07-08	1	Single caribou (presumed male), large antlers, patchy coat. Observed by road south end of A21 dike road (in blast zone)

Date	Estimated Number of Caribou	Description
2023-07-09	1	Single caribou (presumed male), (1) South Winter Road Approach, (2) walking trail area near BB dorm
2023-07-10	1	Single caribou (presumed male), large antlers. Observed at BB Dorm
2023-07-10	1	Single caribou (presumed male), observed at A21 Water Tree
2023-07-10	1	Single caribou (presumed male), observed at North Water Tree
2023-07-11	1	Single caribou (presumed male), observed at Test Pile Trailers
2023-07-11	1	Single large caribou (presumed male), observed at ROM hill/PKC muster
2023-07-11	1	Single caribou (presumed male), observed at intersection of AN and Emulsion access roads
2023-07-12	1	Single caribou. Unsure whether male or female. Large antler rack. Observed near (1) ROM Hill and (2) SW PKC perimeter
2023-07-14	2	Two caribou, no description. Observed at haul road, batch plant
2023-07-14	1	Single caribou (presumed male), looked to be in discomfort - standing, shaking. Observed near mag storage
2023-07-15	2	Two caribou (presumed male), one with extreme discomfort. Observed SW side of SCRP
2023-07-15	1	Single caribou (presumed male) grazing next to the road. 5m from road near Emulsion plant
2023-07-15	1	Single caribou lying down at the end of C dorm
2023-07-16	3	Two caribou, one is the same uncomfortable individual, a third spotted. Observed near Pond 1
2023-07-17	3	group of 3 caribou, same ones that have been on site. Observed near D dorm main accommodations
2023-07-18	3	3 caribou observed at different times. Location indicated as “multiple”
2023-07-19	2	one large caribou and one smaller (presumed male), both with sizeable racks walking down the road to pond 10 near BB dorm
2023-07-20	1	Single caribou, near site services parking
2023-07-20	1	Single large caribou, near ROM Hill walking north on south haul
2023-07-21	1	Single caribou (presumed male), near Airport Road
2023-07-22	1	Patchy coat caribou with large antlers, near Pond 1
2023-07-25	2	Caribou with more branched antlers had a slight limp on its back left leg. Near winter road staging
2023-07-27	1	Single caribou (presumed male), with large antlers, near Scap Pond 12
2023-07-28	1	Single caribou (presumed male) with big antler rack, near south haul road headed towards C Portal
2023-07-29	1	big antler on caribou, dark, was grazing, not bothered by vehicle while monitoring. Near Main camp D dorm side
2023-07-30	1	Single caribou (presumed male), big antlers, dark. Near Main camp D dorm side
2023-07-30	1	Single caribou (presumed male), big antlers, dark. Near Main camp D dorm side
2023-07-30	1	South camp, R dorm
2023-07-30	1	A21 Haul Road
2023-07-31	2	Airport runaway
2023-08-01	1	N17 Laydown
2023-08-02	2	Base of NCRP across North Inlet Water Treatment Plant

Date	Estimated Number of Caribou	Description
2023-08-03	1	On airport road, near N17
2023-08-04	1	Single caribou (presumed male), near DOC to powerhouse, Metcon, Waste Transfer
2023-08-05	1	Single caribou (presumed male), grazing on tundra, near Airport Road
2023-08-08	2	Two caribou (presumed male), walking airport road, near N17
2023-08-11	3	Three caribou (presumed male), walking towards the airport, near Airport Road to NI
2023-08-14	1	Single large caribou near heli pad on tundra
2023-09-13	3	3 healthy caribou, near Airport runway, onto tundra to north
2023-09-30	1	Single Caribou, near Pond 3 moving onto tundra
2023-10-17	1	Near SCRP
2023-10-30	1	Single calf caribou, small antlers (photos taken). Near A21 Haul Road/A21 Zone 3

Figure 1. A caribou kill site was documented during exploration activities in May 2023. Approximately 10 caribou carcasses were observed near an esker approximately 28 kms northeast from the Mine. The site was described as the remnants of a camping site with a fire pit. Employees speculated that the site was not new, but instead revealed by melting snow.

APPENDIX G

Wildlife Deterrent Action Incident Reports 2023

Wildlife Report - 2021

Caribou - 2023-07-14 Magazine Storage

Complete

Score	2 / 401 (0.5%)	**Flagged items**	0	**Actions**	0

Audit Title (Animal - yyyy-mm-dd - Location)	Caribou - 2023-07-14 Magazine Storage
Document No.	WildlifeReport000273
	16.07.2023

Audit	2 / 401 (0.5%)
Type of Wildlife Report	Deterrent Reporting
Deterrent Report	1 / 400 (0.25%)
Enter Initial Time of Wildlife Sighting	14.07.2023 16:30 MDT

Department/Individual Who Reported Wildlife:

Surface Operations / Blasters

Environment at Call-out Location	14.07.2023 17:45 MDT
Animal Type	Caribou

Description (eg. number of individuals, colour, age, size, etc.):

Single adult caribou

Photo (If Possible):


Photo 1


Photo 2


Photo 3

Chronological Events

16:30 - Surface Operations alerted Environment (ENV) that there was a single caribou spotted at the west end of the Magazine Storage area. ENV made a local advisory.

17:30 - Surface Operations contacted ENV and advised the caribou was still in area. ENV began travelling to the scene to document the interaction and attempt to deter the caribou to a safer location for both the animal and personnel.

17:50 - ENV arrived on site and drove further into the magazine storage area and was able to make visual contact with the caribou. ENV then used the vehicle to slowly and safely deter the animal from the enclosed area up. Caribou would not move, at which point ENV used the TRUCK HORN to alert the animal and begin successfully deterring it to safety.

17:57 - Caribou moved onto tundra directly north of magazine storage. It began heading northeast towards the PKCF-SCRP haul road. All personnel in the area were advised via radio to reduce their speeds and give the animal the right of way.

18:01 - Caribou continued a little further into the PKC until it eventually stopped and stood stationary. ENV remained at the scene and continued to monitor the animal for approximately 15 minutes from a distance, at which point they reminded personnel in the area of the caribou's presence and left the scene.

Movement Map (Import NotePlus Site Map)

Photo 4

Deterrent Count	1 / 400 (0.25%)
Truck	1 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	0 From 0 to 40
Specify	
End of Environment Call-out	14.07.2023 18:15 MDT
Final Location of Wildlife	

PKC West Spigot Road

Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	On

Signature

Justin Macek

16.07.2023 14:27 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Wildlife Report - 2021

Caribou - 2023-07-08 - A21 Dike South Approach

Complete

Score	1%	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Caribou - 2023-07-08 - A21 Dike South Approach
Document No.	WildlifeReport000270
	09.07.2023

Audit	1%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

0.75%

Enter Initial Time of Wildlife Sighting 08.07.2023 14:50 MDT

Department/Individual Who Reported Wildlife:

Drill/Blast Supervisor - Surface Mining

Environment at Call-out Location 08.07.2023 15:02 MDT

Animal Type Caribou

Description (eg. number of individuals, colour, age, size, etc.):

Single male caribou, large antlers, patchy fur

Photo (If Possible):

Chronological Events

1450 Surface Mining notifies Environment (ENV) of a single caribou within the blast radius at A21 Dike south approach, delaying the pit blast.
1502 ENV arrives on scene in Light vehicle (LV), caribou is grazing off the side of the road. ENV pulls up as close as possible to caribou using LV and uses verbal deterrents (RAISED VOICE) to encourage caribou to move to safer area.
1505 Caribou starts moving, walks onto road in front of LV. ENV follows caribou at ~5km/hr from ~20m distance using LV to herd caribou as it walks along road.
1510 ENV requests nearby blast guard to move vehicle to block off access to laydown area to encourage caribou to keep moving along main road
1514 ENV accelerates to 10km/hr to block off haul road intersection back towards A21 Dike north approach to prevent caribou from re-entering blast zone. Caribou continues along haul road and walks down onto tundra from road cutout.
1522 Caribou in tundra at base of South Country Rock pile, starts to graze. Caribou is outside of 1km blast exclusion zone. Environment stays on scene to monitor until blast is cleared. Caribou continues to graze.
1537 Blast is called but is not audible to ENV and no visible response from caribou, continues to graze
1558 Environment leaves scene

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

0.75%

Truck	**2** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**1** From 0 to 40
Specify	Raised voice
End of Environment Call-out	08.07.2023 15:58 MDT

Final Location of Wildlife

Tundra by SE base of South Country Rock Pile

Photo 2

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Nicole Goodman

09.07.2023 11:05 MDT

Media summary

Photo 1

Photo 2

Wildlife Report - 2021

Cross Fox - 2023-10-23 - Main Camp

Complete

Score	20 / 401 (4.99%)	**Flagged items**	0	**Actions**	0

Audit Title (Animal - yyyy-mm-dd - Location)	Cross Fox - 2023-10-23 - Main Camp
Document No.	WildlifeReport000301
	23.10.2023

Audit	20 / 401 (4.99%)
Type of Wildlife Report	Deterrent Reporting
Deterrent Report	19 / 400 (4.75%)
Enter Initial Time of Wildlife Sighting	23.10.2023 07:00 MDT

Department/Individual Who Reported Wildlife:

(1) Site Services
(2) Environment

Environment at Call-out Location	23.10.2023 07:20 MDT
Animal Type	Fox

Description (eg. number of individuals, colour, age, size, etc.):

(1) two cross foxes , black, red, grey
appeared to be adolescents
(2) one cross fox. appeared to be an adolescent and likely the same one from earlier today

Photo (If Possible):

Photo 1

Chronological Events

7:00 AM - Call from site services about foxes at main camp, kitchen bay door.
7:20 AM- Env got eyes on foxes near bay door, used truck and yelling to deter away from bay door.
7:30 AM- Had deterred them around the back of the building. Tried to move them away with YELLING and TRUCK but they were not phased.
7:35 AM- Used BEAR SPRAY in the direction of foxes and they split up. Fox-2 ran away from camp Fox-1 ran towards DOC. Env followed Fox-1 headed towards DOC, and sprayed one more time in its direction. It then ran towards winter road approach.
7:50 AM- Went to get eyes on Fox-2 and it was headed back to the main camp. Env tried to deter it with the TRUCK, did not work. Env got in between the fox and main camp , and shot off two SHORT RANGE RUBBER SLUGS near the animal. Fox-2 just stood and didn't come any closer.
8:00 AM- Fox-2 went and hid in a trench with large rocks. Env was unable to spot it after.

16:15 - Environment (ENV) personnel spotted a fox at the STP.
16:25 - ENV CLAPPED and SHOUTED, the fox moved away but came back almost immediately to the same location.
16:40 - ENV attempted to guide the fox to a location away from the main roadway at main camp by gently moving the TRUCK towards the fox and CLAPPING and SHOUTING. Fox did not respond.
16:50 - ENV fired 2 rubber slugs in the direction of the fox to move it away from the main roadway.
16:55 - Fox laid down in the tundra/rock patch beside the hockey rink.
17:10 - ENV observed the fox and then left the scene.

Movement Map (Import NotePlus Site Map)

Photo 2


Photo 3

Deterrent Count	19 / 400 (4.75%)
Truck	5 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	4 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	10 From 0 to 40
Specify	bear spray-2 , Yelling/clapping-8
End of Environment Call-out	23.10.2023 08:30 MDT

Final Location of Wildlife

Fox-1 , South Winter Road Approach
Fox-2 , Trench by Lac de Gras

Encounter #2:
Main Camp near hockey rink

Closure & Sign-off	1 / 1 (100%)

Wildlife Report Complete	On

Signature

23.10.2023 17:37 MDT

Media summary

Photo 1

Photo 2

Photo 3

Wildlife Report - 2021

Cross-Fox-2023-11-26-Diffuser

Complete

Score	13 / 401 (3.24%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Cross-Fox-2023-11-26-Diffuser
Document No.	WildlifeReport000311
	26.11.2023

Audit	13 / 401 (3.24%)
Type of Wildlife Report	Deterrent Reporting
Deterrent Report	12 / 400 (3%)
Enter Initial Time of Wildlife Sighting	26.11.2023 10:50 MST

Department/Individual Who Reported Wildlife:

Environment

Environment at Call-out Location	26.11.2023 10:50 MST
Animal Type	Fox

Description (eg. number of individuals, colour, age, size, etc.):

Single fox, dark furred with red patches (neck and body), adult size.

Photo (If Possible):


Photo 1


Photo 2


Photo 3

Chronological Events

10:50 Three Environment (ENV) employees noticed a dark furred fox coming from the lakeshore near the North Inlet in their direction on the frozen lake at the diffuser area.
10:51 - As the fox came close of ENV1 and ENV2, ENV1 CLAPPED and SHOUTED, the fox moved in direction of ENV3.
10:52 - ENV3 CLAPPED and SHOUTED, the fox moved back in direction of ENV1 and ENV2.
10:53 - ENV1 CLAPPED and SHOUTED, the fox went a few steps away, looked into a hole in the ice, marked the emplacement, then walked in direction of ENV2.
10:55 - ENV2 CLAPPED and SHOUTED, the fox moved in direction of ENV1.
10:56 - ENV1 CLAPPED and SHOUTED, the fox moved in direction of ENV3.
10:57 - ENV3 CLAPPED and SHOUTED, the fox left on the ice going East toward the A154 dyke. ENV scanned the area to make sure the fox was not coming back.
11:00 - ENV resumed working.

Movement Map (Import NotePlus Site Map)

Photo 4

Deterrent Count	12 / 400 (3%)

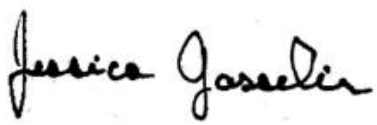
Truck	0 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	12 From 0 to 40
Specify	Clapped x6, Shouted x6
End of Environment Call-out	26.11.2023 11:00 MST

Final Location of Wildlife

A154 dyke

Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	On

Signature



Jessica Gosselin
27.11.2023 07:52 MST

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Wildlife Report - 2021

Fox - 2023-10-24 - Lakeshore Blvd

Complete

Score	**4 / 401 (1%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Fox - 2023-10-24 - Lakeshore Blvd
Document No.	WildlifeReport000303
	24.10.2023

Audit	4 / 401 (1%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

3 / 400 (0.75%)

Enter Initial Time of Wildlife Sighting	24.10.2023 10:30 MDT

Department/Individual Who Reported Wildlife:

Environment

Environment at Call-out Location	24.10.2023 10:30 MDT
Animal Type	Fox

Description (eg. number of individuals, colour, age, size, etc.):

Single fox, dark furred (cross fox - black, grey, red). Appeared to be an adolescent.

Photo (If Possible):

Chronological Events

10:30 - Environment (ENV) noticed a dark furred fox in the middle of the road along Lakeshore Blvd.
10:33 - ENV used the TRUCK HORN to deter the fox off the main road, the fox moved to the side of the road but stayed nearby.
10:34 - ENV then CLAPPED and SHOUTED to guide the fox further away from the road. The fox ran into the tundra beside Lakeshore Blvd.
10:40 - ENV left the scene.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

3 / 400 (0.75%)

Truck	**1** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40

C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**2** From 0 to 40
Specify	CLAP(1), SHOUT (1)
End of Environment Call-out	24.10.2023 10:40 MDT

Final Location of Wildlife

Tundra beside Lakeshore Blvd

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Anton Jitnikovitch
24.10.2023 15:50 MDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly and Cub - 2023-05-01 - West of PKC Muster

Complete

Score	**0.75%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly and Cub - 2023-05-01 - West of PKC Muster
Document No.	WildlifeReport000245
	01.05.2023

Audit	0.75%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

0.5%

Enter Initial Time of Wildlife Sighting 01.05.2023 15:00 PDT

Department/Individual Who Reported Wildlife:

Projects

Environment at Call-out Location 01.05.2023 15:15 PDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Grizzly Sow and Cub, medium-large sow, young and small cub. Both looked healthy.

Photo (If Possible):

Chronological Events

4:00 - Environment receives call grizzly and sow heading up A21 haul road towards ROM.
4:15 - Environment staff locate bears on tundra west of the PKC muster heading towards PKCF.
4:25 - Yelling to deter bears from entering PKCF with no success.
4:30 - Use of bear banger to deter bears from entering PKCF. Bears head back towards tundra. Environment staff observe.
4:50 - Bears in good location, grazing - Environment staff leave area

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

0.5%

Truck	**0** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**1** From 0 to 40

C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**1** From 0 to 40
Specify	Yelling
End of Environment Call-out	01.05.2023 16:00 PDT

Final Location of Wildlife

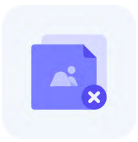
Tundra by Test Piles

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature



Dylan Price
01.05.2023 17:12 PDT

Media summary

Photo 1

Wildlife Report - 2021

Sow and cub- 2023-05-02- vegetation study plots

Complete

Score	**1.25%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Sow and cub- 2023-05-02- vegetation study plots
Document No.	WildlifeReport000246
	02.05.2023

Audit	1.25%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1%

Enter Initial Time of Wildlife Sighting 02.05.2023 12:00 PDT

Department/Individual Who Reported Wildlife:

fountain tire tech

Environment at Call-out Location 02.05.2023 12:30 PDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

2 grizzly bears, one female adult, one cub sex unknown, light brown on upper body, and dark brown on lower half.

Photo (If Possible):

Chronological Events

1:00 PM- call from tire tech about grizzly's in area on south haul road headed north east.
1:30 PM- got eyes on grizzly's in between PKC rock hill and South haul road, moved in area to deter with truck.
1:35PM successfully moved bears across the road to veg plots, bears looked to be headed toward ice .
1:38 PM bears decided to turn around and head back towards road, fired two pen bangers in sky to deter, was successful.
1:40-2:30 monitored bears until we felt that they were safe.

Movement Map (Import NotePlus Site Map)

Deterrent Count

1%

Truck	**2** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**2** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0**

	From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40
Specify	
End of Environment Call-out	02.05.2023 13:30 PDT
Final Location of Wildlife	

Veg Plots

Closure & Sign-off

100%

Wildlife Report Complete	On
Signature	

Brennan D.
02.05.2023 14:29 PDT

Wildlife Report - 2021

Grizzly - 2023-05-23

Complete

Score	6 / 401 (1.5%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-05-23
Document No.	WildlifeReport000248
	23.05.2023

Audit	6 / 401 (1.5%)
Type of Wildlife Report	Deterrent Reporting
Deterrent Report	5 / 400 (1.25%)
Enter Initial Time of Wildlife Sighting	22.05.2023 19:45 MDT

Department/Individual Who Reported Wildlife:

Pit Dewatering

Environment at Call-out Location	23.05.2023 20:00 MDT

Animal Type

Description (eg. number of individuals, colour, age, size, etc.):

Blonde sow and young yearling cub. Blonde sow has a white tag in her left ear. She and the cub were on site together in summer 2022

Photo (If Possible):


Photo 1

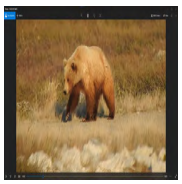


Photo 2


Photo 3

Chronological Events

22 May, 2023
19:50 Pit dewatering crew reported the sow and cub south of A21 on the ice, making their way towards site.
20:10 Bears reported near Pond 11. While mobilizing to the area.
20:20 Environment arrived at the steel laydown near pond 11. Bears were in the Steel laydown. The bears progressed around the communications building hill, and went north toward the shallow bays. Environment stayed between the bears and the Main Accommodations Complex as they went north.
Environment noted that the sow had what appeared to be a small blood stain on her front right shoulder.
21:03 The sow and cub approached the backfill haul road following the vegetation plots access road. Environment made an announcement on local radio channels to all vehicle traffic in the area to watch for grizzlies crossing the road. The bears then crossed the road after the haul truck passed and entered Pond 13 near the Underground C Portal.
21:24 Environment saw the cub reaching up a power pole that had electrical cables extending down to a junction box within reach. Environment yelled, and clapped their hands to stop the cub from interacting with the power pole.
21:35 The sow and cub began walking up the middle of the North Haul Road towards the Backfill ROM and NCRP, Environment followed behind, then approached again within 15m on the bears' left side to steer the animals off the haul road and across the till pile towards the North Inlet.
21: 40 Bears were in the North Inlet heading west following the airport road. Environment updated the site-wide announcement and then returned to camp.

Movement Map (Import NotePlus Site Map)

movement map.pdf

Deterrent Count	5 / 400 (1.25%)
Truck	4 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	1 From 0 to 40
Specify	Clapping and yelling
End of Environment Call-out	22.05.2023 22:00 MDT

Final Location of Wildlife

in North Inlet following airport road.

Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	On

Signature

Gordon Cumming
23.05.2023 14:19 MDT

Media summary

Photo 1

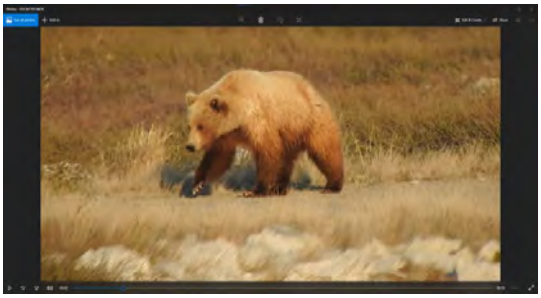


Photo 2

Photo 3

File summary

movement map.pdf

Wildlife Report - 2021

Grizzly-2023-05-25-Lakeshore

Complete

Score	**2.74%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly-2023-05-25-Lakeshore
Document No.	WildlifeReport000249
	25.05.2023

Audit	2.74%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

2.5%

Enter Initial Time of Wildlife Sighting 25.05.2023 14:00 PDT

Department/Individual Who Reported Wildlife:

Site services

Environment at Call-out Location 25.05.2023 14:15 PDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and cub, blonde with darker underside, 1 year cub, medium (cub= 50lbs, sow= 200lbs)

Photo (If Possible):

Chronological Events

15:00 got a bear call for a sow and cub from site services
15:10 arrived at lakeshore and got eyes on bears
15:15 used CF pen bear banger
15:30 determined they were in a safe location near winter road dispatch area
15:50 another call was made about the same pair at metcon where we used the truck as a deterrent with revving the engine and horn
16:00 used the truck to move bears, where they ended up at the PKC
16:15 2 shotgun explosives were used at the PKC to move them to a safe area, and they traveled down to the south haul road
16:25 bears moved to south haul road near the PKC wall and we allowed the bears to cross the south haul road
16:30 bears crossed the road on their own and we monitored them in the shallow bay/veg plot area and determined they were in a safe area

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

2.5%

Truck **6**
From 0 to 40

Air Horn	**0** From 0 to 40
C/F Bear Banger	**2** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**2** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40
Specify	
End of Environment Call-out	25.05.2023 15:30 PDT

Final Location of Wildlife

Shallow bay/Veg plots

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Danielle Bowler
25.05.2023 16:44 PDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly-2023-05-30-C portal

Complete

Score	**2.99%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly-2023-05-30-C portal
Document No.	WildlifeReport000251
	31.05.2023

Audit	2.99%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

2.75%

Enter Initial Time of Wildlife Sighting 30.05.2023 16:40 PDT

Department/Individual Who Reported Wildlife:

Underground, loader at C portal

Environment at Call-out Location 30.05.2023 16:55 PDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Blonde Female Grizzly and year-old cub. Same sow and cub from previous year, been on site for many years.

Photo (If Possible):

Chronological Events

5:40pm - Got the call from 905 loader of a sow and cub near C-portal.
5:50pm - arrived at D1 laydown area and the backfill area to search.
5:55pm- got eyes on the bears near the green space (pond 13) by the C-portal next to the south haul road.
5:55-6:10pm- used truck as deterrent to move bears towards the shallow bay/veg plot area.
6:10pm - used 2 C/F bear bangers to deter them from the south haul road.
6:16pm - call ended as bears were grazing in shallow bay/veg plot area, monitored for a couple minutes to ensure they would stay in the area and were safe.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

2.75%

Truck	**9** From 0 to 40
Air Horn	**0** From 0 to 40

C/F Bear Banger	**2** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40
Specify	
End of Environment Call-out	30.05.2023 17:16 PDT

Final Location of Wildlife

Shallow bay/veg plot

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Dani Bowler
31.05.2023 06:13 PDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly-2023-06-02-ERT training grounds

Complete

Score	**0.75%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly-2023-06-02-ERT training grounds
Document No.	WildlifeReport000256
	03.06.2023

Audit	0.75%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

0.5%

Enter Initial Time of Wildlife Sighting	03.06.2023 16:50 PDT

Department/Individual Who Reported Wildlife:

ERT

Environment at Call-out Location	03.06.2023 16:55 PDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and three cubs, light brown.

Photo (If Possible):

Photo 1

Chronological Events

17:50 - Bear call
17:55 - Environment near area, and arrived on scene
18:00 - Bears entered south haul road intersection, Environment uses yelling/horn to guide them back into safe area
18:05 - After monitoring for 5 minutes bears were in safe location to leave them

Movement Map (Import NotePlus Site Map)

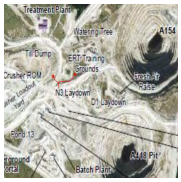


Photo 2

Deterrent Count

0.5%

Truck	**0** From 0 to 40

Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**2** From 0 to 40
Specify	Yelling, truck horn
End of Environment Call-out	03.06.2023 17:10 PDT

Final Location of Wildlife

North Country Till Pile

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Dylan Price
04.06.2023 06:34 PDT

Media summary

Photo 1

Photo 2

Wildlife Report - 2021

Grizzly - 2023-06-06 - Backfill

Complete

Score	**0.5%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-06-06 - Backfill
Document No.	WildlifeReport000257
	06.06.2023

Audit	0.5%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

0.25%

Enter Initial Time of Wildlife Sighting 06.06.2023 14:40 MDT

Department/Individual Who Reported Wildlife:

Process Operations

Environment at Call-out Location 06.06.2023 14:50 MDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

1 sow and 3 cubs, same as has been on site frequently

Photo (If Possible):

Chronological Events

14:50 Environment arrived on scene, gained visual on the bears
14:55 ENV used truck horn to guide animals off of road
14:56 Bears moved to Pond 1, then laid down to sleep in the vegetation.
15:01 Environment left the bears in Pond 1. End of callout.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

0.25%

Truck	**0** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40

12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**1** From 0 to 40
Specify	Truck horn
End of Environment Call-out	06.06.2023 15:01 MDT

Final Location of Wildlife

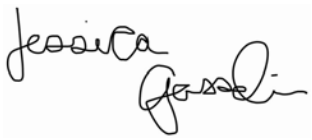
Pond1

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature



Jessica Gosselin
18.06.2023 16:17 MDT

Media summary

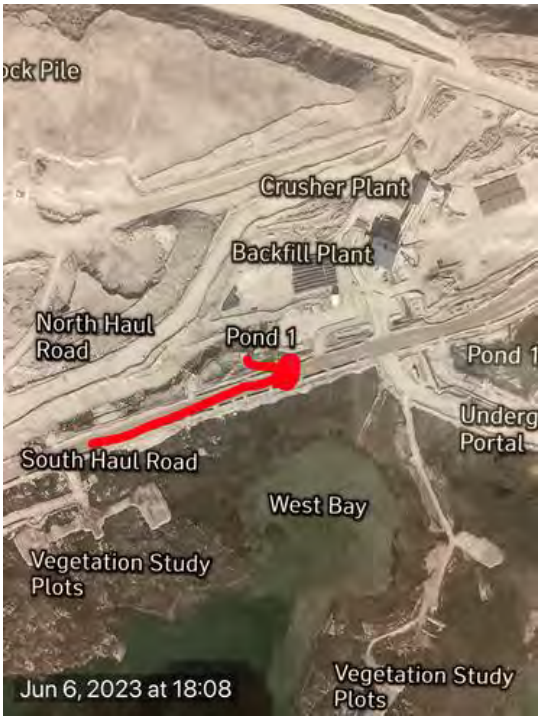


Photo 1

Wildlife Report - 2021

Grizzly-2023-06-07-Pond 13 **Complete**

Score	**1.25%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly-2023-06-07-Pond 13
Document No.	WildlifeReport000258
	08.06.2023

Audit	1.25%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1%

Enter Initial Time of Wildlife Sighting 07.06.2023 22:50 MDT

Department/Individual Who Reported Wildlife:

Underground

Environment at Call-out Location 07.06.2023 23:10 MDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Grizzly Sow, Blonde, medium-large, three cubs in second year. Healthy looking.

Photo (If Possible):

Chronological Events

22:50 Environment (Env) called out - Bears reported on south haul road heading towards c portal
23:10 Env on scene with eyes on bears in Pond 13 area
23:10-23:30 Bears grazing and slowly moving towards UG portal/Mine Dry
23:35 Env uses truck and horn to guide bears back towards the vegetation plots/pond 1 area
23:40 bears in pond 1
23:40-23:50 Env monitors bears, bears grazing/lying down
23:55 Env off scene

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

1%

Truck	**2** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40

C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**2** From 0 to 40
Specify	Truck Horn
End of Environment Call-out	07.06.2023 00:00 MDT

Final Location of Wildlife

Pond 1

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Dylan Price
08.06.2023 07:37 MDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly bear - 2023-06-10 - Scap

Complete

Score	**1.25%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly bear - 2023-06-10 - Scap
Document No.	WildlifeReport000259
	10.06.2023

Audit	1.25%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1%

Enter Initial Time of Wildlife Sighting 10.06.2023 13:51 MDT

Department/Individual Who Reported Wildlife:

Site Services

Environment at Call-out Location 10.06.2023 13:50 MDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

1 sow and 3 cubs

Photo (If Possible):

Photo 1

June 10 Grizzly bear.pdf

Chronological Events

1:50 Environment was called to SCAP Fabrication Shop (SCAP) for Sow and 3 cubs
1:51 Environment was in the area, spotted Bears in SCAP warehouse area going SE.
1:53 Underground called in bears walking past UG warehouse
1:55 Used truck horn to deter bears from A418 dike access road to veg plots
1:57-2:02 Watched bears cross south haul road to Pond 1/Monitored bears to make sure they stayed stationary in Pond 1 - cubs feeding on Sow

Movement Map (Import NotePlus Site Map)

Photo 2

Deterrent Count

1%

Truck	**1** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**3** From 0 to 40
Specify	Truck horn
End of Environment Call-out	10.06.2023 14:10 MDT

Final Location of Wildlife

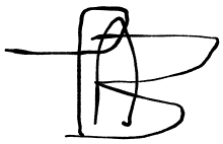
Pond 1

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature



Tina Burke
10.06.2023 17:59 MDT

Media summary

Photo 1

Photo 2

[June 10 Grizzly bear.pdf]

Wildlife Report - 2021

Grizzly - 2023-06-12 - Crusher ROM to Pond 1

Complete

Score	**1.25%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-06-12 - Crusher ROM to Pond 1
Document No.	WildlifeReport000260
	13.06.2023

Audit	1.25%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1%

Enter Initial Time of Wildlife Sighting	12.06.2023 08:45 MDT

Department/Individual Who Reported Wildlife:

Crusher ROM operator

Environment at Call-out Location	13.06.2023 09:05 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Sow and three cubs

Photo (If Possible):

Chronological Events

08:45 - Crusher ROM Operator notifies Environment (ENV) personnel about sow and three cubs at the Crusher ROM.
09:00 - ENV arrive at the Crusher ROM and is shortly updated by the Crusher ROM Operator that the sow and and three cubs are at the Backfill Yard.
09:05 - ENV observes the sow and three cubs crossing the North Haul Road from the Backfill Yard to the Airport Road.
09:10 - ENV uses the LIGHT VEHICLE HORN to guide the sow and three cubs towards the North Inlet Water Treatment Plant (NIWTP).
09:15 - Sow and three cubs make their way to the tundra patch west of the NIWTP.
09:18 - ENV confirmed sow and three cubs continued to graze at the tundra patch west of the NIWTP. ENV left the scene.

10:00 - ENV is notified by Backfill Operator that sow and three cubs are in the Backfill Yard.
10:05 - ENV arrived in the area and used their LIGHT VEHICLE HORN to guide the sow and three cubs into the vegetation patch area surrounding Pond 1.
10:10 - ENV observed the sow and three cubs grazing in the vegetation patch area surrounding Pond 1 and then left the scene.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

1%

Truck	**2** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**2** From 0 to 40
Specify	TRUCK HORN
End of Environment Call-out	12.06.2023 09:18 MDT

Final Location of Wildlife

Pond 1

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

13.06.2023 09:26 MDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly-2023-06-15-CrusherROM

Complete

Score	**0.75%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly-2023-06-15-CrusherROM
Document No.	WildlifeReport000262
	16.06.2023

Audit	0.75%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

0.5%

Enter Initial Time of Wildlife Sighting	15.06.2023 08:30 MDT

Department/Individual Who Reported Wildlife:

8:30- Call from Backfill about grizzly sow and 3 cubs

Environment at Call-out Location	15.06.2023 08:30 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

4, blonde, adult with 3 cubs likely 2 years old, medium sow, small cubs

Photo (If Possible):


Photo 1


Photo 2

Chronological Events

8:30- received call from backfill
8:44- Environment arrived on scene and discovered sow and 3 cubs digging near seacans by the backfill
8:45- tried to deter bears using truck and voice to shallow bay
8:46- bears went up the hill towards the north country rockpile and crusher ROM
8:53- got another call from crusher ROM that bears were in their area
8:55- got eyes on the bears and they made their way across the north haul road heading north towards the airport
9:00- waited in the area for a few minutes to ensure they were not going to return
9:05- checked the airport road and surrounding areas but could not relocate and no new calls were received

Communicated with Backfill that bears were digging at something in their area. Confirmed cleanup of the ground on June 17. Photo of cleaned area attached.

Movement Map (Import NotePlus Site Map)

Photo 3

Deterrent Count

0.5%

Truck	**1** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**1** From 0 to 40
Specify	Yelled from Vehicle
End of Environment Call-out	15.06.2023 09:00 MDT

Final Location of Wildlife

near north country rockpile headed north west

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Danielle Bowler

16.06.2023 18:16 MDT

Media summary

Photo 1

Photo 2

Photo 3

Wildlife Report - 2021

Grizzly-2023-06-15-SCAP

Complete

Score	**1.25%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly-2023-06-15-SCAP
Document No.	WildlifeReport000263
	17.06.2023

Audit	1.25%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1%

Enter Initial Time of Wildlife Sighting	15.06.2023 13:30 MDT

Department/Individual Who Reported Wildlife:

Batch plant

Environment at Call-out Location	15.06.2023 13:40 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

1, blonde, medium-large

Photo (If Possible):

from an earlier sighting that day

Photo 1

Chronological Events

13:30- Environment received the call of a single grizzly walking around batch plant area
13:50- spotted the bear near batch plant and used truck to deter north
13:55- lost the bear in SCAP warehouse area but received several calls about it
14:00- received another call that it was near the backfill area and once arrived could not get eyes on it
14:10- searched for the bear in backfill, south haul road area and could not find
14:15- received a final call that it was on the north haul road near the backfill area, again once arrived were told it went over the bank towards the till dump
14:20- searched the surrounding area to airport road to get eyes on the bear but could not locate and there were no further calls. End of call out.

Movement Map (Import NotePlus Site Map)

Photo 2

Deterrent Count

1%

Truck	**4** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40
Specify	
End of Environment Call-out	15.06.2023 14:20 MDT

Final Location of Wildlife

Near crusher ROM headed towards the till dump

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Danielle Bowler
17.06.2023 07:20 MDT

Media summary

Photo 1

Photo 2

Wildlife Report - 2021

Grizzly - 2023-06-19 - Pond 1 to Shallow Bay

Complete

Score	**1.25%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-06-19 - Pond 1 to Shallow Bay
Document No.	WildlifeReport000264
	19.06.2023

Audit	1.25%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1%

Enter Initial Time of Wildlife Sighting	19.06.2023 08:00 MDT

Department/Individual Who Reported Wildlife:

Site Services

Environment at Call-out Location	19.06.2023 08:15 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single large and dark-furred grizzly bear. Appeared to be an adult.

Photo (If Possible):

Chronological Events

08:00 - Environment (ENV) receives a notification about a grizzly bear in the shallow bay area chasing caribou.
08:15 - ENV arrives on scene and find single large grizzly bear near Pond 1
08:20 - Grizzly bear notices ENV TRUCK and starts to climb the rock pile towards the Landfill/North Haul Road.
08:25 - ENV moved towards the Shallow Bay and grizzly bear moved down from halfway up the rock pile towards the Shallow Bay.
08:40 - Grizzly bear grazing around the shallow bay and slowly making their way towards the Truck Shop area
9:00 - Grizzly bear close to the Truck Shop area, ENV starts to CLAP and use VOICE as deterrents.
09:10 - Grizzly continues along the Shallow Bay shore towards main camp.
09:15 - ENV uses one BEAR BANGER and grizzly bear immediately turns around, lays down on a rock, and begins to nap/rest.
09:25 - ENV observes the bear as it continues to rest. ENV leaves the scene.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

1%

Truck	**1** From 0 to 40

Air Horn	**0** From 0 to 40
C/F Bear Banger	**1** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**2** From 0 to 40
Specify	CLAP, VOICE
End of Environment Call-out	19.06.2023 09:25 MDT

Final Location of Wildlife

Shallow Bay

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Anton Jitnikovitch
19.06.2023 10:00 MDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly - 2023-06-20 - Pond 1 to Veg. Patch near ERT Training Grounds

Complete

Score	**4.24%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-06-20 - Pond 1 to Veg. Patch near ERT Training Grounds
Document No.	WildlifeReport000265
	21.06.2023

Audit	4.24%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

4%

Enter Initial Time of Wildlife Sighting 20.06.2023 18:15 MDT

Department/Individual Who Reported Wildlife:

Surface Operator

Environment at Call-out Location 20.06.2023 18:25 MDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly - most likely not a cub due to moderate size. Color is light brown.

Photo (If Possible):

Chronological Events

18:15 - Environment (ENV) is notified of a grizzly bear near Pond 5 by a surface operator.
18:25 - ENV on the scene and locates grizzly at Pond 5.
19:15 - Grizzly has walked to Pond 1 near the Backfill, ENV begins deterrent actions. ENV uses truck HORN, CLAPS, and uses VOICE. Grizzly has minimal response.
19:20 - ENV releases three (3) BEAR BANGERS. Grizzly has minimal response.
19:20 - Grizzly walks North along pipeline adjacent to the Backfill and the South Haul Road towards the Intersection of the North/South Haul Roads. ENV is CLAPPING and uses VOICE consistently. Grizzly continues to have minimal response.
19:25 - ENV PUMPS ACTION of shotgun and the grizzly has minimal response and continues to alternate between slow movement and grazing.
19:50 - Grizzly stops moving between two berms and grazes on a small vegetation patch. ENV releases three (3) BEAR BANGERS. Grizzly has minimal reaction.
20:00 - Grizzly begins to slowly move north until it crosses the North/South Haul Road intersection. ENV PUMPS ACTION of shotgun - grizzly has minimal response.
20:05 - Grizzly reaches a till pile area immediately northwest of the North/South Haul Road intersection and grazes in a small vegetation patch.
20:15 - ENV shoots one (1) RUBBER BULLET and the grizzly has a minimal response and continues to graze in the same area.
20:20 - ENV shoots an additional one (1) RUBBER BULLET and the grizzly begins to move across the road towards the vegetation patch near the ERT Training Grounds, as it is moving across the road, ENV repositions the truck and uses the HORN to guide the grizzly to the vegetation patch near the ERT Training Grounds.
20:21 - Bear is in the vegetation patch near the ERT Training Grounds. ENV begins to observe the grizzly.
20:30 - ENV leaves the scene.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

4%

Truck	**2** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**6** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**2** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**6** From 0 to 40
Specify	CLAP (2), VOICE(2), PUMP ACTION(2)
End of Environment Call-out	21.06.2023 20:20 MDT

Final Location of Wildlife

Vegetation Patch near ERT Training Grounds

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Anton Jitnikovitch
21.06.2023 09:29 MDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly - 2023-07-01 - N17 Laydown

Complete

Score	**1.75%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-07-01 - N17 Laydown
Document No.	WildlifeReport000266
	01.07.2023

Audit	1.75%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1.5%

Enter Initial Time of Wildlife Sighting 01.07.2023 07:55 MDT

Department/Individual Who Reported Wildlife:

RTX

Environment at Call-out Location 01.07.2023 08:07 MDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single cub grizzly bear

Photo (If Possible):

Chronological Events

0755- Environment received a call from RTX there was a small grizzly where RTX were to be slinging using a helicopter at N17 Laydown.
0807- Crew arrived in N17 entrance and located bear
0810- Used truck and airhorn to try to deter from area, but bear was not scared off at first. Used horn another time and bear ran down berm.
0816- Environment monitored bear.
0830 - Helicopter brought in a sling, bear was lost after that.
0845- End call

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

1.5%

Truck	**2** From 0 to 40
Air Horn	**3** From 0 to 40
C/F Bear Banger	**0**

	From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**1** From 0 to 40
Other	**0** From 0 to 40
Specify	
End of Environment Call-out	01.07.2023 08:45 MDT
Final Location of Wildlife	
N17 laydown	

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Tina Burke
02.07.2023 06:23 MDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly Bear - 2023-07-04 - Waste Transfer Area

Complete

Score	**1.25%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly Bear - 2023-07-04 - Waste Transfer Area
Document No.	WildlifeReport000267
	05.07.2023

Audit	1.25%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1%

Enter Initial Time of Wildlife Sighting	04.07.2023 23:10 MDT

Department/Individual Who Reported Wildlife:

Surface Operator

Environment at Call-out Location	04.07.2023 23:25 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly bear cub

Photo (If Possible):


Photo 1


Photo 2


Photo 3

Chronological Events

16:40 - Environment (ENV) got call about a small bear circling around the waste transfer gates.
16:50 - ENV arrived on scene
16:55 - Bear was trying to climb up fence so ENV used truck horn and was not very effective so used air horn twice and bear ran away from fence.
17:08 - ENV monitored bear
17:28 - ENV lost sight of bear and left area
***
23:10 Environment (ENV) was notified of a single grizzly cub near the entrance of the Waste Transfer Area (WTA).
23:25 ENV arrived on scene and located the grizzly cub and observed.
23:35 ENV used LIGHT VEHICLE HORN to encourage grizzly cub to move away from the WTA fence and towards the tundra patch.
23:45 Grizzly cub moved to mixed rocky and tundra patch area and began to graze and slowly walk around the area. ENV observed.
23:50 Grizzly cub laid down on a rock and began to rest. ENV observed and then left the scene.

Movement Map (Import NotePlus Site Map)

Photo 4

Deterrent Count

1%

Truck	**2** From 0 to 40
Air Horn	**2** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40

Specify

End of Environment Call-out 05.07.2023 00:05 MDT

Final Location of Wildlife

Mixed rock and vegetation patch area near the Waste Transfer Area

Closure & Sign-off

100%

Wildlife Report Complete On

Signature

Anton Jitnikovitch

09.07.2023 07:07 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Wildlife Report - 2021

Grizzly - 2023-07-11 - NIWTP Area

Complete

Score	1%	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-07-11 - NIWTP Area
Document No.	WildlifeReport000272
	12.07.2023

Audit	1%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

0.75%

Enter Initial Time of Wildlife Sighting	11.07.2023 22:00 MDT

Department/Individual Who Reported Wildlife:

Site Services

Environment at Call-out Location	11.07.2023 22:15 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single young grizzly cub.

Photo (If Possible):

Photo 1

Photo 2

Chronological Events

22:05 - Site Services personnel reported a single Grizzly spotted near the North Inlet Water Treatment Plant (NIWTP). No further location or behaviour information was reported. Security alerted Environment (ENV).

22:25 - ENV arrives on scene and observes a single young Grizzly in the tundra patch to the east of the North Inlet Water Treatment Plant. Bear was actively digging into the tundra vegetation in the area. ENV monitored from approximately 100 metres away and alerted the Water Treatment Plant that the bear was nearby.

22:45 - Grizzly quickly began moving towards the Water Treatment Plant where there were personnel working (indoors). ENV used two pen-fired BANGERS to deter the bear from moving further towards the area. Bear turned south and crossed the Airport Road towards the North Country Till Pile.

22:50 - Grizzly ran behind a large berm and out of sight of ENV. ENV monitored the area and communicated with all departments in area that the bear could be moving towards them but was unable to establish visual confirmation that it was still behind the berm.

23:15 - After monitoring immediate and surrounding areas, ENV was able to visually confirm that the bear was moving west behind the berm along the base of the North Country Till Pile. ENV continued monitoring as bear continued west and away from mine infrastructure.

23:30 - After heading west a fair distance, bear turned around and headed east, close to Airport Road. ENV used the TRUCK HORN to continue deterring it from the mine site and back in a western direction towards the airport and open tundra.

23:55 - ENV continued monitoring the bear as it slowly moved west along base of till pile. Bear eventually got settled on a thick patch of vegetation and stopped walking. ENV again alerted personnel in the area and left the scene.

Movement Map (Import NotePlus Site Map)

Photo 3

Deterrent Count

0.75%

Truck	**1** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**2** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40
Specify	
End of Environment Call-out	11.07.2023 23:55 MDT
Final Location of Wildlife	

Tundra directly south of Airport Road approximately 1 kilometer west of North Inlet Water Treatment Plant.

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Justin Macek
12.07.2023 18:10 MDT

Media summary

Photo 1

Photo 2

Photo 3

Wildlife Report - 2021

Grizzly - 2023-07-17 - Dump 7 to NIWTP

Complete

Score	Flagged items	Actions
2 / 401 (0.5%)	**0**	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-07-17 - Dump 7 to NIWTP
Document No.	WildlifeReport000275
	19.07.2023

Audit	2 / 401 (0.5%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1 / 400 (0.25%)

Enter Initial Time of Wildlife Sighting	17.07.2023 19:45 MDT

Department/Individual Who Reported Wildlife:

Surface Operations

Environment at Call-out Location	17.07.2023 20:05 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly, likely a young adult.

Photo (If Possible):

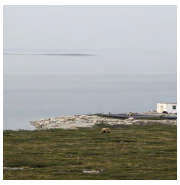


Photo 1

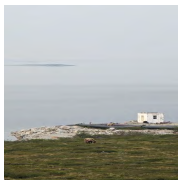


Photo 2

Chronological Events

19:45 - Surface Ops personnel working in the Dump 7 area west of the A154 pit reported to Environment (ENV) that a single grizzly spotted walking west through their work area. ENV announced the bears location to all personnel and left for the scene.

20:05 - ENV arrived to Dump 7 area and was advised by personnel there that the bear had gone through the work area and continued west towards the Watering Tree and boat dock areas.

20:10 - ENV made visual contact with the bear on the tundra near the boat dock area, approximately 15m from lake shore.

20:24 - Bear began moving south west towards North Inlet Water Treatment Plant (NIWTP). NIWTP operator was alerted to the bears presence. ENV used BEAR BANGER to deter the bear from going close to the building, at which point the bear moved over a pipeline and ended up on tundra north east of NIWTP.

20:30 - ENV repositioned to northeast corner of NIWTP area overlooking tundra to re-establish visual contact with the bear. Bear stayed in area, digging around on tundra. ENV continued monitoring from a distance of approximately 150 meters.

21:00 - ENV continued monitoring bear for approximately 30 minutes to ensure it did not attempt to move towards NIWTP area again. Bear remained in area a comfortable distance away from site infrastructure during this time. NIWTP operators were once again advised of the bear's presence

and final location and ENV left scene.

Movement Map (Import NotePlus Site Map)

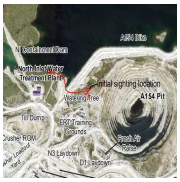


Photo 3

Deterrent Count

1 / 400 (0.25%)

Truck	**0** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**1** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40

Specify

End of Environment Call-out	17.07.2023 21:00 MDT

Final Location of Wildlife

Tundra to northeast of NIWTP

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Justin Macek
19.07.2023 10:52 MDT

Media summary

Photo 1

Photo 2

Photo 3

Wildlife Report - 2021

Grizzly - 2023-07-19 - Shallow Bays

Complete

Score	**1.75%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-07-19 - Shallow Bays
Document No.	WildlifeReport000276
	19.07.2023

Audit	1.75%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1.5%

Enter Initial Time of Wildlife Sighting	19.07.2023 16:30 MDT

Department/Individual Who Reported Wildlife:

Backfill Maintenance

Environment at Call-out Location	19.07.2023 16:40 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly, likely young adult. Dark blonde/brownish fur

Photo (If Possible):


Photo 1


Photo 2


Photo 3

Chronological Events

16:30 - Environment (ENV) received a call from Backfill Maintenance advising that a single grizzly had been spotted running through the Backfill loadout area.

16:40 - ENV arrived on scene but was unable to immediately locate the bear. ENV toured the immediate area for approximately 15 minutes but were still unable to achieve visual contact with it.

16:55 - ENV receives another call advising that the bear has been spotted on the South Haul Road near the intersection with the 418 Dike Access road. ENV arrives on scene to find the bear on the haul road attempting to move back west towards the Backfill plant.

17:00 - ENV uses TRUCK to deter the bear from moving back towards backfill plant. Bear turns around and moves into the shallow bays area. ENV monitors from the road, as the bear initially begins walking away from the haul road towards the lake before turning west again towards the South Haul road.

17:15 - Bear climbs rock wall towards the haul road and exits Shallow Bays area. Bear walks north through the intersection northbound and exits the road heading towards Pond 13.

17:18 - Bear walks around a trailer south of Pond 13 and exits the other side, once again moving towards the haul road. ENV used TRUCK to deter the animal from the area and the bear began to slowly move across the road. ENV then used two (2) BEAR BANGERS to deter the animal back towards the shallow bay area.

17:30 - After repeated attempts to scale the rock wall and head back towards the south haul road, ENV used two (2) 12 GAUGE BANGERS to deter the bear further into the shallow bay area. Bear headed down towards the water and laid down for a short period of time while ENV monitored.

17:50 - Bear once again climbed up onto the South Haul Road. ENV attempted to deter this movement but were unsuccessful, as the bear managed to cross the South Haul Road heading west towards Pond 1 and the Backfill Plant. All personnel in area were advised that the bear was nearby.

18:00 - Bear went into Pond 1 and swam across the pond towards the base of the North Haul Road, eventually moving into an area of very tall grass and lying down. ENV lost visual contact with the bear at this time.

18:40 - ENV monitored the area for an extended period of time while the bear remained bedded down in the tall grass area. ENV once again advised area personnel of the bears presence and left the scene.

Movement Map (Import NotePlus Site Map)

Photo 4

Deterrent Count

1.5%

Truck	**2** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**2** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**2** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40

Other	**0** From 0 to 40
Specify	
End of Environment Call-out	19.07.2023 18:40 MDT
Final Location of Wildlife	

Pond 1 Area, south of Backfill Plant

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Justin Macek
19.07.2023 20:41 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Wildlife Report - 2021

Grizzly-2023-07-20-Truck Shop

Complete

Score	**15 / 401 (3.74%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly-2023-07-20-Truck Shop
Document No.	WildlifeReport000277
	25.07.2023

Audit	15 / 401 (3.74%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

14 / 400 (3.5%)

Enter Initial Time of Wildlife Sighting	20.07.2023 06:08 MDT

Department/Individual Who Reported Wildlife:

Truck shop

Environment at Call-out Location	20.07.2023 05:45 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly likely young adult- medium size. Blonde shedding with darker underfur.

Photo (If Possible):

Chronological Events

5:45 Environment (ENV) received a call from safety/truck shop reporting a single grizzly moving south along the south haul road.

6:00 ENV arrived at the south haul road around 6:00 in order to find the bear. ENV drove up and down the south haul road and checked the ponds in search of the bear, but was unsuccessful.

6:20 ENV located the bear in the tundra near pond 10 and monitored for a few minutes to ensure it would not enter an undesirable area.

6:45 Bear moved onto south haul road, ENV attempted to deter back to tundra using the TRUCK, but the bear moved up towards the PKC/NCRP. ENV followed the bear around the PKC attempting to deter away from the PKC with the TRUCK and VOICE, but the bear entered the PKC.

7:00 ENV drove around to reach the PKC road and located the bear heading west across the PKC.

7:10 Single adult grizzly found a grizzly cub near the LV entrance to PKC and proceeded to chase it south off the PKC. The adult gave up at the edge of PKC and circled back to the PKC.

7:15 ENV again used the TRUCK to deter the bear off the PKC to a safer location. ENV monitored as the bear continued west to the edge of the PKC.

7:30 The bear descended the PKC on the west side towards the wind farm.

7:45 ENV located the bear in the tundra 100m from the AN road and pond 7 and monitored for a couple minutes. Call ended.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

14 / 400 (3.5%)

Truck	**14** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40
Specify	
End of Environment Call-out	20.07.2023 07:45 MDT

Final Location of Wildlife

100m from AN road near pond 7.

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Dani Bowler

25.07.2023 08:38 MDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly - 2023-07-22 - Airport Area

Complete

Score	**0.75%**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-07-22 - Airport Area
Document No.	WildlifeReport000279
	24.07.2023

Audit	0.75%
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

0.5%

Enter Initial Time of Wildlife Sighting 22.07.2023 08:45 MDT

Department/Individual Who Reported Wildlife:

Airport

Environment at Call-out Location 22.07.2023 09:00 MDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single young grizzly cub

Photo (If Possible):

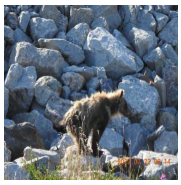


Photo 1


Photo 2

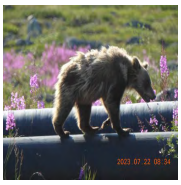


Photo 3

Chronological Events

08:45 Airport reported a single Grizzly spotted near the Airport area. No further information or location was reported.

09:00 ENV arrives on scene and observes a single young Grizzly cub near the airport warehouse. Bear was sniffing around building.

09:10 ENV used the TRUCK HORN to deterred it from the airport warehouse and bear moved toward the open tundra. ENV continued to monitor the bear until it moved away from the airport.

09:40 ENV left bear in the open tundra. ENV alerted personnel in the area and left the scene.

Movement Map (Import NotePlus Site Map)


Photo 4

Deterrent Count

0.5%

Truck	**2** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40
Specify	
End of Environment Call-out	22.07.2023 10:00 MDT
Final Location of Wildlife	

Tundra by the airport road

Closure & Sign-off

100%

Wildlife Report Complete	On

Signature

Amber Powder
24.07.2023 18:16 MDT

Media summary

Photo 1

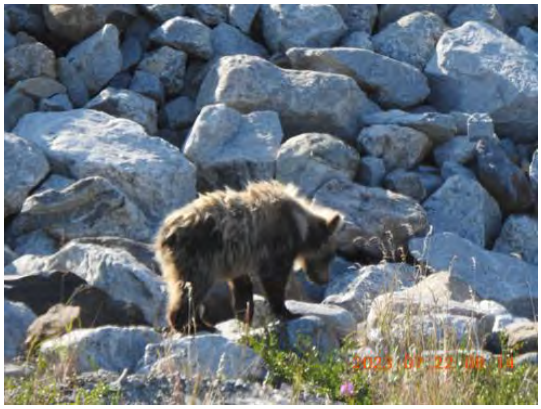


Photo 2

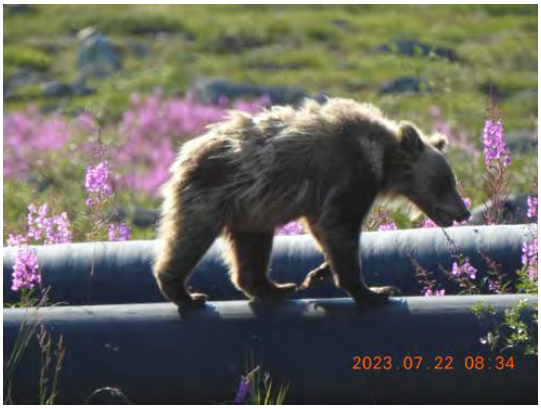


Photo 3

Photo 4

Wildlife Report - 2021

Grizzly - 2023-08-03 - AN Road

Complete

Score	**3 / 401 (0.75%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-08-03 - AN Road
Document No.	WildlifeReport000281
	04.08.2023

Audit	3 / 401 (0.75%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

2 / 400 (0.5%)

Enter Initial Time of Wildlife Sighting 03.08.2023 14:45 MDT

Department/Individual Who Reported Wildlife:

Surface Operations

Environment at Call-out Location 03.08.2023 15:00 MDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single grizzly yearling, mix of brown and blonde fur

Photo (If Possible):

Photo 1

Chronological Events

14:45 - Single grizzly yearling called in just off of AN road, south of waste transfer.
15:00 - Environment personnel on scene. On tundra approximately 10m from AN road. Environment personnel SHOUTED and clapped loudly. Yearling immediately responded by heading east away from the road.
15:10 - Environment personnel remained in area to ensure bear didn't head back towards active roadways and left the scene.

Movement Map (Import NotePlus Site Map)

Photo 2

Deterrent Count

2 / 400 (0.5%)

Truck **0**
From 0 to 40

Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**2** From 0 to 40
Specify	Clapping, shouting
End of Environment Call-out	03.08.2023 15:10 MDT

Final Location of Wildlife

Tundra/Rock face near Pond 12, south of Waste Transfer

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Justin Macek
04.08.2023 10:21 MDT

Media summary

Photo 1

Photo 2

Wildlife Report - 2021

Grizzly Cub -2023-08-14 - Pond 4

Complete

Score	**20 / 401 (4.99%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly Cub -2023-08-14 - Pond 4
Document No.	WildlifeReport000282
	14.08.2023

Audit	20 / 401 (4.99%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

19 / 400 (4.75%)

Enter Initial Time of Wildlife Sighting 14.08.2023 11:30 MDT

Department/Individual Who Reported Wildlife:

WSP

Environment at Call-out Location 14.08.2023 11:00 MDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

1, blonde, cub, small

Photo (If Possible):

Chronological Events

11:15 Received call from WSP for a pickup at bay 4 as the bear cub was nearby.

11:25 ENV arrives on scene to pick up WSP crew. Food bags, equipment, and fuel were left near the boat on the shore, so crew made a plan of how to retrieve the items.

11:35 ENV used truck, horn, and voice as a deterrent to move the bear away from the boat so that items could be retrieved safely. Bear did not move.

11:40 ENV used 2 C/F pen bangers to try to deter the bear, but again, the bear barely reacted and stayed in the same location.

11:45 WSP retrieved their equipment and attractants while ENV created a barrier with the truck between the boat and the bear.

12:05 Left bear at base of NCRP near pond 4.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

19 / 400 (4.75%)

Truck	**8** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**2** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**9** From 0 to 40
Specify	Voice and truck horn
End of Environment Call-out	14.08.2023 12:05 MDT

Final Location of Wildlife

Near pond 4 on the base of NCRP

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Dani Bowler
14.08.2023 18:08 MDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly-2023-08-26-Backfill

Complete

Score	**5 / 401 (1.25%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly-2023-08-26-Backfill
Document No.	WildlifeReport000288
	27.08.2023

Audit	5 / 401 (1.25%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

4 / 400 (1%)

Enter Initial Time of Wildlife Sighting	26.08.2023 20:00 MDT

Department/Individual Who Reported Wildlife:

Running Repair called in Grizzly at C- Portal Undeground @ 8:00PM

Environment at Call-out Location	26.08.2023 20:20 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Young male Grizzly, really dark brown paws, with light brown on the back.

Photo (If Possible):

Chronological Events

8:00PM- Running repair called in grizzly at underground C portal.
8:20PM- Environment drives out and contacts running repair, and they point out the grizzly in the ditch by backfill. Environment made announcement.
8:20PM-8:45PM - Environment used the truck to block the bear from entering Backfill yard and herded it into pond 1 south of Backfill by revving the engine and slowly following it along the road.
8:50PM - Environment used 2x 12gauge shell crackers to deter bear away from Backfill vicinity, bear began climbing the slope towards the North Haul Road.
9:15PM - Environment intercepted the bear on the North haul road and persuaded the grizzly to head to the NCRP by slowly following in the truck. The bear headed north west along side NCRP. Environment lost sight of the bear.
9:20PM- made final all call.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

4 / 400 (1%)

Truck	**2** From 0 to 40

used truck to move out of Backfill , then used truck to move off North haul road on to NCRP

Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**2** From 0 to 40

Used in pond 1

12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40

Specify

End of Environment Call-out	26.08.2023 21:20 MDT

Final Location of Wildlife

NCRP headed North West.

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Brennan Debassige
27.08.2023 10:27 MDT

Media summary

Photo 1

Wildlife Report - 2021

Grizzly - 2023-08-31 - A418 Area

Complete

Score	**3 / 401 (0.75%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023-08-31 - A418 Area
Document No.	WildlifeReport000290
	31.08.2023

Audit	3 / 401 (0.75%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

2 / 400 (0.5%)

Enter Initial Time of Wildlife Sighting	31.08.2023 13:20 MDT

Department/Individual Who Reported Wildlife:

Site Services

Environment at Call-out Location	31.08.2023 13:30 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Single yearling Grizzly, blonde and brown in colour.

Photo (If Possible):


Photo 1


Photo 2


Photo 3

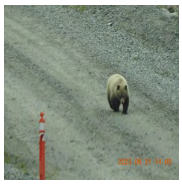


Photo 4


Photo 5


Photo 6


Photo 7

Chronological Events

13:20 - Site Services calls in bear at the South Haul Road/North Haul Road intersection, near ERT training grounds.
13:25 - ERT calls Environment (ENV), bear has been spotted heading east towards A154/A418 pit areas.
13:35 - ENV arrives on scene. Single yearling Grizzly bear spotted near the top of the A418 access ramp/chicane area.
13:43 - Bear grazing along base of rock pile. Bear notices ENV truck and begins moving southwest towards A418 Dike/North Winter Road Approach area.
14:00 - Bear climbs over small berm onto upper bench of A418 pit. ENV repositions to southeast to maintain visual contact.
14:05 - Bear heads towards ENVs location on south side of A418 pit. Attempting to deter the bear from heading further down towards the A418 pit, ENV uses TRUCK HORN. Bear heads towards berm to the southwest and climbs up and over, heading south again towards A418 Dike.
14:15 - Bear crosses A418 dike onto tundra. Continues to graze in area while ENV monitors from a distance.

14:40 - Bear remains in area. ENV leaves scene.

Movement Map (Import NotePlus Site Map)

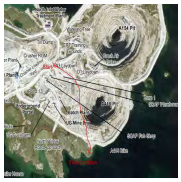


Photo 8

Deterrent Count

2 / 400 (0.5%)

Truck	**1** From 0 to 40
Air Horn	**1** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40

Specify

End of Environment Call-out	31.08.2023 14:40 MDT

Final Location of Wildlife

On tundra directly south of A418 Pit.

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Justin Macek
31.08.2023 16:45 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Wildlife Report - 2021

Grizzly - 2023 - 09 - 14 - A21 Dike (In-field)

Complete

Score	**6 / 401 (1.5%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly - 2023 - 09 - 14 - A21 Dike (In-field)
Document No.	WildlifeReport000292
	15.09.2023

Audit	6 / 401 (1.5%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

5 / 400 (1.25%)

Enter Initial Time of Wildlife Sighting	14.09.2023 15:50 MDT

Department/Individual Who Reported Wildlife:

A21 pit Maintenance

Environment at Call-out Location	14.09.2023 16:00 MDT
Animal Type	Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

Blonde and dark brown young yearling cub.

Photo (If Possible):


Photo 1


Photo 2


Photo 3

Chronological Events

14 September, 2023
15:50 A21 pit maintenance crew reported the young yearling cub on the A21 dike, making its way north of the A21 dike.
16:10 Environment arrived at the A21 dike.
16:16 Bear was spotted below in the A21 infield North of A21 zone 3. Monitored the young yearling until 17:00.
17:04 the bear started moving towards A21 zone 3. Environment made an announcement on the local radio channels to all personnel working in the area to conduct scans of their work area and to be aware that there is a grizzly in the area. Environment used the TRUCK to deter the bear from wondering into A21 zone 3 site. Used the truck to HONK three times and SHOUTED at the bear. The bear went over the A21 kimberlite hill. Visual of the bear was lost. Conducted scans of the area until 18:00.

Movement Map (Import NotePlus Site Map)


Photo 4

Deterrent Count

5 / 400 (1.25%)

Truck	**3** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**2** From 0 to 40
Specify	
End of Environment Call-out	14.09.2023 18:00 MDT

Final Location of Wildlife

A21 Kimberlite hill near A21 zone 3

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Amber Powder
18.09.2023 13:54 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Wildlife Report - 2021

Grizzly-2023-09-16-Waste Transfer

Complete

Score	**27 / 401 (6.73%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Grizzly-2023-09-16-Waste Transfer
Document No.	WildlifeReport000293
	16.09.2023

Audit	27 / 401 (6.73%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

26 / 400 (6.5%)

Enter Initial Time of Wildlife Sighting 16.09.2023 14:00 MDT

Department/Individual Who Reported Wildlife:

Site services

Environment at Call-out Location 16.09.2023 14:30 MDT

Animal Type Grizzly Bear

Description (eg. number of individuals, colour, age, size, etc.):

One light blonde, dark under fur yearling

Photo (If Possible):

Chronological Events

14:10- Site services personnel reported a single grizzly cub near the intersection of lakeshore boulevard and metcon. The bear was moving north towards the metcon. A second call was made that the bear was near the waste transfer.

14:40- ENV arrives to the entrance of waste transfer where the single young grizzly was observed. Bear was heading northeast towards main accommodation. ENV used TRUCK to deter the bear towards the wind farm. Bear ran out of sight.

14:55- ENV located bear on the west end of metcon but the bear disappeared as ENV was getting the deterrent ready.

15:10- ENV received another call that the bear was in the south end of the metcon. ENV again used the TRUCK to deter the bear away from mine infrastructure towards the tundra. ENV used VOICE and CLAPPING to further deter the bear across the road onto the tundra.

15:15- ENV observed the bear near the edge of the tundra heading north towards main accommodation. ENV used 1 12-gage explosive to deter the bear. Bear turned around and headed south on the tundra.

15:20-15:45- ENV searched for bear but could not locate again.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

26 / 400 (6.5%)

Truck	**21** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**1** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**4** From 0 to 40
Specify	Voice, clapping
End of Environment Call-out	16.09.2023 15:40 MDT

Final Location of Wildlife

Tundra near Lakeshore boulevard

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Dani Bowler

Media summary

Photo 1

Wildlife Report - 2021

Red Fox - 2023-10-02 - Truck Shop

Complete

Score	9 / 401 (2.24%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Red Fox - 2023-10-02 - Truck Shop
Document No.	WildlifeReport000296
	03.10.2023

Audit	9 / 401 (2.24%)
Type of Wildlife Report	Deterrent Reporting
Deterrent Report	8 / 400 (2%)
Enter Initial Time of Wildlife Sighting	02.10.2023 17:55 MDT

Department/Individual Who Reported Wildlife:

Truck Shop - Lead hand

Environment at Call-out Location	02.10.2023 06:02 MDT
Animal Type	Fox

Description (eg. number of individuals, colour, age, size, etc.):

Single adult red fox

Photo (If Possible):

Photo 1

Chronological Events

17:55 - Environment (ENV) was notified that a red fox had entered the Truck Shop by one of the bay doors, then left the building.

18:02 - ENV spotted the fox in front of Bay 5 door. ENV used a BEAR BANGER x1 to deter the fox from the parking area.

18:07 - ENV spotted the fox in front of one of the Truck Shop door. ENV SHOUTED and CLAPPED to deter the fox away from the entrance door and the Truck Shop.

18:09 - ENV spotted the fox at the Process Plant area. ENV used the TRUCK HORN x1, no reaction. ENV then approached the animal in the TRUCK to deter it further South.

18:11 - ENV spotted the fox near Sewage Treatment Plant. ENV SHOUTED and CLAPPED to lead it away from the buildings. It then went under the Potable Water Treatment Plant (PWTP) building and ENV monitored the area.

18:18 - ENV used AIR HORN x1 in the direction of the PWTP building. No sign of movement. ENV searched the surrounding areas.

18:35 - ENV did not locate the position of the fox and left the scene.

Movement Map (Import NotePlus Site Map)

Photo 2

Deterrent Count	8 / 400 (2%)
Truck	1 From 0 to 40
Air Horn	1 From 0 to 40
C/F Bear Banger	1 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	5 From 0 to 40
Specify	Shout (2), Clap (2), Truck horn (1)
End of Environment Call-out	02.10.2023 18:35 MDT

Final Location of Wildlife

Last seen going under Potable Water Treatment Plant building.

Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	On

Signature

Jessica Gosselin

Media summary

Photo 1

Photo 2

Wildlife Report - 2021

Red Fox - 2023-09-29 - A21 Muster

Complete

Score	**6 / 401 (1.5%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Red Fox - 2023-09-29 - A21 Muster
Document No.	WildlifeReport000295
	30.09.2023

Audit	6 / 401 (1.5%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

5 / 400 (1.25%)

Enter Initial Time of Wildlife Sighting 29.09.2023 11:30 MDT

Department/Individual Who Reported Wildlife:

Site services

Environment at Call-out Location 29.09.2023 11:40 MDT

Animal Type Fox

Description (eg. number of individuals, colour, age, size, etc.):

Single red fox

Photo (If Possible):

Chronological Events

11:30 - Environment (ENV) was notified about a red fox near the A21 muster. ENV was notified that the fox was not afraid of mine personnel and instead walked towards them. Mine personnel attempted to shoe away the fox by SHOUTING and CLAPPING. The fox did not react. After continuing to SHOUT, CLAP, and STOMP FEET, the fox ran away into the tundra.
11:40 - ENV arrived on scene and scanned the A21 muster and surrounding areas for the fox.
12:20 - ENV did not locate the fox and left the scene.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

5 / 400 (1.25%)

Truck	**0** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0** From 0 to 40

C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**5** From 0 to 40
Specify	Clap (2), Shout (2), Stomp Feet (1)
End of Environment Call-out	29.09.2023 12:20 MDT

Final Location of Wildlife

Unknown. Potentially west of the A21 Muster in the tundra

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Anton Jitnikovitch
30.09.2023 11:30 MDT

Media summary

Photo 1

Wildlife Report - 2021

Red Fox - 2023-09-30 - Truck Shop

Complete

Score	**2 / 401 (0.5%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Red Fox - 2023-09-30 - Truck Shop
Document No.	WildlifeReport000294
	30.09.2023

Audit	2 / 401 (0.5%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

1 / 400 (0.25%)

Enter Initial Time of Wildlife Sighting 30.09.2023 09:30 MDT

Department/Individual Who Reported Wildlife:

Truck Shop supervisor

Environment at Call-out Location

Animal Type Fox

Description (eg. number of individuals, colour, age, size, etc.):

Single red fox

Photo (If Possible):

Chronological Events

09:30 - Fox walked into the Truck Shop through one of the bay doors.
09:31 - Truck Shop worker was cleaning near the bay door and noticed the fox. The fox stared at the worker. In an attempt to remove the fox from inside the Truck Shop area, the worker sprayed water on the floor in the direction of the fox. The fox then ran away and left the Truck Shop.

Movement Map (Import NotePlus Site Map)

Photo 1

Deterrent Count

1 / 400 (0.25%)

Truck	**0** From 0 to 40
Air Horn	**0** From 0 to 40
C/F Bear Banger	**0**

	From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**0** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**0** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**1** From 0 to 40
Specify	Spray water from hose.
End of Environment Call-out	30.09.2023 09:32 MDT

Final Location of Wildlife

Outside the Truck Shop

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Anton Jitnikovitch
30.09.2023 10:26 MDT

Media summary

Photo 1

Wildlife Report - 2021

Red Fox - 2023-10-02 - Truck Shop

Complete

Score	9 / 401 (2.24%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Red Fox - 2023-10-02 - Truck Shop
Document No.	WildlifeReport000296
	03.10.2023

Audit	9 / 401 (2.24%)
Type of Wildlife Report	Deterrent Reporting
Deterrent Report	8 / 400 (2%)
Enter Initial Time of Wildlife Sighting	02.10.2023 17:55 MDT

Department/Individual Who Reported Wildlife:

Truck Shop - Lead hand

Environment at Call-out Location	02.10.2023 06:02 MDT
Animal Type	Fox

Description (eg. number of individuals, colour, age, size, etc.):

Single adult red fox

Photo (If Possible):

Photo 1

Chronological Events

17:55 - Environment (ENV) was notified that a red fox had entered the Truck Shop by one of the bay doors, then left the building.

18:02 - ENV spotted the fox in front of Bay 5 door. ENV used a BEAR BANGER x1 to deter the fox from the parking area.

18:07 - ENV spotted the fox in front of one of the Truck Shop door. ENV SHOUTED and CLAPPED to deter the fox away from the entrance door and the Truck Shop.

18:09 - ENV spotted the fox at the Process Plant area. ENV used the TRUCK HORN x1, no reaction. ENV then approached the animal in the TRUCK to deter it further South.

18:11 - ENV spotted the fox near Sewage Treatment Plant. ENV SHOUTED and CLAPPED to lead it away from the buildings. It then went under the Potable Water Treatment Plant (PWTP) building and ENV monitored the area.

18:18 - ENV used AIR HORN x1 in the direction of the PWTP building. No sign of movement. ENV searched the surrounding areas.

18:35 - ENV did not locate the position of the fox and left the scene.

Movement Map (Import NotePlus Site Map)

Photo 2

Deterrent Count	8 / 400 (2%)
Truck	1 From 0 to 40
Air Horn	1 From 0 to 40
C/F Bear Banger	1 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	5 From 0 to 40
Specify	Shout (2), Clap (2), Truck horn (1)
End of Environment Call-out	02.10.2023 18:35 MDT

Final Location of Wildlife

Last seen going under Potable Water Treatment Plant building.

Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	On

Signature

Jessica Gosselin

Media summary

Photo 1

Photo 2

Wildlife Report - 2021

Red Fox - 2023 - 10 - 07 - STP - Airport

Complete

Score	**6 / 401 (1.5%)**	Flagged items	**0**	Actions	**0**

Audit Title (Animal - yyyy-mm-dd - Location)	Red Fox - 2023 - 10 - 07 - STP - Airport
Document No.	WildlifeReport000297
	07.10.2023

Audit	6 / 401 (1.5%)
Type of Wildlife Report	Deterrent Reporting

Deterrent Report

5 / 400 (1.25%)

Enter Initial Time of Wildlife Sighting	07.10.2023 08:00 MDT

Department/Individual Who Reported Wildlife:

Environment/ Dani Bowler

Environment at Call-out Location	07.10.2023 08:15 MDT
Animal Type	Fox

Description (eg. number of individuals, colour, age, size, etc.):

Single red fox

Photo (If Possible):


Photo 1

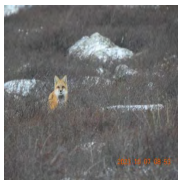


Photo 2

Chronological Events

08:00 - Environment worker found fox in fox trap outside the STP.
08:14 - Environment team arrived to help relocate fox to airport.
08:40 - Arrived at airport to release fox away from site.
08:52 - Released fox from trap and used two 12GA rubber buckshot and two pen launched bear bangers to move the fox away from site.
08:54 - Environment used one 12GA explosive to deter fox further away from site.
09:10 - Environment left the area.

Movement Map (Import NotePlus Site Map)


Photo 3

Deterrent Count

5 / 400 (1.25%)

Truck	**0** From 0 to 40

Air Horn	**0** From 0 to 40
C/F Bear Banger	**2** From 0 to 40
C/F Pen Whistle	**0** From 0 to 40
12GA Explosive	**1** From 0 to 40
12GA B.B. Marker	**0** From 0 to 40
12GA Rubber Bullet	**2** From 0 to 40
12GA Slug	**0** From 0 to 40
Helicopter	**0** From 0 to 40
Other	**0** From 0 to 40
Specify	
End of Environment Call-out	07.10.2023 09:10 MDT

Final Location of Wildlife

Outside of airport

Closure & Sign-off

1 / 1 (100%)

Wildlife Report Complete	On

Signature

Amber Powder
07.10.2023 15:29 MDT

Media summary

Photo 1

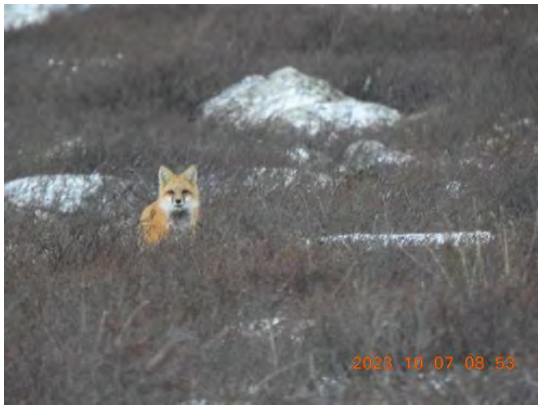


Photo 2

Photo 3

Wildlife Report - 2021

Fox- 2023-10-18

Complete

Score	2 / 401 (0.5%)	Flagged items	0	Actions	0

Audit Title (Animal - yyyy-mm-dd - Location)	Fox- 2023-10-18
Document No.	WildlifeReport000300
	18.10.2023

Audit	2 / 401 (0.5%)
Type of Wildlife Report	Deterrent Reporting
Deterrent Report	1 / 400 (0.25%)
Enter Initial Time of Wildlife Sighting	18.10.2023 08:10 MDT

checked trap, and we successfully caught fox.

Department/Individual Who Reported Wildlife:

Environment- Brennan Debassige

Environment at Call-out Location	18.10.2023 08:10 MDT
Animal Type	Fox

Description (eg. number of individuals, colour, age, size, etc.):

Fox, male, red with black butt.

Photo (If Possible):

Photo 1

Chronological Events

8:10AM - went to check trap, and was a successful set up. fox was caught. Waited until weather clear. Made plan for after 1pm.
1:30PM- moved trap to dock area, and prepped boat for drop off.
3:00PM- Made it to drop off point off the island, lifted trap off boat, and prepped for release.
3:08PM- Successful release of fox

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Movement Map (Import NotePlus Site Map)

Photo 8

Deterrent Count	1 / 400 (0.25%)
Truck	0 From 0 to 40
Air Horn	0 From 0 to 40
C/F Bear Banger	0 From 0 to 40
C/F Pen Whistle	0 From 0 to 40
12GA Explosive	0 From 0 to 40
12GA B.B. Marker	0 From 0 to 40
12GA Rubber Bullet	0 From 0 to 40
12GA Slug	0 From 0 to 40
Helicopter	0 From 0 to 40
Other	1 From 0 to 40
Trap	
Specify	Trap
End of Environment Call-out	18.10.2023 15:30 MDT

Final Location of Wildlife

5.5 km from our dock near our decommissioned Traditional knowledge camp.

Closure & Sign-off	1 / 1 (100%)
Wildlife Report Complete	On

Signature

18.10.2023 17:39 MDT

Media summary

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

APPENDIX H

Grizzly Bear Incidental Observations Summary 2023

Date	Number of Animals	Characteristics of Animals	Location	Deterrents Used?
2023-04-22	2	Sow grizzly and single cub, unknown description.	Tundra near emulsion plant.	No
2023-04-27	2	Sow grizzly and single cub, small cub, look healthy.	On tundra south of Zone 2, moving south.	No
2023-04-29	2	Sow grizzly and single cub, small cub, look healthy.	A21 Dike, then LDG south of A21. Moving south.	Yes
2023-05-01	2	Sow grizzly and single cub, small cub, look healthy.	On tundra patch north of test pile, moving north.	Yes
2023-05-02	2	Sow grizzly and single cub, small cub, look healthy.	South Haul Road, moving north.	No
2023-05-05	2	Sow grizzly and single cub, small cub, look healthy.	On tundra by South Country rock pile and tower 4, moving southeast.	No
2023-05-07	2	Sow grizzly and single cub, small cub, look healthy.	South side of A21 Dike.	No
2023-05-09	2	Sow and cub, feeding of veg, (2) sow and cub laying down	Veg plots, (2) A21 watering tree, moving east.	No
2023-05-10	2	Sow and cub, grazing.	Tundra south of A21 muster.	No
2023-05-22	2	Blonde Female Grizzly and year-old cub. Sow has white tag in left ear and a blood spot on right front shoulder. Same sow and cub from previous year, been on site for many years	A21 to North Inlet, moving north	Yes
2023-05-25	2	Blonde Female Grizzly and year-old cub. Same sow and cub from previous year, been on site for many years	Lakeshore, metcon, PKC, N Haul Road, South haul road, veg plot, moving north.	Yes
2023-05-30	2	Blonde Female Grizzly and year-old cub. Same sow and cub from previous year, been on site for many years	Underground mine dry/ portal, moving south.	Yes
2023-05-31	2	Blonde Female Grizzly and year-old cub. Same sow and cub from previous year, been on site for many years	Water tree SCRP, moving southwest	No
2023-06-03	1	Male grizzly roughly 340lbs, looks healthy and new to site?	Beside airport runway, moving northwest.	No
2023-06-03	4	Blonde Sow with three cubs	Behind ERT training ground, moving west.	Yes
2023-06-03	4	Light brown sow and 3 cubs	154 dike (infield), moving east.	No
2023-06-05	4	Blonde Sow, with 3 cubs, sow looks smaller, first time seeing her this year,	shallow bay by Backfill.	No
2023-06-06	4	Blonde sow with 3 cubs	Backfill	Yes
2023-06-07	1	single Cub	Test Piles, moving north.	No
2023-06-07	4	Blonde sow, 3 cubs	Pond 13, moving southwest.	Yes
2023-06-08	4	Blonde sow, 3 cubs	Pond 1	Yes
2023-06-08	1	Single cub	Pond 5	No
2023-06-09	1	Single cub	Lakeshore Blvd, moving south	No
2023-06-09	4	Blonde sow with 3 cubs	Backfill, moving south	No
2023-06-10	4	Blonde sow with 3 cubs	Scap, moving south	Yes

Date	Number of Animals	Characteristics of Animals	Location	Deterrents Used?
2023-06-12	4	Sow with 3 cubs.	Backfill yard to North Inlet Water Treatment Plant, moving north	Yes
2023-06-15	1	Single grizzly	Batch plant, moving northwest.	Yes
2023-06-15	4	Sow and 3 cubs	Backfill yard near Pond 1, moving west	Yes
2023-06-18	1	Single adult male grizzly, Dark blonde to brown fur.	Infield of the A154 dike, moving north	No
2023-06-19	1	Single large and dark-furred grizzly bear. Appeared to be an adult.	Pond 1 to Shallow Bay, moving south	Yes
2023-06-19	1	Single grizzly cub	PKC	No
2023-06-20	1	Single grizzly - most likely not a cub due to moderate size. Color of fur was light brown.	Pond 5 to ERT Training Grounds, moving north.	Yes
2023-06-25	1	Bear cub on LVB headed to STF	Lakeview boulevard to south tank farm, heading north.	No
2023-06-26	1	Young cub, light brown	NCRP, heading west	No
2023-06-29	1	1 cub alone grazing at lakeshore, appeared healthy.	Lakeshore Blvd, heading north	No
2023-06-30	1	Single grizzly, was described as most likely being a cub	Hanging around A21 Pit Shop/Sprung	No
2023-07-01	1	Single adult, blonde, skinny, somewhat of a pronounced neck 'hump' was visible. Fur was mix between light-brown and medium brown	A21 North dike	No
2023-07-01	1	Single cub grizzly bear	N17 Laydown	Yes
2023-07-02	1	Single adult grizzly, was in distance but possibly the one with pronounced hump on back	North inlet, moving east.	No
2023-07-04	1	1 light color female. 1 smaller darker male	(1) A21 muster, (2) Waste transfer, moving (1) south and then (2) west.	No
2023-07-05	1	Small bear, light brown	A21 Muster	No
2023-07-08	1	Single cub	(1) Tundra by West Ramp (2) A21 Pit North Ramp	No
2023-07-11	1	Single (likely) yearling cub	Tundra patch south of ENV fuel/dock area, moving west	Yes
2023-07-12	1	"Large" single grizzly bear	Crusher ROM headed towards till pile and airport road, moving north.	No
2023-07-14	1	Single grizzly, young adult-ish	Pond 5, PKC South, AN Road/Magazine Storage area, moving west.	No
2023-07-17	1	Single young grizzly	Dump 7/154, moving west	Yes
2023-07-19	1	Single young adult grizzly, dark blonde/brown	Backfill loadout, moving east, west, and south.	Yes
2023-07-20	1	Single young adult grizzly, dark blonde/brown	Shallow bay to PKC, moving west.	Yes
2023-07-20	1	Single grizzly cub	South PKC, moving south.	Yes

Date	Number of Animals	Characteristics of Animals	Location	Deterrents Used?
2023-07-21	1	Single grizzly	Airport road.	No
2023-07-22	1	Single cub grizzly, and larger spotty color bear	Airport, moving east.	Yes
2023-07-23	1	Single grizzly cub	N/A	No
2023-08-01	1	Saw from distance, appeared to be small and brown in tundra patch.	Hanging tree/NIWTP, moving east.	No
2023-08-02	1	Single grizzly cub	Backfill plant near pond 1	No
2023-08-03	2	(1) Single grizzly, vague description. ENV unable to confirm sighting. (2) Single grizzly cub, same one as seen previously throughout this summer	(1) North of truck shop. (2) Near A21 pit shop, on the AN Road	Yes
2023-08-04	1	Single grizzly cub	A21 Zone 3, tundra near Lakeshore Rd	No
2023-08-05	1	Single grizzly cub	Pond 1	No
2023-08-06	1	Grizzly cub on tundra	Behind waste transfer, moving south.	No
2023-08-14	1	Grizzly cub on tundra near pond 4	Near pond 4 at base of NCRP	Yes
2023-08-15	1	Single medium/large grizzly, dark underside	Crusher loadout then moved to shallow bays, moving east.	No
2023-08-16	1	Single medium/large grizzly, dark underside	Tundra near AN road/emulsion plant, moving north.	No
2023-08-17	1	Single grizzly cub, blonde, small	Tundra near airport road.	No
2023-08-18	1	Single grizzly cub, blonde, small	Grazing in pond 5, moving north.	No
2023-08-21	1	Adult grizzly, light on top, dark undercoat	Tundra near North Inlet, moving southeast.	No
2023-08-25	1	Grizzly cub	Airport road	No
2023-08-26	1	Grizzly Cub - dark brown paws, and light brown back	NCRP, moving northwest	Yes
2023-08-28	1	Grizzly cub	SCRP, moving northwest	No
2023-08-29	1	Small, blonde grizzly	NCRP, Airport Road.	No
2023-08-31	1	Small blonde/brown yearling	West side of A418 pit area, moving south.	Yes
2023-09-01	1	Adult, dark brown	Airport road, next to N17 laydown, moving northwest.	No
2023-09-02	1	Small, blonde grizzly	Tundra, North of Airport Road	No
2023-09-03	1	Small blonde/brown yearling	Airport Road, moving east.	No
2023-09-05	1	Small blonde/brown yearling	Tundra, South of Airport Road	No
2023-09-06	1	Small blonde/brown yearling	Beginning of A418 dike (south side)	No
2023-09-07	1	Small blonde/brown yearling	Pond 5 then on the PKC, moving west.	No
2023-09-10	4	Large sow with 3 medium sized cubs, blonde top, darker underside	West Island, heading south.	No
2023-09-11	1	Small blonde/brown yearling	Airport road	No
2023-09-13	1	No description	Shallow bays across from truck shop	No

Date	Number of Animals	Characteristics of Animals	Location	Deterrents Used?
2023-09-14	1	Small blonde/brown yearling	A21 dike, then north to A21 zone 2, moving north.	Yes
2023-09-15	1	Small blonde/brown yearling	Lakeshore boulevard to north A21 dike, moving southeast.	No
2023-09-16	1	Small blonde/brown yearling	Waste transfer to metcon to tundra, moving east.	Yes
2023-09-19	1	Small blonde/brown yearling	Zone 12 418 Dyke, moving north.	No
2023-09-19	1	Small blonde/brown yearling	North Haul Road, moving southwest.	No
2023-09-26	1	Small blonde/brown yearling	Between Lakeshore-A21, moving east.	No
2023-09-28	1	Small blonde/brown yearling	Lakeshore Blvd, moving southwest.	No
2023-09-29	1	Could not distinguish, potentially the "Small blonde/brown yearling" noted above, or another medium sized bear.	South winter road approach, moving east.	No
2023-10-06	1	Single adult grizzly, blonde top fur, darker underfur.	200m south of airport, moving northwest.	No

APPENDIX I

Wolverine Snow Track Survey Results 2023

Date	Transect	UTM Zone 12 W		Days Since		Observation Type	Number of Individuals	Age of Track Since Weather Event	Comments
		Easting	Northing	Last Snow	Last Wind				
24 March	WT20	536347	7137598	6	1.5	Tracks	1	Before	Female, traveling South
24 March	WT27	552440	7169447	6	1.5	Tracks	1	After	Traveling East
24 March	WT27	530259	7139925	6	1.5	Tracks	1	After	Large male, traveling North
24 March	WT36	528162	7147921	6	1.5	Tracks	1	After	Large male, possibly today, traveling South near large Caribou bedding site
24 March	WT28	534611	7130725	6	1.5	Tracks	1	After	Traveling North
24 March	WT28	535788	7130633	6	1.5	Tracks	1	After	Traveling West, very old
24 March	WT28	536765	7130643	6	1.5	Tracks	1	After	Likely same Wolverine as previous entry. Small tracks likely female
24 March	WT28	537243	7130678	6	1.5	Tracks	1	Before	Traveling South, Male maybe 1-2 days old
24 March	WT28	537965	7130862	6	1.5	Tracks	1	Before	Traveling South, smaller than previous tracks. Possibly female, 1-2 days
24 March	WT19	541729	7131068	6	1.5	Tracks	1	Before	Likely same Wolverine from previous transect
24 March	WT19	541784	7131764	6	1.5	Tracks	2	After	Looks like two sets of tracks overlapping older
24 March	WT20	538112	7137526	6	1.5	Tracks	1	Before	1-2 days old, female, traveling East
25 March	WT17	520092	7157760	7	2	Tracks	1	Before	Large male, track probably more than a week-old heading North
25 March	WT32	528513	7161113	7	2	Tracks	2	After	Looks like possibly 1 male and 1 female
25 March	WT16	526364	7155026	7	2	Tracks	1	After	Large male, traveling South
25 March	WT16	528390	7155002	7	2	Tracks	1	After	Fresh, traveling North
25 March	WT16	528934	7151624	7	2	Tracks	1	After	Fresh, traveling West. Large male
26 March	WT22	550870	7151543	8	3	Tracks	1	Before	Old tracks, large male
26 March	WT22	551400	7151865	8	3	Tracks	1	After	New tracks, small male or large female traveling South
26 March	WT22	553393	7153277	8	3	Tracks	1	After	Larger than the previous tracks
26 March	WT35	556981	7158940	8	3	Tracks	1	Before	Old track heading North
26 March	WT35	554713	7159176	8	3	Tracks	2	After	Two tracks beside each other, appears to be a male and a female traveling East
26 March	WT08	548902	7156372	8	3	Tracks	1	After	Male traveling North
26 March	WT08	549148	7157603	8	3	Tracks	1	After	Probably same one as previous, hanging out around old hunting camp. Crosses transect lots
26 March	WT24	545116	7158079	8	3	Tracks	1	Before	Large male, traveling west
26 March	WT24	543802	7159062	8	3	Tracks	1	After	Likely the same Wolverine as previous entry

Date	Transect	UTM Zone 12 W		Days Since		Observation Type	Number of Individuals	Age of Track Since Weather Event	Comments
		Easting	Northing	Last Snow	Last Wind				
26 March	WT14	543439	7154010	8	3	Tracks	1	After	Large male, traveling North
26 March	WT14	541568	7153246	8	3	Tracks	1	After	Likely female traveling NE
26 March	WT14	540310	7152666	8	3	Tracks	1	After	Large male traveling North
27 March	WT07	551648	7166800	1	4	Tracks	1	After	1 large Wolverine heading SW
27 March	WT07	551090	7166535	1	4	Tracks	1	After	Possibly same animal as above
27 March	WT05	549126	7165028	1	4	Tracks	1	Before	1 large male heading NE
27 March	WT05	548908	7165185	1	4	Tracks	2	After	1 or 2 wolverines moving back and forth N to S
27 March	WT05	548504	7165504	1	4	Tracks	1	After	NE
27 March	WT05	547969	7165943	1	4	Tracks	1	After	! Wolverine circling around caribou feeding area
27 March	WT06	548463	7169052	1	4	Tracks	1	After	Heading E near an area with many fox tracks. More Wolverine tracks in area and possible den near by
27 March	WT06	549044	7169521	1	4	Tracks	1	After	Heading NE
27 March	WT06	549324	7169781	1	4	Tracks	1	After	1 smaller wolverine heading North
27 March	WT31	557272	7170393	1	4	Tracks	1	After	Large male, lots of ___ marks. Same tracks followed transect ~500m and 1 crossed several times
27 March	WT31	557186	7169282	1	4	Tracks	1	Before	Same animals, mature, back and forth along same path. Multiple wolf tracks in area for next ~500m
27 March	WT31	555210	7168802	1	4	Tracks	1	After	Heading North, large male
27 March	WT31	557177	7168299	1	4	Tracks	2	After	2 wolverines heading back and forth across a lake. Same tracks seen 2-3 times within ~300m. 1 large, 1 smaller
27 March	WT07	554505	7166640	1	4	Tracks	2	After	Heading NE on the same path. 1 smaller & 1 large
27 March	WT07	553118	7166542	1	4	Tracks	1	After	1 large wolverine running South. Same tracks seen running N & S ~150 then W
27 March	WT07	552464	7166562	1	4	Tracks	1	After	1 large wolverine heading N. Caribou & fox tracks nearby
27 March	WT06	550078	7170116	1	4	Tracks	1	Before	1 large wolverine heading SW
27 March	WT34	542729	7171554	1	4	Tracks	1	After	South
27 March	WT34	540297	7169000	1	4	Tracks	1	After	Faint tracks heading NW. probably medium sized wolverine

Date	Transect	UTM Zone 12 W		Days Since		Observation Type	Number of Individuals	Age of Track Since Weather Event	Comments
		Easting	Northing	Last Snow	Last Wind				
27 March	WT34	540217	7168590	1	4	Tracks	1	After	Degraded tracks heading N near caribou tracks
27 March	WT34	539965	7168892	1	4	Tracks	1	After	Old, headed W, small
31 March	WT25	549408	7138727	3	1	Tracks	1	After	Large male traveling North
31 March	WT37	547967	7136300	3	1	Tracks	1	After	Small female traveling West
04 April	WT39	553517	7140982	1	3	Tracks	1	After	Small Wolverine track
04 April	WT29	556991	7145783	1	3	Tracks	1	After	Medium Wolverine track
04 April	WT21	550371	7143655	1	3	Animals	1	NA	Wolverine scared off into dug out
07 April	WT31	557302	7168511	5	1	Tracks	1	After	Heading West following caribou tracks, small individual
07 April	WT31	557253	7167761	5	1	Tracks	1	After	Some animal heading East
07 April	WT05	549403	7164802	5	1	Tracks	1	After	Circled a rock with rabbit droppings, then went NW
07 April	WT05	548909	7165243	5	1	Tracks	1	After	same individual from earlier, crossing transect heading E then crossed transect again 100m then 200m away
07 April	WT06	549273	7169979	5	1	Tracks	1	After	Same animal ran transect S most likely heading NE
07 April	WT06	549839	7169926	5	1	Tracks	1	After	Multiple tracks crossing each other, same size and similar age, probably same animal.
09 April	WT22	550924	7151614	1	8	Tracks	1	Before	Single small Wolverine heading SE
12 April	WT11	525170	7131989	NA	0.5	Tracks	1	Before	Heading east
12 April	WT12	528098	7162147	NA	0.5	Tracks	1	Before	Same wolverine, average size, short strides heading E/SE

APPENDIX J

Wolverine Incidental Observations Summary 2023

Date	Number of Animals	Characteristics of Animals	Location
2023-01-17	1	Single wolverine unknown description.	Wolverine, no confirmation - near WTA, moving west.
2023-01-25	1	Single wolverine unknown description.	Wolverine at WTA, no confirmation.
2023-01-29	1	Single wolverine unknown description	Wolverine reported and fresh tracks spotted along with a hole just large enough for an animal to squeeze through in the corner fenceline of the WTA.
2023-02-12	1	Single wolverine unknown description	Wolverine spotted between the STP and Process Plant, underneath the Arctic Corridor. No confirmed sighting of wolverine by ENV but fresh tracks in area. Moving east.
2023-02-16	1	Single wolverine unknown description	Dispatch noted that a wolverine was spotted by an Ice Road Trucker heading from Main Camp towards the Comm. Shack building and out towards the ice. Moving northeast.
2023-02-18	1	Single wolverine unknown description	Surface Operations noted that a wolverine was in the area of the Ice Road Trucker laydown, moving south.
2023-03-07	1	Single wolverine unknown description	Inside waste transfer area, southwest corner (burn pit) eventually moving to northwest corner where it exited area, moving northwest.
2023-06-30	1	Single wolverine unknown description	Wolverine running north of runway, observed by Env running in the tundra near Tower 3.
2023-07-01	1	Adult, average size, appeared healthy, light with dark circle on back.	Com Shack, moving south.
2023-07-05	1	Average size adult, dark circle on back.	N A21 dike, moving west.
2023-07-06	3	No description was provided.	(1) 2 wolverines at South PKC, 1 near A21 pit shop, (2) single wolverine spotted at west dam PKC.
2023-11-11	1	Single wolverine (photos provided in Appendix E)	A21 Dike going towards laydown.
2023-12-14	1	Single wolverine	Waste transfer to A21 area, moving south.
2023-12-22	1	Single wolverine	Near South Tank Farm.
2023-12-23	1	Single wolverine	B Dorm.

APPENDIX K

Pit Wall/Mine Infrastructure Raptor Survey Results 2023

Date	Area	Method Used (D/L)[a]	Bird Species[b]	Number of Observed	Confirmed Active Nest (Y/N)[c]	Potential Nesting (Y/N)[c]	Young / Fledglings (Y#/N/U)[c]	Comments
5/6/2023	A21 North Wall	L	-	0	N	N	NA	-
5/6/2023	A21 East Wall	L	-	0	N	N	NA	-
5/6/2023	A21 South Wall	L	-	0	N	N	NA	-
5/6/2023	A21 S Ramp	L	RLHA	2	Y	-	N	2 RLHA mating
5/6/2023	S. Tank Farm	D	CORA	1	N	Y	N	Nest on the stairs of the most eastern tank, 2nd last platform. Raven flew by but did not perch.
5/6/2023	A154 Lookout #1	L	RLHA	1	N	N	N	-
5/6/2023	A154 Lookout #2	L	PEFA	2	N	N	Unsure	Same size as those observed at A418, likely the same.
5/6/2023	A418 Lookout #1	L	PEFA	2	N	N	Unsure	2 PEFA spotted on West wall, flying, interacting together. Small size, potentially young.
5/6/2023	A418 Lookout #2	L	PEFA	3	N	N	Unsure	Flying by west wall
5/6/2023	A418 Lookout #2	L	RLHA	1	N	N	N	
5/6/2023	Process Plant	D	-	0	N	N	NA	-
5/6/2023	Powerhouse	D	-	0	N	N	NA	-
5/6/2023	Boiler House	D	-	0	N	N	NA	-
5/6/2023	Site Services Lineup	L	-	0	N	N	NA	Nest is there, does not seem to be active, disorganized.
5/6/2023	Backfill Plant	D	-	0	N	N	NA	-
5/11/2023	Process plant	L	GYRF	2	N	Y	N	Male came by and copulated with female then flew off
5/12/2023	A154 Lookout #1	L	RLHA	1	N	N	N	-
5/12/2023	A154 Lookout #2	L	RLHA, PEFA	2	N	N	N	-
5/12/2023	A418 Lookout #1	L	-	0	N	N	N	-
5/12/2023	A418 Lookout #2	L	-	0	N	N	N	-
5/12/2023	A418 Lookout #1	L	-	0	N	N	N	-
5/12/2023	A418 Lookout #2	L	-	0	N	N	N	-
5/12/2023	South Tank Farm	L	CORA	4	Y	Y	Y	3-4 young in nest and being fed by parent
5/12/2023	Process Plant	D	GYRF	2	N	Y	N	Both perched on top, 1 smaller than the other
5/12/2023	Powerhouse 1	D	-	0	N	N	N	-
5/12/2023	Powerhouse 2	D	-	0	N	N	N	-
5/12/2023	Boiler House	D	-	0	N	N	N	-
5/12/2023	Site Services Lineup	D	-	0	N	N	N	-
5/12/2023	Backfill Plant	D	-	0	N	N	N	-
5/12/2023	A21 North Wall	L	-	0	N	N	N	-
5/12/2023	A21 East Wall	L	-	0	N	N	N	-
5/12/2023	A21 South Wall	L	-	0	N	N	N	-
5/12/2023	A21 S Ramp	L	RLHA	2	Y	Y	N	2 bird sitting on nest
5/16/2023	Process plant	L	PEFA	2	N	Y	U	-
5/18/2023	A418 Lookout #1	L	RLHA	1	Y	Y	U	Saw it carrying nest material towards potential nest
5/20/2023	A154 Lookout #1	L	-	-	-	-	-	-
5/20/2023	A154 Lookout #1	L	-	-	-	-	-	-
5/20/2023	A418 Lookout #1	L	-	-	Y	Y	-	-
5/20/2023	A418 Lookout #2	L	RLHA	1	N	Y	N	-
5/20/2023	South Tank Farm	L	-	-	-	-	-	-
5/20/2023	Process plant	L	-	-	-	-	-	-
5/20/2023	Powerhouse 1	L	-	-	-	-	-	-
5/20/2023	Powerhouse 2	L	-	-	-	-	-	-
5/20/2023	Boiler House	L	-	-	-	-	-	-
5/20/2023	Site Services Building	L	-	-	-	-	-	-

Date	Area	Method Used (D/L)[a]	Bird Species[b]	Number of Observed	Confirmed Active Nest (Y/N)[c]	Potential Nesting (Y/N)[c]	Young / Fledglings (Y#/N/U)[c]	Comments
5/20/2023	Backfill Plant	L	-	-	-	-	-	-
5/20/2023	A21-N	L	-	-	-	-	-	-
5/20/2023	A21-E		-	-	-	-	-	-
5/20/2023	A21-S	D	-	-	-	-	-	-
5/20/2023	S Ramp	L	-	-	-	-	-	-
5/27/2023	A154 Lookout #1	L	-	-	-	-	-	-
5/27/2023	A154 Lookout #1	L	-	-	-	-	-	-
5/27/2023	A418 Lookout #1	L	-	-	-	-	-	-
5/27/2023	A418 Lookout #2	L	-	-	-	-	-	-
5/27/2023	South Tank Farm	L	-	-	-	Y	-	Raven nest- inactive
5/27/2023	Process plant	L	-	-	-	-	-	-
5/27/2023	Powerhouse 1	L	-	-	-	-	-	-
5/27/2023	Powerhouse 2	L	-	-	-	-	-	-
5/27/2023	Boiler House	L	-	-	-	-	-	-
5/27/2023	Site Services Building	L	-	-	-	Y	-	Peregrine nest
5/27/2023	Backfill Plant	L	-	-	-	-	-	-
5/27/2023	A21-N	L	-	-	-	-	-	-
5/27/2023	A21-E		-	-	-	-	-	-
5/27/2023	A21-S	D	-	-	-	-	-	-
5/27/2023	S Ramp	L	RLHA	1	Y	Y	N	-
6/3/2023	A154 Lookout #1	L	-	-	-	-	-	-
6/3/2023	A154 Lookout #1	L	-	-	-	-	-	-
6/3/2023	A418 Lookout #1	L	-	-	-	-	-	-
6/3/2023	A418 Lookout #2	L	-	-	-	-	-	-
6/3/2023	South Tank Farm	L	-	-	-	-	-	-
6/3/2023	Process plant	L	-	-	-	-	-	-
6/3/2023	Powerhouse 1	L	-	-	-	-	-	-
6/3/2023	Powerhouse 2	D	-	-	-	-	-	-
6/3/2023	Boiler House	D	-	-	-	-	-	-
6/3/2023	Site Services Building	D	-	-	-	-	-	-
6/3/2023	Backfill Plant	D	-	-	-	-	-	-
6/3/2023	A21-N	L	-	-	-	-	-	-
6/3/2023	A21-E	L	-	-	-	-	-	-
6/3/2023	A21-S	L	-	-	-	-	-	-
6/3/2023	S Ramp	L	RLHA	1	Y	Y	N	1 nesting. No young yet
6/10/2023	A154 Lookout #1	L	-	-	-	-	-	-
6/10/2023	A154 Lookout #1	L	-	-	-	-	-	-
6/10/2023	A418 Lookout #1	L	-	-	-	-	-	-
6/10/2023	A418 Lookout #2	L	-	-	-	-	-	-
6/10/2023	South Tank Farm	L	CORA	4	Y	Y	Y	Raven with 3 young
6/10/2023	Process plant	L	PEFA	1	N	UNK	N	1 PEFA perched
6/10/2023	Powerhouse 1	L	-	-	-	-	-	-
6/10/2023	Powerhouse 2	D	-	-	-	-	-	-

Date	Area	Method Used (D/L)[a]	Bird Species[b]	Number of Observed	Confirmed Active Nest (Y/N)[c]	Potential Nesting (Y/N)[c]	Young / Fledglings (Y#/N/U)[c]	Comments
6/10/2023	Boiler House	D	-	-	-	-	-	-
6/10/2023	Site Services Building	D	-	-	-	-	-	-
6/10/2023	Backfill Plant	D	-	-	-	-	-	-
6/10/2023	A21-N	L	-	-	-	-	-	-
6/10/2023	A21-E	L	-	-	-	-	-	-
6/10/2023	A21-S	L	-	-	-	-	-	-
6/10/2023	S Ramp	L	RLHA	2	Y	Y	U	1 hawk flying over pit towards north pit. 1 in nest and very vocal
6/18/2023	A154 Lookout #1	L	-	-	-	-	-	No bird sightings
6/18/2023	A154 Lookout #2	L	-	-	-	-	-	-
6/18/2023	A418 Lookout #1	L	-	-	-	Y	-	Nest with no babies present
6/18/2023	A418 Lookout #2	L	-	-	-	-	-	-
6/18/2023	South Tank Farm	L	CORA	2	N	N	Y	Two young ravens
6/18/2023	Process plant	D	-	-	-	-	-	-
6/18/2023	Powerhouse 1	D	-	-	-	-	-	-
6/18/2023	Powerhouse 2	D	-	-	-	-	-	-
6/18/2023	Boiler House	D	-	-	-	-	-	-
6/18/2023	Site Services Building	D	-	-	-	-	-	-
6/18/2023	Backfill Plant	D	-	-	-	-	-	-
6/18/2023	A21-N	L	RLHA	2	Y	Y	Y	Possible baby fledgings soon
6/18/2023	A21-E	L	-	-	-	-	-	-
6/18/2023	A21-S	L	-	-	-	-	-	-
6/18/2023	S. Ramp	L	RLHA	2	Y	Y	Y	-
6/24/2023	A154 Lookout #1	L	-	-	-	-	-	-
6/24/2023	A154 Lookout #2	L	-	-	-	-	-	-
6/24/2023	A418 Lookout #1	L	-	-	-	-	-	-
6/24/2023	A418 Lookout #2	L	-	-	-	-	-	-
6/24/2023	South Tank Farm	L	CORA	3	N	N	Y	Three young ravens
6/24/2023	Process plant	L	-	-	-	-	-	-
6/24/2023	Powerhouse 1	L	-	-	-	-	-	-
6/24/2023	Powerhouse 2	L	-	-	-	-	-	-
6/24/2023	Boiler House	L	-	-	-	-	-	-
6/24/2023	Site Services Building	L	-	-	-	-	-	-
6/24/2023	Backfill Plant	L	-	-	-	-	-	-
6/24/2023	A21-N	L	-	-	-	-	-	-
6/24/2023	A21-E	L	-	-	-	-	-	-
6/24/2023	A21-S	L	-	-	-	-	-	-
6/24/2023	S. Ramp	L	RLHA	1	Y	Y	U	-
7/1/2023	A154 Lookout #1	L	-	-	-	-	-	-
7/1/2023	A154 Lookout #2	L	-	-	-	-	-	-
7/1/2023	A418 Lookout #1	L	-	-	-	-	-	-
7/1/2023	A418 Lookout #2	L	-	-	-	-	-	-
7/1/2023	South Tank Farm	D	-	-	-	-	-	-
7/1/2023	Process Plant	D	-	-	-	-	-	-

Date	Area	Method Used (D/L)[a]	Bird Species[b]	Number of Observed	Confirmed Active Nest (Y/N)[c]	Potential Nesting (Y/N)[c]	Young / Fledglings (Y#/N/U)[c]	Comments
7/1/2023	Powerhouse 1	D	-	-	-	-	-	-
7/1/2023	Powerhouse 2	D	-	-	-	-	-	-
7/1/2023	Boiler House	D	-	-	-	-	-	-
7/1/2023	Site Services Lineup	D	-	-	-	-	-	-
7/1/2023	Backfill Plant	D	-	-	-	-	-	-
7/1/2023	A21 North Wall	L	RLHA	1	-	-	-	-
7/1/2023	A21 East Wall	L	-	-	-	-	-	-
7/1/2023	A21 South Wall	L	-	-	-	-	-	-
7/1/2023	A21 S Ramp	L	RLHA	3	Y	N	Y	-
7/6/2023	A154 Lookout #1	L	-	-	-	-	-	-
7/6/2023	A154 Lookout #2	L	-	-	-	-	-	-
7/6/2023	A418 Lookout #1	L	-	-	-	-	-	-
7/6/2023	A418 Lookout #2	L	-	-	-	-	-	-
7/6/2023	South Tank Farm	L	-	-	-	-	-	-
7/6/2023	Process Plant	L	-	-	-	-	-	-
7/6/2023	Powerhouse 1	L	-	-	-	-	-	-
7/6/2023	Powerhouse 2	L	-	-	-	-	-	-
7/6/2023	Boiler House	L	-	-	-	-	-	-
7/6/2023	Site Services Lineup	L	-	-	-	-	-	-
7/6/2023	Backfill Plant	L	-	-	-	-	-	-
7/6/2023	A21 North Wall	L	-	-	-	-	-	-
7/6/2023	A21 East Wall	L	-	-	-	-	-	-
7/6/2023	A21 South Wall	L	-	-	-	-	-	-
7/6/2023	A21 S Ramp	L	-	-	-	-	-	-
7/16/2023	A154 Lookout #1	L	-	-	-	-	-	-
7/16/2023	A154 Lookout #2	L	-	-	-	-	-	-
7/16/2023	A418 Lookout #1	L	-	-	-	-	-	-
7/16/2023	A418 Lookout #2	L	-	-	-	-	-	-
7/16/2023	South Tank Farm	L	-	-	-	-	-	-
7/16/2023	Process Plant	L	-	-	-	-	-	-
7/16/2023	Powerhouse 1	L	-	-	-	-	-	-
7/16/2023	Powerhouse 2	L	-	-	-	-	-	-
7/16/2023	Boiler House	L	-	-	-	-	-	-
7/16/2023	Site Services Lineup	L	-	-	-	-	-	Theres been a peregrine near the field lab but not today
7/16/2023	Backfill Plant	L	-	-	-	-	-	-
7/16/2023	A21 North Wall	L	-	-	-	-	-	-
7/16/2023	A21 East Wall	L	-	-	-	-	-	-
7/16/2023	A21 South Wall	L	-	-	-	-	-	-
7/16/2023	A21 S Ramp	L	-	-	-	-	-	-
7/22/2023	A154 Lookout #1	L	CORA	2	-	-	-	-
7/22/2023	A154 Lookout #2	L	RLHA	1	-	-	-	-
7/22/2023	A418 Lookout #1	L	-	-	-	-	-	-
7/22/2023	A418 Lookout #2	L	-	-	-	-	-	-

Date	Area	Method Used (D/L)[a]	Bird Species[b]	Number of Observed	Confirmed Active Nest (Y/N)[c]	Potential Nesting (Y/N)[c]	Young / Fledglings (Y#/N/U)[c]	Comments
7/22/2023	South Tank Farm	D	-	-	-	-	-	-
7/22/2023	Process plant	D	-	-	-	-	-	-
7/22/2023	Powerhouse 1	D	-	-	-	-	-	-
7/22/2023	Powerhouse 2	D	-	-	-	-	-	-
7/22/2023	Boiler House	D	-	-	-	-	-	-
7/22/2023	Site Services Building	D	-	-	-	-	-	-
7/22/2023	Backfill Plant	D	-	-	-	-	-	-
7/22/2023	A21-N	L	-	-	-	-	-	-
7/22/2023	A21-E	L	-	-	-	-	-	-
7/22/2023	A21-S	L	-	-	-	-	-	-
7/22/2023	S.Ramp	L	RLHA	4	Y	Y	Y/3F	-
7/29/2023	A154 Lookout #1	L	-	-	-	-	-	-
7/29/2023	A154 Lookout #2	L	-	-	-	-	-	-
7/29/2023	A418 Lookout #1	L	-	-	-	-	-	-
7/29/2023	A418 Lookout #2	L	-	-	-	-	-	-
7/29/2023	South Tank Farm	L	-	-	-	-	-	-
7/29/2023	Process plant	L	-	-	-	-	-	-
7/29/2023	Powerhouse 1	L	-	-	-	-	-	-
7/29/2023	Powerhouse 2	L	-	-	-	-	-	-
7/29/2023	Boiler House	L	-	-	-	-	-	-
7/29/2023	Site Services Building	L	-	-	-	-	-	-
7/29/2023	Backfill Plant	D	-	-	-	-	-	-
7/29/2023	A21-N	L	-	-	-	-	-	-
7/29/2023	A21-E	L	-	-	-	-	-	-
7/29/2023	A21-S	L	-	-	-	-	-	-
7/29/2023	S.Ramp	L	RLHA	2	Y	Y	Y	-
8/5/2023	A154 Lookout #1	L	-	-	-	-	-	-
8/5/2023	A154 Lookout #2	L	-	-	-	-	-	-
8/5/2023	A418 Lookout #1	L	RLHA	1	N	N	N	-
8/5/2023	A418 Lookout #2	L	-	-	-	-	-	-
8/5/2023	South Tank Farm	D	-	-	-	-	-	-
8/5/2023	Process plant	L	PEFA	2	Y	-	Y, see ROM	-
8/5/2023	Powerhouse 1	L	-	-	-	-	-	-
8/5/2023	Powerhouse 2	L	-	-	-	-	-	-
8/5/2023	Boiler House	L	-	-	-	-	-	-
8/5/2023	Site Services Building	L	-	-	-	-	-	-
8/5/2023	Backfill Plant	L	-	-	-	-	-	-
8/5/2023	A21-N	L	-	-	-	-	-	-
8/5/2023	A21-E	L	-	-	-	-	-	-
8/5/2023	A21-S	L	-	-	-	-	-	-
8/5/2023	S.Ramp	L	RLHA	3	Y	N	Y2	3 perched on SW berm of pit, none in nest anymore (now fledged)
8/5/2023	ROM	L	PEFA	2	N	Y	Y/F2	2 perched, 1 flew on a short distance.
8/11/2023	A154 Lookout #1	L	-	-	-	-	-	-

Date	Area	Method Used (D/L)[a]	Bird Species[b]	Number of Observed	Confirmed Active Nest (Y/N)[c]	Potential Nesting (Y/N)[c]	Young / Fledglings (Y#/N/U)[c]	Comments
8/11/2023	A154 Lookout #2	L	-	-	-	-	-	-
8/11/2023	A418 Lookout #1	L	-	-	-	-	-	-
8/11/2023	A418 Lookout #2	D	RLHA	1	N	N	N	Flying around over the dike on the east end of the pit
8/11/2023	South Tank Farm	L	-	-	-	-	-	-
8/11/2023	Process plant	L	-	-	-	-	-	-
8/11/2023	Powerhouse 1	L	-	-	-	-	-	-
8/11/2023	Powerhouse 2	L	-	-	-	-	-	-
8/11/2023	Boiler House	L	-	-	-	-	-	-
8/11/2023	Site Services Building	L	PEFA	4	N	Y	Y/2	All of process plant, 2 on main plant and other 2 on bin truck loadout (tailings discharge)
8/11/2023	Backfill Plant	L	-	-	-	-	-	-
8/11/2023	A21-N	L	-	-	-	-	-	-
8/11/2023	A21-E	D	RLHA	1	N	N		Single hawk flying around zone 2
8/11/2023	A21-S	L	-	-	-	-	-	-
8/11/2023	S.Ramp	L	-	-	-	-	-	-
8/18/2023	A154 Lookout #1	L	-	-	N	N	-	-
8/18/2023	A154 Lookout #2	L	-	-	N	N	-	-
8/18/2023	A418 Lookout #1	L	-	-	N	N	-	-
8/18/2023	A418 Lookout #2	L	-	-	N	N	-	-
8/18/2023	South Tank Farm	L	-	-	N	N	-	-
8/18/2023	Process plant	L	-	-	N	N	-	-
8/18/2023	Powerhouse 1	L	-	-	N	N	-	-
8/18/2023	Powerhouse 2	L	-	-	N	N	-	-
8/18/2023	Boiler House	L	-	-	N	N	-	-
8/18/2023	Site Services Building	L	PEFA	1	Y	Y	1	staying out of the rain under an overhanging rock
8/18/2023	Backfill Plant	L	-	-	N	N	-	-
8/18/2023	A21-N	L	-	-	N	N	-	-
8/18/2023	A21-E	L	-	-	N	N	-	-
8/18/2023	A21-S	L	-	-	N	N	-	-
8/18/2023	S.Ramp	L	-	-	N	N	-	-

(a) “D” refers to an observation made from within a vehicle (“Driving”) and “L” refers to ground observation made outside of a vehicle (“Looking”).
(b) RLHA = Rough-legged hawk (*Buteo lagopus*); CORA = Common Raven *(Corvus corax*); GYRF = gyrfalcon (*Falco rusticolus*); and PEFA = peregrine falcon (*Falco peregrinus anatum/tundrius*).
(c) “Y” = Yes; “N” = No; and U = unknown.

APPENDIX L

Camp Population

Month	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
January	-	-	-	389	429	443	534	593	866	692	495	603	627	542	489	510	542	565	578	562	583	550	529	600
February	-	-	-	424	408	512	671	682	973	702	545	661	647	574	524	557	573	615	627	579	617	571	577	620
March	63	402	576	413	453	585	748	729	1010	712	552	672	617	559	508	556	572	635	620	580	578	584	591	623
April	-	-	-	318	570	678	743	755	1001	679	548	648	595	553	495	543	580	684	590	570	546	567	570	616
May	-	-	-	333	470	682	871	854	1021	645	610	634	618	561	509	552	642	718	614	594	616	581	582	605
June	189	523	751	326	392	746	821	873	1,028	600	612	641	611	552	500	561	694	698	587	606	606	574	564	591
July	-	-	-	443	396	736	819	857	600	378	589	588	607	524	465	554	701	692	574	583	606	545	540	560
August	-	-	-	425	399	745	768	868	990	335	623	607	625	524	442	562	703	651	562	584	597	546	532	512
September	211	681	879	432	408	755	708	943	993	526	639	648	608	547	466	586	704	670	561	609	585	563	545	550
October	-	-	-	457	390	726	714	950	1,042	524	620	646	577	546	481	564	664	649	563	589	565	550	557	575
November	-	-	-	379	425	670	704	984	1,043	536	608	648	579	515	498	550	627	618	562	604	569	566	567	588
December	287	881	766	-	386	611	524	696	1,030	453	510	546	464	452	460	498	490	518	518	545	551	505	533	564
Maximum	211	681	879	433	408	755	821	943	1,028	600	639	672	647	574	500	562	703	698	587	609	606	584	591	646

APPENDIX M

Waste Inspection Summary 2023

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2023-01-01	Landfill	No	-	0	-	No	-	-	-	Yes	Fox or hare	Footprints	-
2023-01-04	Landfill	No	-	0	-	Yes	Raven	3	-	No	-	-	-
2023-01-09	Landfill	No	-	0	-	Yes	Raven	3	-	No	-	-	-
2023-01-11	Landfill	Yes	Drink Container, PPE	2	-	No	-	-	-	Yes	Fox	Tracks	-
2023-01-15	Landfill	Yes	Hydrocarbon Containers, PPE	4	3 grease tubes, 1 glove	No	-	-	-	No	-	-	-
2023-01-22	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-25	Landfill	Yes	Hydrocarbon Container	1	Bucket filled with greasy sludge	No	-	-	-	No	-	-	-
2023-01-29	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-01	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-05	Landfill	No	-	0	-	Yes	Raven	1	-	No	-	-	-
2023-02-08	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-12	Landfill	Yes	Burnable Material	1	Cardboard in non-burn dump	No	-	-	-	No	-	-	-
2023-02-15	Landfill	Yes	Oil contaminated waste, hydrocarbon containers, oily rags	16	10x grease tubes, hydrocarbon contamination in waste	No	-	-	-	No	-	-	-
2023-02-19	Landfill	Yes	Hydrocarbon containers, oily rags, oil contaminated waste	16	10x grease tubes, 5x oil contaminated waste, 1x oily rag	No	-	-	-	No	-	-	-
2023-02-22	Landfill	Yes	Drink containers, food packaging, gloves, oil contaminated waste, hydrocarbon containers, oily rags, misc	15	2x drink containers, 2x food packaging, 2x gloves, 2x oil contaminated waste, 4x grease tubes, 3 oily rags, detonation cords	No	-	-	-	No	-	-	-
2023-02-26	Landfill	Yes	Cigarette packaging, drink containers, food packaging, gloves	5	2x food packaging	No	-	-	-	No	-	-	-
2023-03-01	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-05	Landfill	Yes	PPE	3	Coveralls, boots, hard hat)	No	-	-	-	No	-	-	-
2023-03-08	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-12	Landfill	Yes	Aerosol can, food packaging, oil contaminated waste, hydrocarbon container	4	-	No	-	-	-	No	-	-	-
2023-03-15	Landfill	Yes	Aerosol cans, drink containers, food packaging, gloves, oil contaminated waste, hydrocarbon containers	13	1x aerosol, 3x drink containers, 1x food packaging, 6x gloves,	No	-	-	-	No	-	-	-
2023-03-18	Landfill	Yes	Cigarette packaging, drink containers, gloves, hydrocarbon containers, oily rags	21	1x cigarette package, 10x drink containers, 4x gloves, 5x oily rags	No	-	-	-	No	-	-	-

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2023-03-22	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-25	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-29	Landfill	Yes	Drink containers, food packaging, gloves, oil contaminated waste	8	3x drink containers, 2x food packaging, 2x gloves	No	-	-	-	No	-	-	-
2023-04-01	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-05	Landfill	Yes	Aerosol cans, gloves	4	-	No	-	-	-	No	-	-	-
2023-04-09	Landfill	Yes	Drink containers, food packaging, gloves, oily rags, misc	41	10x drink containers, 8x gloves, 20 ANFO bags	No	-	-	-	No	-	-	-
2023-04-12	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-16	Landfill	Yes	Drink containers	8	-	No	-	-	-	No	-	-	-
2023-04-19	Landfill	Yes	Drink containers	0	-	No	-	-	-	No	-	-	-
2023-04-21	Landfill	Yes	Drink containers, food packaging	8	7x drink containers	No	-	-	-	No	-	-	-
2023-04-22	Landfill	Yes	PPE	2	Hard hat and half mask	No	-	-	-	No	-	-	-
2023-04-29	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-03	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-06	Landfill	Yes	Aerosol cans, cigarette butts, cigarette packaging, drink containers, food packaging, gloves	5x drink containers, 30x gloves	-	No	-	-	-	No	-	-	-
2023-05-08	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-11	Landfill	Yes	Oil contaminated waste	1	-	No	-	-	-	No	-	-	-
2023-05-13	Landfill	Yes	Cigarette packaging, drink containers, food packaging, gloves, oily rags	10	5x drink containers	No	-	-	-	No	-	-	-
2023-05-17	Landfill	Yes	Food, food packaging, gloves, hydrocarbon container	6	3x gloves	No	-	-	-	No	-	-	-
2023-05-20	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-24	Landfill	Yes	Food packaging	2	-	No	-	-	-	No	-	-	-
2023-05-27	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-31	Landfill	Yes	Cigarette packaging, drink containers, aerosol can	18	7x cigarette packaging, 10x drink containers	No	-	-	-	No	-	-	-
2023-06-03	Landfill	Yes	Aerosol cans, cigarette packaging, drink containers, gloves, PPE	29	15x drink containers, 10x gloves	No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2023-06-07	Landfill	Yes	Cigarette packaging, drink containers, food, food packaging, gloves, PPE	24	10x drink containers, 7x gloves	No	-	-	-	No	-	-	-
2023-06-10	Landfill	Yes	Cigarette butts, cigarette packaging, drink containers, gloves	19	10x drink containers, 5x gloves	No	-	-	-	No	-	-	-
2023-06-14	Landfill	Yes	Cigarette packaging, drink containers, food packaging, gloves	8	4x gloves	No	-	-	-	No	-	-	-
2023-06-18	Landfill	Yes	Gloves	2	-	No	-	-	-	No	-	-	-
2023-06-21	Landfill	Yes	Cigarette packaging, drink containers	3	-	No	-	-	-	No	-	-	-
2023-06-24	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-06-28	Landfill	Yes	Cigarette packaging, gloves	9	7x gloves	No	-	-	-	No	-	-	-
2023-07-01	Landfill	Yes	Drink containers, food packaging, gloves	20	15x gloves, 3x food packaging	No	-	-	-	No	-	-	-
2023-07-05	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-10	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-12	Landfill	Yes	Aerosol cans, drink containers, gloves, hydrocarbon containers, oily rags, PPE	22	6x drink containers, 4x grease tubes, 4x PPE shirts	No	-	-	-	No	-	-	-
2023-07-16	Landfill	Yes	Drink containers, oil contaminated waste, PPE	9	-	No	-	-	-	No	-	-	-
2023-07-19	Landfill	Yes	Drink containers, food packaging	5	-	No	-	-	-	No	-	-	-
2023-07-22	Landfill	Yes	Hydrocarbon containers, PPE	5	5x PPE	No	-	-	-	No	-	-	-
2023-07-26	Landfill	Yes	Drink containers. Food packaging, gloves, oil contaminated waste	17	4x food packaging, 9x gloves	No	-	-	-	No	-	-	-
2023-07-29	Landfill	Yes	Hydrocarbon containers	5	-	No	-	-	-	No	-	-	-
2023-08-02	Landfill	Yes	Cigarette packaging, drink containers, gloves	10	7x gloves	No	-	-	-	No	-	-	-
2023-08-05	Landfill	Yes	Cigarette packaging, drink containers, food packaging, gloves	34	15x drink containers, 15x gloves	No	-	-	-	No	-	-	-
2023-08-09	Landfill	Yes	Drink containers, glove	6	5x drink containers	No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2023-08-12	Landfill	Yes	Cigarette packaging, drink containers, food packaging, gloves	7	-	No	-	-	-	No	-	-	-
2023-08-16	Landfill	Yes	Cigarette packaging, drink containers	2	-	No	-	-	-	No	-	-	-
2023-08-19	Landfill	Yes	Cigarette packaging, drink containers, food, oil contaminated waste, PPE	9	5x drink containers	No	-	-	-	No	-	-	-
2023-08-23	Landfill	Yes	Aerosol can, cigarette butts, cigarette packaging, drink containers, food packaging, gloves, misc	20	5x drink containers, 5x gloves, 1x medical mask	No	-	-	-	No	-	-	-
2023-08-26	Landfill	Yes	Aerosol can, battery, drink containers, food packaging, gloves, oil product, misc	50	25x drink containers, 16x gloves. 4x medical masks	No	-	-	-	No	-	-	-
2023-08-30	Landfill	Yes	Drink containers, gloves, misc	11	5x medical masks	No	-	-	-	No	-	-	-
2023-09-02	Landfill	Yes	Aerosol cans, battery, cigarette butt, drink containers, food packaging, gloves, misc	32	9x drink containers, 16x gloves, 1x microwave	No	-	-	-	No	-	-	-
2023-09-06	Landfill	Yes	Drink containers, food packaging, gloves, oil containers, PPE	35	25x gloves, 7x drink containers	No	-	-	-	No	-	-	-
2023-09-09	Landfill	Yes	Drink containers, food packaging, gloves	27	11x drink containers, 14x gloves	No	-	-	-	No	-	-	-
2023-09-13	Landfill	Yes	Cigarette packaging, drink containers, food packaging, gloves, PPE	30	10x drink containers. 11x gloves, 5x food packaging	No	-	-	-	No	-	-	-
2023-09-16	Landfill	Yes	Cigarette packaging, drink containers, food packaging, gloves	20	4x drink containers, 6x food packaging, 7x gloves	No	-	-	-	Yes	Grizzly Bear	Scat	-
2023-09-20	Landfill	Yes	Drink containers, gloves, misc	21	4x gloves, 15x ear plugs	No	-	-	-	No	-	-	-
2023-09-23	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-27	Landfill	Yes	Aerosol can, drink container, food packaging, gloves, misc	15	6x gloves, 5x ear plugs	No	-	-	-	No	-	-	-
2023-09-30	Landfill	Yes	Cigarette packaging, drink containers, food packaging, PPE	37	14x drink containers, 15x food packaging, 5x cigarette packaging	Yes	Raven	4	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
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2023-10-04	Landfill	Yes	Drink containers, food, food packaging, gloves, PPE	29	11x drink containers, 9x gloves, 4x food packaging, 4x PPE	No	-	-	-	No	-	-	-
2023-10-07	Landfill	Yes	Drink container, PPE	4	-	No	-	-	-	No	-	-	-
2023-10-11	Landfill	Yes	Drink containers, gloves	11	6x drink containers, 5x gloves	No	-	-	-	No	-	-	-
2023-10-14	Landfill	Yes	Cigarette packaging, drink containers, gloves	12	7x drink containers, 4x gloves	No	-	-	-	No	-	-	-
2023-10-18	Landfill	Yes	Cigarette packaging, drink containers, food packaging, oil containers	10	4x drink containers, 4x oil containers	No	-	-	-	No	-	-	-
2023-10-21	Landfill	Yes	Gloves, misc	5	1x medical mask, 2x ear plugs	No	-	-	-	No	-	-	-
2023-10-25	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-28	Landfill	Yes	Drink containers, food, food packaging, gloves	20	7x drink containers, 8x food packaging	No	-	-	-	No	-	-	-
2023-11-02	Landfill	Yes	Cigarette packaging, drink container, food packaging, gloves	11	4x food packaging, 5x gloves	Yes	Raven	1	-	No	-	-	-
2023-11-04	Landfill	Yes	Drink containers, gloves	8	-	No	-	-	-	No	-	-	-
2023-11-07	Landfill	Yes	Drink container	0	-	No	-	-	-	No	-	-	-
2023-11-11	Landfill	No	-	0	-	No	-	-	-	Yes	Fox	Tracks	-
2023-11-15	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-18	Landfill	Yes	Cigarette packaging, drink containers, food packaging	17	9x drink containers, 4x cigarette packaging	No	-	-	-	Yes	Fox	Tracks	-
2023-11-22	Landfill	Yes	Cigarette packaging, drink containers, food	6	-	No	-	-	-	No	-	-	-
2023-11-25	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-29	Landfill	Yes	Drink containers, food packaging, gloves	12	5x drink containers	No	-	-	-	No	-	-	-
2023-12-02	Landfill	Yes	Drink container, food packaging	2	-	No	-	-	-	Yes	Fox	Tracks	-
2023-12-06	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-09	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-13	Landfill	Yes	Drink container	1	-	No	-	-	-	Yes	Fox	Tracks	-
2023-12-16	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-20	Landfill	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-24	Landfill	Yes	Food, gloves	6	-	No	-	-	-	No	-	-	-
2023-12-27	Landfill	Yes	Food packaging	3	-	No	-	-	-	No	-	-	-
2023-12-31	Landfill	Yes	Gloves	3	-	No	-	-	-	Yes	Fox	Tracks	-

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2023-01-01	Underground	Yes	Drink Container, Food Packaging, Cigarette Butts	7	Coffee cup, plate, 5 cigarette butts	No	-	-	-	-	-	-	-
2023-01-04	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-09	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-11	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-15	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-18	Underground	Yes	Batteries	10	-	No	-	-	-	No	-	-	-
2023-01-22	Underground	Yes	Cigarette Butts	10+	-	No	-	-	-	No	-	-	-
2023-01-25	Underground	Yes	Cigarette Butts	10+	-	No	-	-	-	No	-	-	-
2023-01-29	Underground	Yes	Cigarette Butts, Oily Rag	12	11 butts, 1 oily rag	No	-	-	-	No	-	-	-
2023-02-01	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-05	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-08	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-12	Underground	No	-	0	-	Yes	Raven	1	-	No	-	-	-
2023-02-15	Underground	Yes	Hydrocarbon containers, oily rags, aerosol cans	16	4x aerosol cans, 2x grease tubes, 10x oily rags	No	-	-	-	No	-	-	-
2023-02-19	Underground	Yes	Drink containers, gloves, misc	11	5x drink containers,5x explosives bags, 1x gloves	No	-	-	-	No	-	-	-
2023-02-22	Underground	Yes	Aerosol can, hydrocarbon container, oily rag	3	1x aerosol can, 1x grease tube, 1x oily rag	No	-	-	-	No	-	-	-
2023-02-26	Underground	Yes	Gloves, oily rags	2	Glove, rag	No	-	-	-	No	-	-	-
2023-03-01	Underground	Yes	Gloves	1		No	-	-	-	No	-	-	-
2023-03-05	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-08	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-12	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-15	Underground	Yes	Aerosol cans, food packaging, misc	7	3x aerosols, 2x food packaging, 2x medical masks	No	-	-	-	No	-	-	-
2023-03-18	Underground	Yes	Drink container, gloves, oil contaminated waste, oily rags	14	1x drink container, 5x gloves, 3x oil contaminated waste, 5x oily rags	No	-	-	-	No	-	-	-
2023-03-22	Underground	Yes	Food packaging, PPE	2	Dirty coveralls	No	-	-	-	No	-	-	-
2023-03-25	Underground	Yes	Drink containers, gloves, oily rags	11	8x drink containers, 2x oily rags	No	-	-	-	No	-	-	-
2023-03-29	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-01	Underground	Yes	Cigarette butts, food, gloves	5	-	No	-	-	-	No	-	-	-
2023-04-05	Underground	No	-	0	-	No	-	-	-	No	-	-	-

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2023-04-09	Underground	Yes	Drink containers, food packaging, gloves, PPE	7	3x food packaging, 1x coveralls	No	-	-	-	No	-	-	-
2023-04-13	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-16	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-19	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-21	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-22	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-29	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-03	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-06	Underground	Yes	Drink container, gloves, oil contaminated waste, hydrocarbon containers	8	4x hydrocarbon containers	No	-	-	-	No	-	-	-
2023-05-08	Underground	Yes	Gloves	2	-	No	-	-	-	No	-	-	-
2023-05-11	Underground	Yes	Drink containers, glove	2	-	No	-	-	-	No	-	-	-
2023-05-13	Underground	Yes	Drink container, PPE	2	-	No	-	-	-	No	-	-	-
2023-05-17	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-20	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-24	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-27	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-31	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-06-03	Underground	Yes	Gloves, PPE, explosives containers	5	-	No	-	-	-	No	-	-	-
2023-06-07	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-06-10	Underground	Yes	Aerosol can, oil contaminated waste	4	-	No	-	-	-	No	-	-	-
2023-06-14	Underground	Yes	Oily rag	1	-	No	-	-	-	No	-	-	-
2023-06-18	Underground	Yes	Drink container	1	-	No	-	-	-	No	-	-	-
2023-06-21	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-06-24	Underground	Yes	Drink container	1	-	No	-	-	-	No	-	-	-
2023-06-28	Underground	Yes	Drink container, food packaging, gloves	4	-	No	-	-	-	No	-	-	-
2023-07-01	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-05	Underground	Yes	Drink container, gloves	14	12x gloves	No	-	-	-	No	-	-	-
2023-07-10	Underground	Yes	Drink container	1	-	No	-	-	-	No	-	-	-
2023-07-12	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-16	Underground	Yes	Drink container	1	-	No	-	-	-	No	-	-	-
2023-07-19	Underground	Yes	Drink container	1	-	No	-	-	-	No	-	-	-
2023-07-22	Underground	No	-	0	-	No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2023-07-26	Underground	Yes	Glove	1	-	No	-	-	-	No	-	-	-
2023-07-29	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-02	Underground	Yes	Food packaging, gloves	12	10x gloves	No	-	-	-	No	-	-	-
2023-08-05	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-09	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-12	Underground	Yes	Gloves	2	-	No	-	-	-	No	-	-	-
2023-08-16	Underground	Yes	Gloves	3	-	No	-	-	-	No	-	-	-
2023-08-19	Underground	Yes	Gloves, PPE	8	-	No	-	-	-	No	-	-	-
2023-08-23	Underground	Yes	Cigarette packaging, drink containers, food packaging, glove	11	5x drink containers	Yes	Raven	2	-	No	-	-	-
2023-08-26	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-30	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-02	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-06	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-09	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-13	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-16	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-20	Underground	Yes	Drink container	1	-	No	-	-	-	No	-	-	-
2023-09-23	Underground	Yes	Gloves	2	-	No	-	-	-	No	-	-	-
2023-09-27	Underground	Yes	Drink containers, gloves, misc	6	2x medical masks	No	-	-	-	No	-	-	-
2023-09-30	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-04	Underground	Yes	Drink containers, gloves	4	-	Yes	Raven	1	-	No	-	-	-
2023-10-07	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-11	Underground	Yes	Drink containers, gloves	5	-	No	-	-	-	No	-	-	-
2023-10-14	Underground	Yes	Gloves	2	-	No	-	-	-	No	-	-	-
2023-10-18	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-21	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-25	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-28	Underground	No	-	0	-	Yes	Raven	1	-	No	-	-	-
2023-11-02	Underground	Yes	Drink containers, gloves	9	7x gloves	No	-	-	-	No	-	-	-
2023-11-04	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-07	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-11	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-15	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-18	Underground	No	-	0	-	No	-	-	-	Yes	Fox	Tracks	-

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2023-11-22	Underground	Yes	Aerosol can	1	-	No	-	-	-	No	-	-	-
2023-11-25	Underground	No	-	0	-	No	-	-	-	Yes	Rabbit	Tracks	-
2023-11-29	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-02	Underground	Yes	Gloves	3	-	No	-	-	-	No	-	-	-
2023-12-06	Underground	Yes	Oil products	4	-	No	-	-	-	No	-	-	-
2023-12-09	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-13	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-16	Underground	Yes	Gloves	8	-	No	-	-	-	No	-	-	-
2023-12-20	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-24	Underground	Yes	Glove	1	-	No	-	-	-	Yes	Fox	Tracks	-
2023-12-27	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-31	Underground	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-01	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Fox or Hare	Footprints	-
2023-01-04	Waste Transfer Area	No	-	0	-	Yes	Raven	3	-	No	-	-	-
2023-01-09	Waste Transfer Area	Yes	Hydrocarbon Container	1	Diesel Exhaust Fluid container in non-burn bin	Yes	Raven	3	-	No			
2023-01-11	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-15	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-18	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Fox	Tracks	-
2023-01-22	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Fox	Tracks	-
2023-01-25	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Wolverine	Tracks	-
2023-01-29	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Wolverine	Tracks	-
2023-02-01	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-06	Waste Transfer Area	No	-	0	-	Yes	Raven	2	-	No	-	-	-
2023-02-08	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-12	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-15	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Wolverine	Tracks	-
2023-02-19	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-22	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Fox	Tracks	-
2023-02-26	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Fox	Tracks	-
2023-03-01	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-05	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-08	Waste Transfer Area	Yes	Cigarette packaging, drink containers, food packaging, gloves	17	1x cigarette packaging, 5x drink containers, 1x food packaging, 10x gloves	No	-	-	-	Yes	Wolverine and Fox	Tracks	-
2023-03-12	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-15	Waste Transfer Area	Yes	Gloves	2	-	No	-	-	-	No	-	-	-
2023-03-18	Waste Transfer Area	Yes	Cigarette packaging, drink containers, food packaging, gloves	16	2x cigarette packaging, 2x drink containers, 10x food packaging, 2x gloves	No	-	-	-	No	-	-	-

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2023-03-22	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-25	Waste Transfer Area	Yes	Food packaging, gloves	4	-	No	-	-	-	No	-	-	-
2023-03-29	Waste Transfer Area	Yes	Drink containers, food packaging, gloves	8	4x drink containers, 2x food packaging, 2x gloves	No	-	-	-	No	-	-	-
2023-04-01	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-05	Waste Transfer Area	Yes	Gloves	4	-	No	-	-	-	No	-	-	-
2023-04-11	Waste Transfer Area	Yes	Cigarette butts, gloves, food packaging	61	40x butts, 20x gloves	No	-	-	-	No	-	-	-
2023-04-13	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-16	Waste Transfer Area	Yes	Cigarette packaging, drink containers, gloves	13	10x gloves	No	-	-	-	No	-	-	-
2023-04-19	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-21	Waste Transfer Area	Yes	Cigarette packaging, drink containers, gloves	27	5x drink containers, 20x gloves	No	-	-	-	No	-	-	-
2023-04-22	Waste Transfer Area	Yes	Food, food packaging, gloves, oil contaminated waste	9	4x gloves, 3x food packaging	No	-	-	-	No	-	-	-
2023-04-29	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-03	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-06	Waste Transfer Area	Yes	Drink containers, gloves, oily rags, hydrocarbon containers	16	7x drink container, 3x gloves, 4x hydrocarbon container	Yes	Raven	1	-	No	-	-	-
2023-05-08	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-11	Waste Transfer Area	Yes	Cigarette packaging, drink container, food, gloves, oily rags	14	-	No	-	-	-	No	-	-	-
2023-05-13	Waste Transfer Area	Yes	Food, food packaging, gloves, PPE	5	-	No	-	-	-	No	-	-	-
2023-05-17	Waste Transfer Area	Yes	Cigarette packaging, drink container, food packaging, gloves	8	3x cigarette packaging	Yes	Raven	1	-	No	-	-	-
2023-05-20	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-24	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-27	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-31	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-06-03	Waste Transfer Area	Yes	Gloves	3	-	No	-	-	-	No	-	-	-
2023-06-07	Waste Transfer Area	Yes	Cigarette butts, cigarette packaging, drink containers, food, food packaging, gloves	20	10x gloves, 3x drink containers	No	-	-	-	No	-	-	-

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2023-06-10	Waste Transfer Area	Yes	Cigarette packaging, drink containers, food packaging, gloves	24	5x cigarette packaging, 9x drink containers, 5x food packaging, 5x gloves	No	-	-	-	No	-	-	-
2023-06-14	Waste Transfer Area	No	-	0	-	Yes	Gull	1	-	No	-	-	-
2023-06-18	Waste Transfer Area	Yes	Drink containers, food packaging	6	4x food packaging	No	-	-	-	No	-	-	-
2023-06-21	Waste Transfer Area	Yes	Cigarette packaging, drink container	2	-	No	-	-	-	No	-	-	-
2023-06-24	Waste Transfer Area	Yes	Cigarette packaging, food, food packaging, gloves	31	5x food, 10x food packaging, 15x gloves	No	-	-	-	No	-	-	-
2023-06-28	Waste Transfer Area	Yes	Drink container, gloves. misc	8	6x gloves, coffee maker	No	-	-	-	No	-	-	-
2023-07-01	Waste Transfer Area	Yes	Drink container, food packaging, gloves, misc	13	8x gloves, 2x medical masks	No	-	-	-	No	-	-	-
2023-07-05	Waste Transfer Area	Yes	Cigarette packaging, food packaging, gloves	26	21x food packaging	No	-	-	-	No	-	-	-
2023-07-09	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-12	Waste Transfer Area	Yes	Drink containers, glove,	4	-	No	-	-	-	No	-	-	-
2023-07-15	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-19	Waste Transfer Area	Yes	Cigarette packaging, food packaging, gloves	3	-	No	-	-	-	No	-	-	-
2023-07-22	Waste Transfer Area	Yes	Drink containers, food	5	-	No	-	-	-	No	-	-	-
2023-07-26	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-29	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-02	Waste Transfer Area	Yes	Cigarette packaging, drink containers, glove	4	-	No	-	-	-	No	-	-	-
2023-08-05	Waste Transfer Area	Yes	Drink containers, glove, ear plug	4	2x drink containers	No	-	-	-	No	-	-	-
2023-08-29	Waste Transfer Area	Yes	Drink containers, food packaging, gloves	19x drink containers	-	No	-	-	-	No	-	-	-
2023-08-12	Waste Transfer Area	Yes	Cigarette packaging, drink containers, food packaging, gloves	12	6x drink containers	No	-	-	-	No	-	-	-
2023-08-16	Waste Transfer Area	Yes	Hydrocarbon containers	2	-	No	-	-	-	No	-	-	-
2023-08-19	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-23	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-26	Waste Transfer Area	Yes	Drink container, food packaging, misc	5	2x medical masks	No	-	-	-	No	-	-	-
2023-08-30	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-02	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-

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2023-09-06	Waste Transfer Area	Yes	Drink containers, food packaging, gloves	7	4x drink containers	No	-	-	-	No	-	-	-
2023-09-09	Waste Transfer Area	Yes	Cigarette packaging, drink containers, food packaging, gloves	11	7x gloves	No	-	-	-	No	-	-	-
2023-09-13	Waste Transfer Area	Yes	Cigarette packaging, drink containers, food packaging, gloves	10	-	No	-	-	-	No	-	-	-
2023-09-16	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-20	Waste Transfer Area	Yes	Cigarette packaging, drink containers, gloves, misc	13	3x cigarette packaging, 5x earplugs	No	-	-	-	No	-	-	-
2023-09-23	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-27	Waste Transfer Area	Yes	Drink containers, food packaging, glove, misc	31	25x ear plugs, 4x drink containers	No	-	-	-	No	-	-	-
2023-09-30	Waste Transfer Area	Yes	Cigarette packaging, food packaging, glove	5	-	No	-	-	-	No	-	-	-
2023-10-04	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-07	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-11	Waste Transfer Area	Yes	Drink container, PPE	2	-	No	-	-	-	No	-	-	-
2023-10-14	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-18	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-21	Waste Transfer Area	Yes	Aerosol can	1	-	No	-	-	-	No	-	-	-
2023-10-25	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-28	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-02	Waste Transfer Area	Yes	Drink containers, food packaging, gloves	6	-	No	-	-	-	No	-	-	-
2023-11-04	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-07	Waste Transfer Area	Yes	Cigarette packaging	1	-	No	-	-	-	No	-	-	-
2023-11-11	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-15	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-18	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Fox	Tracks	-
2023-11-22	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-25	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-29	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-02	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-06	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-09	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-13	Waste Transfer Area	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-16	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Fox	Tracks	3x
2023-12-20	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Fox	Tracks	2x
2023-12-24	Waste Transfer Area	No	-	0	-	No	-	-	-	Yes	Fox	Tracks	2x

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2023-12-27	Waste Transfer Area	Yes	Cigarette packaging, drink containers, food packaging	8	-	No	-	-	-	Yes	Fox	Tracks	-
2023-12-31	Waste Transfer Area	Yes	Food packaging, gloves	4	-	No	-	-	-	Yes	Fox	Tracks	-
2023-01-01	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-04	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-09	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-11	A21	Yes	Hydrocarbon Contaminated Waste	2	2x oil-contaminated PPE	No	-	-	-	No	-	-	-
2023-01-15	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-18	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-22	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-01-25	A21	Yes	Aerosol Can	1	-	No	-	-	-	No	-	-	-
2023-01-29	A21	Yes	Drink Container	1	-	No	-	-	-	No	-	-	-
2023-02-01	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-06	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-08	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-12	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-15	A21	Yes	Gloves	3	-	No	-	-	-	No	-	-	-
2023-02-19	A21	Yes	Oily rags, drink containers	4	3x oily rags, 1x drink container	No	-	-	-	No	-	-	-
2023-02-22	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-02-26	A21	Yes	Drink container, gloves, oily rag, misc	4	1x drink container, 1x glove, 1x oily rag, 1x explosive bag	No	-	-	-	No	-	-	-
2023-03-01	A21	Yes	Drink containers, oily rags	5	3x drink containers, 2x oily rags	No	-	-	-	No	-	-	-
2023-03-05	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-08	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-12	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-15	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-18	A21	Yes	Cigarette packaging	1	-	No	-	-	-	No	-	-	-
2023-03-22	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-25	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-03-29	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-01	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-05	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-09	A21	Yes	Drink containers, food packaging, gloves	7	4x drink containers	No	-	-	-	No	-	-	-

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2023-04-13	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-16	A21	Yes	Cigarette packaging, oily rags	9	8x oily rags	No	-	-	-	No	-	-	-
2023-04-19	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-04-22	A21	Yes	Aerosol can, drink container	2	-	No	-	-	-	No	-	-	-
2023-04-29	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-03	A21	Yes	Drink containers	2	-	No	-	-	-	No	-	-	-
2023-05-06	A21	Yes	Drink containers, cigarette packaging, misc	6	3x drink containers, 2x empty explosives boxes	No	-	-	-	No	-	-	-
2023-05-08	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-11	A21	Yes	Drink container	1	-	No	-	-	-	No	-	-	-
2023-05-13	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-17	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-20	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-24	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-05-27	A21	Yes	Food packaging	1	-	No	-	-	-	No	-	-	-
2023-05-31	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-06-03	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-06-07	A21	Yes	Drink containers	3	-	No	-	-	-	No	-	-	-
2023-06-10	A21	Yes	Drink container, gloves, oil contaminated waste	4	-	No	-	-	-	No	-	-	-
2023-06-14	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-06-18	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-06-21	A21	Yes	Drink container	1	-	No	-	-	-	No	-	-	-
2023-06-24	A21	Yes	Cigarette butts, gloves	12	10x gloves	No	-	-	-	No	-	-	-
2023-06-28	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-01	A21	Yes	Drink container, gloves	2	-	No	-	-	-	No	-	-	-
2023-07-05	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-09	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-12	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-15	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-19	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-22	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-26	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-07-29	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-02	A21	Yes	Cigarette packaging, food packaging, gloves	13	10x food packaging	No	-	-	-	No	-	-	-
2023-08-05	A21	Yes	Food packaging, glove	2	-	No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2023-08-09	A21	Yes	Cigarette packaging	1	-	No	-	-	-	No	-	-	-
2023-08-12	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-16	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-19	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-23	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-08-26	A21	Yes	Glove	1	-	No	-	-	-	No	-	-	-
2023-08-30	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-02	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-06	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-09	A21	Yes	Drink container	1	-	No	-	-	-	No	-	-	-
2023-09-13	A21	Yes	Drink container, gloves	3	-	No	-	-	-	No	-	-	-
2023-09-16	A21	Yes	Drink containers, gloves	6	-	No	-	-	-	No	-	-	-
2023-09-20	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-23	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-27	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-09-30	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-04	A21	Yes	Batteries, glove	3	-	No	-	-	-	No	-	-	-
2023-10-07	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-11	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-14	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-18	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-21	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-25	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-10-28	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-02	A21	Yes	Drink container	1	-	No	-	-	-	No	-	-	-
2023-11-04	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-07	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-11	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-15	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-18	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-22	A21	Yes	Food	1	-	No	-	-	-	No	-	-	-
2023-11-25	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-11-29	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-02	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-06	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-09	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-13	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-16	A21	No	-	0	-	No	-	-	-	No	-	-	-

Date	Location	Attractants				Wildlife				Wildlife Sign			
		Attractants Present?	Items	Number of Items Present	Comments	Wildlife Present?	Species	# of Individuals Observed	Wildlife Comments	Wildlife Sign Observed?	Wildlife Sign Observed Species	Wildlife Sign Type	Wildlife Sign Observed Comments
2023-12-20	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-24	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-27	A21	No	-	0	-	No	-	-	-	No	-	-	-
2023-12-31	A21	No	-	0	-	No	-	-	-	No	-	-	-

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