



January 10, 2022
IAAC Registry Project #: 005694

Attention: Brent Keeping
Project Manager
Impact Assessment Agency of Canada
301-10 Barters Hill Street
St. John's, NL A1C 6M1

Dear Mr. Brent Keeping,

Reference: Valentine Gold Project – Project Refinements

The Environmental Impact Statement (EIS) for the Valentine Gold Project (the Project), submitted to the Impact Assessment Agency of Canada (IAAC) by Marathon Gold Corporation (Marathon) on September 29, 2020, is currently undergoing technical review. Given your ongoing review and in keeping with Marathon's corporate value of transparency, Marathon wishes to keep IAAC apprised of proposed Project refinements.

Project design refinements resulting from the Feasibility Study (FS) and potential implications for the EIS were submitted to federal regulators in a letter dated September 8, 2021. When Marathon submitted the letter outlining the Project design refinements resulting from the FS and potential implications for the EIS, no further refinements were anticipated by Marathon during the environmental assessment process. Subsequently, Marathon has continued to consult with Newfoundland and Labrador Department of Fisheries, Forestry and Agriculture (NLDFFA)-Wildlife Division, including reviewing mitigation in the context of the Caribou Protection and Environmental Effects Monitoring Plan (CPEEMP) to further reduce the risk of potential effects of the Project on caribou.

Specifically, alternatives to the current layout of Project infrastructure in the vicinity of the Marathon pit have recently been identified and discussed with NLDFFA-Wildlife Division to improve the permeability of the site for Buchans herd caribou migrating through the Project Area. Based on these discussions, Marathon has determined it to be technically and environmentally feasible to refine the layout/location of the low-grade ore and overburden stockpiles and the waste rock pile (dividing the waste rock pile into two piles to be located to the northwest and southeast of the open pit) associated with the Marathon pit. These refinements will provide wider and more direct travel paths within the primary migratory corridor both during operation of the mine, and through rehabilitation, closure and post-closure. Additional details on these Project refinements, rationale for these refinements, and implications for the environmental effects predicted for the Valued Components (VCs) assessed in the EIS, are provided in Attachment A.

Given the conservative assumptions adopted in the EIS and the relatively minor nature of the refinements, for all VCs the predicted residual adverse effects, mitigation and monitoring as described in the EIS are not affected by the proposed refinements:

- For the atmospheric environment, refinements to the site layout do not alter the assessment findings regarding a change in greenhouse gas emissions or light levels within the Local Assessment Area. Slight changes in air and sound quality along the boundary of the mine site and potentially further downwind are expected, however do not alter the overall conclusions of the assessment.
- The implications of the proposed refinements on groundwater and surface water resources and fish and fish habitat required additional analysis, including review of the water resources models and results of the assimilative capacity study with respect to Victoria River. The analysis demonstrated that no substantive changes to infiltration, groundwater and seepage, surface runoff, water balance and geochemistry, effluent quality and ultimately to the assimilative capacity assessment of the VALP3 tributary and Valentine Lake receiver are anticipated as a result of the proposed changes to the overburden and low-grade ore stockpiles. With respect to the relocated portion of the waste rock pile, the infiltration and seepage characteristics would be similar to that assessed for the single waste rock pile. Additionally, given Marathon is proposing to manage the expected minor volume of potentially acid generating (PAG) waste rock by blending and encapsulation by non-PAG waste rock with excess of neutralization potential, it is expected that the relocated waste rock pile will perform similarly geochemically to the results modelled for the original waste rock pile and thus runoff and seepage quality will remain the same as modeled in the EIS. Finally, the results of the assimilative capacity study review are consistent with those presented in the EIS with respect to the extent of the ultimate mixing zones. Therefore, the proposed Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Groundwater Resources and Surface Water Resources.
- For fish and fish habitat, refinements to the footprint and location of the waste rock pile are not expected to change predictions of mass loadings to surface water receivers, and these do not alter the overall conclusions of the assessment of Fish and Fish Habitat.
- There are no changes to the EIS assessment of habitat loss and/or alteration for terrestrial VCs, given that the Project refinements will occur within the Project Area and that the EIS conservatively assumed that all habitat would be lost within the Project Area.
- There are no changes to the EIS assessment of residual adverse effects for Indigenous groups, the socio-economic environment, or historic resources, as the refinements occur within the mine site and will not result in a change in planned Project activities. As noted above, there are also no substantive changes to the assessment of Project effects on atmospheric resources, groundwater resources, surface water resources, or fish and fish habitat. Therefore, the characterization of residual adverse effects on Indigenous and non-Indigenous land and resource users would remain unchanged.

The proposed Project refinements related to proposed caribou mitigation do not constitute a substantive change to the scope of the Project, either individually or in combination. Given the conservative approach to the effects assessment employed in the EIS, the information

presented in Attachment A demonstrates that no further environmental assessment is required related to these proposed Project refinements. The Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS.

Should you have any questions or concerns regarding the above or require additional information, please do not hesitate to contact the undersigned.

Regards,

Marathon Gold Corporation

<Original signed by>

Tara Oak

Manager, Environmental Assessment

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Email: toak@marathon-gold.com

Attachment: Attachment A – Project Refinements related to Caribou Mitigation, Supplemental Information

- c. Joanne Sweeney, Director, Environmental Assessment Division, Department of Environment and Climate Change
- Eric Watton, Environmental Scientist, Environmental Assessment Division, Department of Environment and Climate Change
- James Powell, Vice-President of Regulatory and Government Affairs, Marathon Gold Corp

ATTACHMENT A

**Project Refinements related to Caribou Mitigation,
Supplemental Information**

**Valentine Gold Project: Project
Refinements related to Caribou
Mitigation, Supplemental
Information**



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1.0 PROJECT REFINEMENTS AND RATIONALE

Project refinements are a necessary and expected aspect in the evolution of a mining project throughout the progression of the Environment Assessment (EA), planning and permitting stages of a project. Refinements to the Valentine Gold Project description have been made since it was presented in Chapter 2 of the EIS. This refinement pertains to the layout of infrastructure within the Project Area, specifically near the Marathon pit area, which has been identified as an obstacle to migrating caribou. Through the review of mitigation measures in the context of the Caribou Protection and Environmental Effects Monitoring Plan (CPEEMP) and consultation with the Newfoundland and Labrador Department of Fisheries, Forestry and Agriculture (NLDDFA)-Wildlife Division, alternatives to the current layout for the low-grade ore (LGO) stockpile, overburden stockpile and waste rock pile were discussed to improve the permeability of the site for caribou migrating through the Project Area.

Based on these discussions, Marathon Gold Corporation (Marathon) has determined it to be technically and environmentally feasible to refine the layout/location of the LGO and overburden stockpiles and the waste rock pile (dividing the waste rock pile into two piles to be located to the northwest and southeast of the open pit). These refinements will provide wider and more direct travel paths within the primary migratory corridor both during operation of the mine, and through rehabilitation, closure and post-closure. Combining specific temporal mitigation measures (e.g., reduction in on-site activity during the sensitive migratory period) to reduce sensory disturbances with the change in the physical layout of the infrastructure set within the primary migratory corridor, it is expected that the migratory path will be more functional than that originally anticipated based on the site layout presented in the EIS and EIS Amendment. The refined site layout has been reviewed and discussed with NLDDFA-Wildlife Division and deemed to be an improved approach for migrating caribou. The refined site layout has also been discussed with other members of the Environmental Assessment Committee, as applicable.

Dividing the Marathon waste rock pile will create a combined footprint that is approximately 13% larger than that of the original waste rock pile. Approximately 75% of the Marathon waste rock pile footprint (90% of the volume) would be located on the northwest side of the pit and nearly 25% of the footprint (10% of the volume) southeast of the pit (See Figure 1-1). The proposed shape of the two waste rock piles will also form a permanent diversion around the open pit, reducing the potential that migrating caribou would directly encounter the open pit. In addition, the LGO stockpile will be shifted 450 m to the southwest and will increase in footprint from 20 hectares to 25 hectares (a 25% increase). The overburden stockpile will also be shifted approximately 125 m to the southwest, with the footprint being reduced by approximately 10%. The refinements to the stockpiles and waste rock pile will also require adjustments to the water management infrastructure associated with these Project features as further discussed in Section 2.2. Note that all the proposed Project refinements occur within the Project Area assessed in the EIS.



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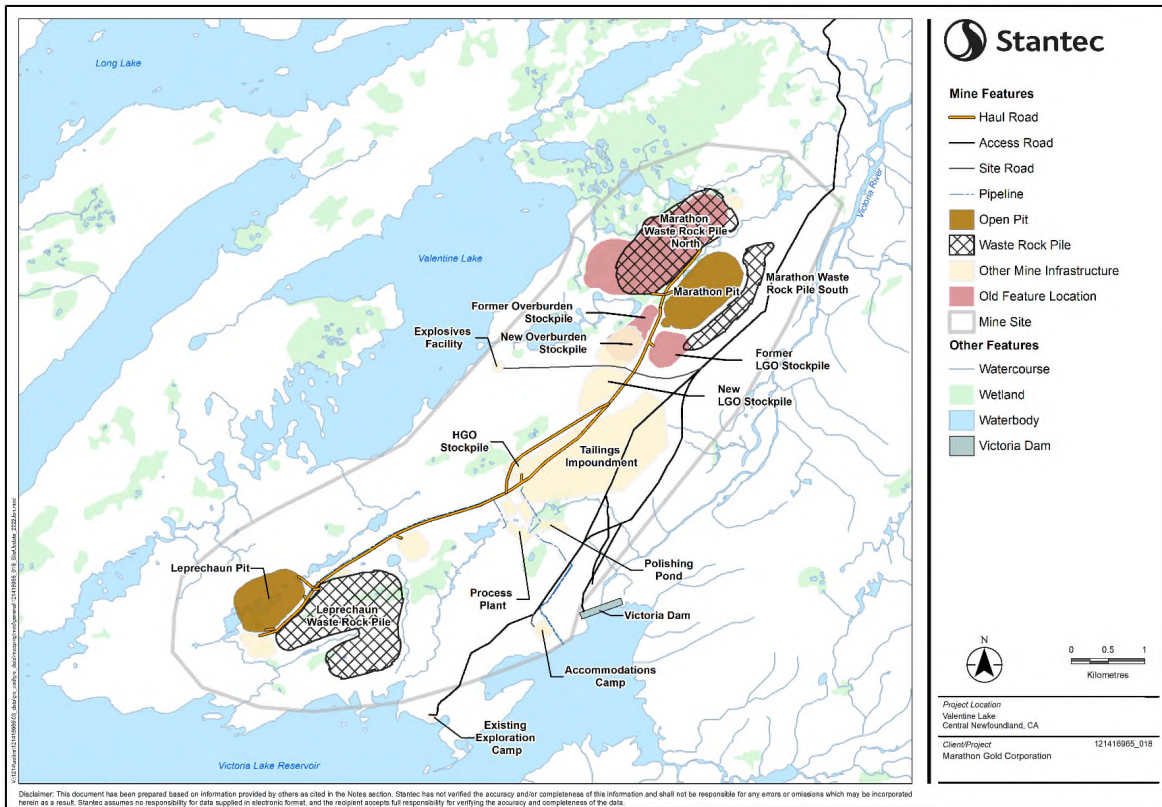


Figure 1-1 Updated Project Layout



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The proposed Project refinements do not constitute a substantive change to the scope of the Project, either individually or in combination. Given the conservative approach to the effects assessment employed in the EIS, the information presented in Section 2 of this document demonstrates that no further environmental assessment is required related to these proposed Project refinements. Note that Marathon does not anticipate further Project refinements during the EA process.

2.0 IMPLICATIONS FOR THE ENVIRONMENTAL ASSESSMENT

In consideration of the Project refinements described above, a review of the potential impacts to the assessment of valued components (VCs) described in the EIS has been conducted and is provided below.

Note that the geographic boundaries (i.e., Project Area, Local Assessment Areas (LAA) and Regional Assessment Areas [RAA]) described in the EIS for each VC have not changed as a result of the Project refinements, nor have the mitigation and monitoring proposed in the EIS to reduce potential adverse residual Project effects.

2.1 ATMOSPHERIC ENVIRONMENT

An assessment for Atmospheric Environment (Chapter 5) was provided in the EIS. The following effects were assessed for this VC:

- Changes in air quality
- Change in greenhouse gas (GHG) emissions
- Change in sound quality
- Change in light levels

The refinements to the site layout do not alter the findings of the EIS with respect to a change in GHG emissions or light levels within the LAA. With respect to a change in air and sound quality, the refinements to the site layout will result in slight changes to predicted concentrations and sound levels along the boundary of the mine site and potentially further downwind, however this does not change the overall conclusions of the assessment. Therefore, the Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS with respect to the Atmospheric Environment.

2.2 WATER RESOURCES

An assessment for Groundwater Resources (Chapter 6) and Surface Water Resources (Chapter 7) was provided in the EIS. The following effects were assessed for these VCs:

- Groundwater Resources
 - Change in groundwater quantity
 - Change in groundwater quality



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- Surface Water Resources
 - Change in surface water quantity
 - Change in surface water quality

To determine whether the proposed refinements would result in changes to these effects as presented in the EIS, further analysis was conducted as described below.

2.2.1 Relocation of the Overburden and Low-Grade Ore Stockpiles

The overburden and LGO stockpiles both drain currently to Pond MA-SP-01AB, adjacent to the overburden stockpile. These stockpiles would continue to drain to MA-SP-01AB with the proposed refinements. As the total area draining the LGO and overburden stockpile areas will remain similar as previously assessed and presented, no change in pond MA-SP-01AB is required.

Groundwater in the area of the overburden and LGO stockpiles drains northwest from the ridge to the east forming the local topographic high towards Valentine Lake ValP3 pond and tributary. Perimeter drains would route surface runoff and intercept shallow groundwater as is proposed in the current design. As the stockpile materials, pile design, and placement methods are still the same, a slight adjustment in the shape and/or height does not result in a change in model assumptions of infiltration and seepage characteristics. Therefore, it is anticipated that no new or expanded groundwater effects would be experienced. Similarly, from a Water Balance/Water Quality (WB/WQ) modelling perspective a relocation of the LGO stockpile and readjustment of the overburden stockpile with the same areal footprint and tonnages is expected to yield similar WB/WQ model results meaning similar Monte Carlo simulation results with sedimentation pond inflow water quality meeting MDMER limits. Finally, as sedimentation ponds MA-SP-01A and 01B (refer to Water Management Plan, Appendix 2A of the EIS, Figure 4.1), both of which discharged to the same VALP3 tributary, were combined to form the MA-SP-01AB pond at the feasibility stage, it is expected that MA-SP-01AB water quality would be the same as with two separate ponds and the assimilative capacity study would also yield no increase in mixing zone extent. The ultimate mixing zone boundary would remain the same as currently proposed in Valentine Lake.

No substantive changes to infiltration, groundwater and seepage, surface runoff, water balance and geochemistry, effluent quality and ultimately to the assimilative capacity assessment of the VALP3 tributary and Valentine Lake receiver are anticipated as a result of the proposed changes to the overburden and LGO stockpiles. As a result, the proposed Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Groundwater Resources and Surface Water Resources.

2.2.2 Relocated Portion of Marathon Waste Rock Pile

As shown in Figure 1.1, a portion (25% of the area) of the waste rock pile will be relocated to the southeast of the Marathon open pit. The portion of the waste rock pile to be relocated currently drains to MA-SP-02, which drains to Valentine Lake through a local tributary. Waste rock is not planned to be stored in the Marathon waste rock pile until later in 2023 and not in the pile located southeast of the open pit until early 2024. The proposed relocation of waste rock would eliminate the need for pond MA-SP-02 and the waste rock pile's southwest extent would be designed to follow the drainage divide between pond



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MA-SP-02 and the next pond to the northwest, which is MA-SP-03, to avoid stranding collected runoff and seepage and facilitating gravity drainage to MA-SP-03.

The relocated portion of the waste rock pile would be sited to the southeast of the Marathon open pit, between the pit and the ridge to the southeast forming the topographic high and local watershed divide. Drainage in the area of the proposed waste rock relocation is to the northwest down the local hill slope and towards the north and the Victoria Steadies, which drain to the Victoria River to the northeast.

As the relocated portion of waste rock is a new stockpile, an assessment of groundwater was conducted semi-quantitatively by assessing infiltration, stockpile seepage and shallow groundwater flow regimes determined for the LGO stockpile and waste rock pile, which represent the physical material characteristics of the relocated waste rock. Geotechnical test pitting conducted in support of Marathon open pit overburden stripping and dewatering indicate that overburden under the proposed waste rock stockpile is relatively shallow underlain by bedrock. In the southwest of the proposed relocated stockpile, depth to bedrock is expected to be < 0.85 m, and depth to groundwater is approximately 0.20 m. As the stockpile extends north, the depths to bedrock increase to approximately 2.0 m with depth to groundwater of approximately 0.80 m. The infiltration and seepage characteristics of the relocated stockpile would be similar to that assessed for the previous LGO stockpile and the single waste rock pile. The portion of the waste rock pile to be relocated was in an area of poorly drained ground with the groundwater surface at or near the ground surface. As a result, collection ditching was very shallow sloped and oversized to account for the poor drainage conditions. Moving the portion of the waste rock pile to the southeast of the Marathon open pit relocates this part of the pile to an area of much better drained ground, with improves gravity drainage. Thus, the relocated stockpile would infiltrate and seep similarly to the LGO stockpile and waste rock pile, but due to improved ground drainage intercepting the shallow groundwater surface with collection ditches is more technically feasible, efficient and effective.

The relocated waste rock pile can have collection ditches along the northwest, north and northeast perimeters as the site is on a slope draining naturally toward the northwest and north. Collected seepage and runoff would be directed to pond MA-SP-05, which is proposed as the Marathon open pit dewatering pond and would be expanded to accommodate the additional seepage and runoff from the relocated waste rock pile. Based on the relocated waste rock pile sizing, the pond MA-SP-05 volume capacity would have to be expanded to 80,000 m³ of active storage to accommodate the drainage from the relocated pile. Design event runoff and seepage is expected to peak at 10 m³/s. The Final Discharge Point for MA-SP-05 would remain the same.

The WB/WQ model accounts for the expected range and quantity of waste rock lithologies in a composite stockpile. Marathon is proposing to manage the expected minor volume of potentially acid generating (PAG) rock by blending and encapsulation by non-PAG rock with excess of neutralization potential. As such it is expected that the relocated waste rock pile will perform geochemically similar to the results modelled for the original waste rock pile and thus runoff and seepage quality will remain the same as modeled in the EIS.

Finally, the existing assimilative capacity model was updated to account for the new source draining to MA-SP-05 and ultimately to the Victoria Steadies and Victoria River from its previous drainage to MA-SP-02 and Valentine Lake. For normal operating conditions (average flows) water quality in the Victoria River



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meets the CWQG-FAL within 100 m of discharge into the river. For the regulatory scenario (7Q10 flow), similarly to previously presented results in the EIS, aluminum, copper, lead and zinc are predicted to be above CWQG-FAL in the ultimate mixing zone in the Victoria River. However, based on extension of dilution ratios for the regulatory scenario, it is expected that the ultimate mixing zone of 300 m (as predicted in the EIS) is still applicable, and that aluminum, copper, lead and zinc concentrations return to CWQG-FAL thresholds within 300 m of discharge into the Victoria River, as previously presented.

Based on the above, the proposed Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Groundwater Resources and Surface Water Resources.

2.3 FISH AND FISH HABITAT

An assessment for Fish and Fish Habitat (Chapter 8) was provided in the EIS. The following effects were assessed for this VC:

- Change in fish habitat quantity
- Change in fish habitat quality
- Change in fish health and survival

As described above, refinements to the footprint and location of the waste rock pile, overburden stockpile, LGO stockpile and water management ponds/ditching are not anticipated to change predictions of mass loadings to surface water receivers. Effluent quality in consideration of Project refinements is predicted to meet the MDMER criteria as described in the EIS, and effluent mixing and assimilative capacity are predicted to remain within the mixing zone boundary extents, also as described in the EIS. Therefore, the proposed refinements do not change the characterization of residual effects, proposed mitigation, or overall conclusions described in the EIS as it related to fish habitat quality and fish health and survival.

The Project refinements avoid overprinting fish habitat. Water management infrastructure design modifications may result in changes in stream flows and indirect loss of fish habitat. As such, it will be necessary to recalculate the loss in the watershed area (or loss in flow contribution) for streams where indirect loss is anticipated based on the new Project layout and associated water management infrastructure. The corresponding potential changes in fish habitat quality (geomorphology, water velocity, habitat type [e.g., riffles, runs] and wetted channel perimeter) are consistent with the effects described in the EIS. The Project modifications are not anticipated to exceed the total anticipated loss of fish habitat quantity, which was predicted in the EIS (Section 8.5.1). As described in Section 8.5.1 of the EIS, the loss of habitat (direct and indirect) will be quantified and offset as part of the *Fisheries Act* Authorization process following consultation with Fisheries and Oceans Canada.

The proposed Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Fish and Fish Habitat.



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2.4 TERRESTRIAL ENVIRONMENT

The EIS assessed potential Project-related effects on Vegetation, Wetlands, Terrain and Soils (Chapter 9), Avifauna (Chapter 10), Caribou (Chapter 11), and Other Wildlife (Chapter 12). The following effects were assessed for these VCs:

- Vegetation, Wetlands, Terrain and Soils:
 - Change in Species Diversity
 - Change in Community Diversity
 - Change in Wetland Function
 - Change in Terrain and Terrain Stability
 - Change in Soils Quality and Quantity
- Avifauna and Other Wildlife
 - Change in Habitat
 - Change in Mortality Risk
- Caribou
 - Change in Habitat
 - Change in Movement
 - Change in Mortality Risk

As described in the EIS, a conservative approach was used to address uncertainty in the environmental effects assessment for habitat loss and/or alteration. This conservative approach also allows for refinements to the site layout, as these typically occur through detailed Project design and planning. Specifically, the assessment assumed the following:

- That all habitat within the Project Area would be disturbed, altered or lost, resulting in a direct loss or change of vegetation and habitat; in practice, not all vegetation will be cleared within the Project Area.
- That all wetlands within the Project Area would be disturbed, altered or lost, resulting in a direct loss of wetland function; in practice, not all wetlands within the Project Area will be altered or disturbed.

Given the conservative assumptions described above and that the Project refinements will occur entirely within the Project Area, there is no change in the assessment of habitat loss and/or alteration presented in the EIS for the terrestrial VCs.

In addition, the Project refinements do not result in a change in the assessments of sensory disturbance on avifauna, other wildlife, or caribou. The refinements do not result in measurable changes to noise, dust, or light emissions relative to those presented in the EIS (refer to Section 2.1 of this Attachment). The assessment in the EIS also conservatively assumed that indirect habitat alteration/loss would occur within a buffer around the mine site. As the proposed Project refinements are located within the mine site, the assessed buffers as described in the EIS remain valid.

The primary pathways for change in mortality risk are through vegetation clearing and earthworks, vehicular collisions, human-wildlife conflicts, and predation. The Project refinements are not anticipated to result in measurable changes to these pathways.



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With regards to the assessment of a change in caribou movement, the primary effect pathway is from the alteration or loss of existing caribou paths along a preferred migration corridor within the Project Area. As described in the EIS, a primary spring / fall migration corridor used by Buchans herd caribou directly overlaps with Project infrastructure, and residual effects on a change in movement are predicted to be significant, as the mine site (the Marathon open pit and waste rock piles, specifically) has been determined to present a potential obstacle to caribou migration. The Project refinement to divide the Marathon waste rock pile will provide wider and more direct travel paths within the site and allow migrating caribou to more readily move through the Project Area. While the site layout has been refined to reduce adverse effects to migrating caribou and will result in a more functional migratory path than originally anticipated in the site layout presented in the EIS and amendment to the EIS, the Project refinements do not change the EIS prediction of a significant residual environmental effect on caribou.

In summary, the proposed Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Vegetation, Wetlands, Terrain and Soils, Avifauna, Caribou, and Other Wildlife.

2.5 SOCIO-ECONOMIC ENVIRONMENT

The EIS assessed potential Project-related effects on Infrastructure and Services (Chapter 13), Community Health (Chapter 14), Economy and Employment (Chapter 15), and Land and Resource Use (Chapter 16). The following effects were assessed for these VCs:

- Infrastructure and Services:
 - Change in local housing and temporary accommodations
 - Change in local services and infrastructure
- Community Health
 - Change in community well-being
 - Change in physical health conditions
- Employment and Economy
 - Change in regional labour force
 - Change in economic activities of outfitters
 - Change in economy
- Land and Resource Use
 - Change in land use
 - Change in resource use
 - Change in recreational use

Given that the proposed Project refinements will not result in a change to Project-related population growth or Project demand for, and expenditures on, services, labour, materials, and equipment described in the EIS, the Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Infrastructure and Services and Economy and Employment.



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With respect to community health, effects pathways as described in the EIS may result in a change to community well-being (availability of health services and infrastructure) and physical health conditions (potential effects to air and water quality and country foods due to Project-related emissions). Since filing the EIS, a human health risk assessment (HHRA) was completed for the Project and was submitted to both the Impact Assessment Agency of Canada (as part of Marathon's responses to Information Requirements) and to the Newfoundland and Labrador Department of Environment and Climate Change (as part of the EIS Amendment). As described in Section 2.2 of this Attachment, the proposed Project refinements do not alter the surface water quality predictions presented in the EIS and, therefore, do not alter the conclusions of the HHRA. As a result, the Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Community Health.

With respect to land and resource use, the primary effects pathways are through the Project activities and components, as these may restrict access to, or cause loss of, areas used for resource activities and/or recreation. As the Project refinements will occur within the assessed Project Area, they will not result in measurable changes to these pathways. Therefore, the Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Land and Resource Use.

2.6 INDIGENOUS GROUPS

An assessment of potential Project-related effects for Indigenous Groups (Chapter 17) was provided in the EIS. The following effects were assessed for this VC:

- Change in current use
- Change in Indigenous health conditions
- Change in Indigenous socio-economic conditions
- Change in physical and cultural heritage

Given that the Project refinements will occur within the existing Project Area, they will not result in measurable changes to effects on Indigenous groups related to current use, socio-economic conditions, or physical and cultural heritage. With respect to Indigenous health conditions, the discussion provided in Section 2.5 of this Attachment for Community Health is also applicable to Indigenous Groups. As indicated in Section 2.5, the Project refinements do not alter the conclusions of the HHRA, which evaluated potential human health risks for Indigenous and non-Indigenous receptors. Therefore, the Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Indigenous Groups. Marathon will continue to engage with Indigenous groups, including Indigenous resource users, throughout the life of the Project.



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2.7 HISTORIC RESOURCES

The EIS assessed potential Project-related effects on Historic Resources (Chapter 18). As noted in the EIS, there are no known registered archaeological sites within the Project Area. As discussed in Section 18.2.3.4 of the EIS, there is one area of archaeological potential within the Project Area, however this area does not overlap with the footprints of the refined Project infrastructure. Therefore, the Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Historic Resources.

2.8 DAM INFRASTRUCTURE

The EIS assessed potential Project-related effects on Dam Infrastructure (Chapter 19). The following effects were assessed for the VC:

- A change in water quality in Victoria Lake Reservoir
- A change in water balance in Victoria Lake Reservoir
- A change in dam stability for the Victoria Dam

The proposed Project refinements do not result in changes in water quality or water balance with respect to Victoria Lake Reservoir, as described in Section 2.2, above. In terms of a potential change in dam stability for the Victoria Dam, the effects pathways include vibrations due to blasting and potential inundation from a failure of the tailings management facility. The proposed Project refinements do not result in changes to the expected vibration frequency or intensity presented in the EIS generally, or specific to the Victoria Dam.

Based on these factors, the proposed Project refinements do not result in a change to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS for Dam Infrastructure.

2.9 CUMULATIVE EFFECTS

Cumulative effects were assessed for the following VCs:

- Atmospheric Environment
- Groundwater Resources
- Surface Water Resources
- Fish and Fish Habitat
- Vegetation, Wetlands, Terrain and Soils
- Avifauna
- Caribou
- Other Wildlife
- Community Services and Infrastructure
- Community Health



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- Employment and Economy
- Land and Resource Use
- Indigenous Groups
- Historic Resources

The cumulative effects assessment includes consideration of other physical activities that have been (past), are being (present and ongoing), and will be carried out (reasonably foreseeable future) in the cumulative effects RAA. The pathways for cumulative effects are the same as those described for the assessment of Project residual effects on each VC. As described above, the Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS, and would therefore also not result in a change to the cumulative effects assessment.

3.0 CONCLUSIONS

Based on the above, the proposed Project refinements do not constitute a substantive change to the scope of the Project. Given the conservative effects assessment approach used within the EIS, no further assessment, beyond the information provided herein, is considered necessary. The Project refinements do not result in changes to the characterization of residual adverse effects, proposed mitigation, or overall conclusions described in the EIS. The conclusion that routine Project activities will not cause significant adverse environmental effects on any of the VCs, with the exception of caribou, remains unchanged.

