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November 13, 2019

MV2014F0013  
MV2014L8-0006  
MV2019L8-0002

Mr. David Harpley  
Canadian Zinc Corporation  
SUITE 1710-650 West Georgia Street  
Vancouver BC V6B 4N9

Sent via Email

Dear Mr. Harpley:

**Issuance of Type A Land Use Permit and Type B Water Licences  
Canadian Zinc Corporation – Prairie Creek All Season Road Project**

Attached is Type A Land Use Permit (Permit) MV2014F0013 granted by the Mackenzie Valley Land and Water Board (MVLWB or the Board) in accordance with the *Mackenzie Valley Resource Management Act* (MVRMA). This Permit has been approved for a period of 5 years commencing November 13, 2019 and expiring November 12, 2024.

Attached are Water Licences (Licence) MV2014L8-0006 and MV2019L8-0002 granted by the Board in accordance with the MVRMA and *Waters Act*. These Licences have been approved for a period of 20 years commencing November 13, 2019 and expiring November 12, 2039.

Conditions and General Procedures

Please read all the conditions carefully. For the purpose of submitting plans in accordance with the Permit and Licences, the date of this letter November 13, 2019, is the effective date. Also attached is a copy of the General Procedures for the Administration of Licences in the Northwest Territories. Please review these carefully and address any questions to the Board's office.

Reclamation Security

In accordance with Water Licence MV2014L8-0006 Part C condition 1 and Schedule 2 condition 1, a security deposit in the amount of \$336,341 shall be posted with the Minister of the Government of the Northwest Territories (GWNT) – Environment and Natural Resources and copied to the Board prior to the commencement of Phase 1 activities pursuant to section 35 of the *Waters Act*. Submit payment of the security, made out to the **Government of the Northwest Territories**, in the amount of \$336,341, to: Government of the Northwest Territories, Box 1320, Yellowknife, NT, X1A 2L9, Attention: Director, Water Resources. Please provide a copy of the receipt of security to the MVLWB office prior to the commencement of Phase 1 activities.

.../2

In accordance with Land Use Permit MV2014F0013 26(1)(l) Security Deposit (condition 87) a security deposit in the amount of \$1,115,309 shall be posted with the Minister of the GNWT – Department of Lands and copied to the Board prior to the commencement of Phase 1 activities under section 32 of the Mackenzie Valley Land Use Regulations (MVLUR). As delegated under Schedule A of the Delegation Instrument under the MVRMA, this security deposit, payable to the **Government of the Northwest Territories** in the amount of \$1,115,309, shall be submitted to: the Government of the Northwest Territories, Department of Lands, North Slave Regional Office, 140 Bristol Avenue, Yellowknife NT, X1A 3T2. For more information about posting security with the GNWT, please contact Charlene Coe, Land Use Advisor, at (867) 767-9187 (ext. 24194). Please send a copy of the receipt for the security deposit to the MVLWB office prior to the commencement of Phase 1 activities.

In accordance with Land Use Permit MV2014F0013 26(1)(l) Security Deposit (condition 88), a security deposit in the amount of \$25,981 shall be posted with the Minister of the Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and copied to the Board prior to the commencement of Phase 1 activities pursuant to section 72.11 of the MVRMA. Submit payment of the security, made out to the **Receiver General for Canada**, in the amount of \$25,981, to: Crown-Indigenous Relations and Northern Affairs Canada, Box 1500, Yellowknife, NT, X1A 2R3, Attention: Ms. Michelle Desjarlais-Morris, Manager, Financial Services. Please provide a copy of the receipt of security to the MVLWB office prior to commencement of Phase 1 activities.

#### Water Use Fee – Licence MV2014L8-0006

As outlined in Part D condition 1, water use fees shall be paid annually as per subsection 8(1) of the *Waters Regulations*. This fee must be paid annually hereafter for the duration of the Licence on or before its anniversary date. Based on the water use fee calculator (attached), CZN's water use fee for the period of November 7, 2019 through to November 6, 2020 is \$1,091.35. Submit payment of the water use fee, made out to the **Government of the Northwest Territories**, in the amount of \$1,091.35, to: Mackenzie Valley Land and Water Board, Box 2130, Yellowknife, NT, X1A 2P6.

#### Spill Contingency Plan – Resubmission Required for Confirmation of Conformity by Board staff

The Board hereby requires that CZN revise and submit the Spill Contingency Plan in accordance with comments and commitments made during this review, as summarized in the Table 10 of Appendix A (attached). The Spill Contingency Plan are considered to be approved as an interim submission, and upon resubmission the Plan will require a confirmation of conformity from Board Staff. Please include a conformity table in the Plans when they are resubmitted that clearly outlines how each Board Directive will be met or provide justification if a Board Directive will not be met, or if it will be addressed in Phase 2. The Board notes that the Spill Contingency Plan must be approved and implemented at the beginning of a Project to prevent contamination of land and Water in case of any spills. Therefore, CZN cannot begin Phase 1 until the Spill Contingency Plan is considered approved.

#### Engagement Plan – Resubmission Required for Confirmation of Conformity by the Board

The Board hereby requires that CZN revise and submit the Engagement Plans 1 in accordance with comments and commitments made during this review, as summarized in the Table 4 of Appendix A (attached). The Engagement Plan are considered to be approved as an interim submission, and upon resubmission the Plan will require a public review and a confirmation of conformity from the Board. Please include a conformity table in the Plan when they are resubmitted that clearly outlines how each Board Directive will be met or provide justification if a Board Directive will not be met, or if it will be addressed in Phase 2.

Management Plans – Resubmission Required for Board Decision

The Board hereby requires that CZN revise and submit the Plans in Table 1 in accordance with comments and commitments made during this review, as summarized in the Appendix A (attached). These Plans are not considered to be approved, and upon resubmission the Plans will require a conformity check from Board Staff, Public Review, and Board decision. Please include a conformity table in the Plans when they are resubmitted that clearly outlines how each Board Directive will be met or provide justification if a Board Directive will not be met, or if it will be addressed in Phase 2.

**Table 1: Denied Plans that require resubmission**

Permit MV2014F0013 Condition Number	Licence MV2014L8- 0006 Condition Number	Licence MV2019L8- 0002 Condition Number	Title of Plan	Board Directive in Appendix A
138	Part F, condition 12	Part E, condition 12	Borrow Pit Management Plan	Table 1
109	Part H, condition 1	Part G, condition 1	Closure and Reclamation Plan	Table 2
140	Part F, condition 16	Part E, condition 16	Explosives Management Plan	Table 3
136	Part F, condition 10	Part E, condition 10	Geochemical Verification Program	Table 5
85	n/a	n/a	Invasive Species Management Plan	Table 6
48	Part F, condition 8	Part E, condition 8	Permafrost Management and Monitoring Plan	Table 7
83	n/a	n/a	Rare Plant Management Plan	Table 8
44	Part F, condition 6	Part E, condition 6	Sediment and Erosion Control Plan	Table 9
142	n/a	n/a	Traffic Control Mitigation and Road Operations and Maintenance Plan	Table 11
72	Part F, condition 4	Part E, condition 4	Waste Management Plan	Table 12

CZN shall adhere to the commitments made throughout the proceeding for MV2014F0013, MV2014L8-0006, MV2019L8-0002, including: in response to reviewer comments dated May 15, 2019 and September 9, 2019; during Technical Session discussions held from June 5-7, 2019 in Yellowknife; and in response to Information Requests generated throughout the proceeding.

The Board also reminds CZN of the following:

- Link the Sediment and Erosion Control Plan and the construction plans to the extent possible, as they should work cooperatively together when being implemented (ENR-134, May 15, 2019)
- Include details of the inspection and monitoring plan for all stream crossing structures in the Sediment and Erosion Control Plan, given that the Road Construction and Management Plan is not a requirement of the Permit and Licences

- Include updated sections of the Winter Road and All Season Road that will be built within 100 metres of the Ordinary High Water Mark in the Design and Construction Plans and Structure Description and Construction Plans, where applicable
- Specify in the Avalanche Hazard Management Plan when during the winter season avalanche paths will be observed, including justification
- CZN is required to apply for the Waste from the ASR Project to be managed at the Mine and submit a Waste Management Plan under the Mining authorizations for Board decision prior to depositing Waste at the Mine
- The Board suggests CZN engage with ECCC prior to the development of the Contaminant Loading Management Plan

#### Public Registry

A copy of this Licence has been filed on the [Public Registry](#) at the MVLWB office. Please be advised that this letter, with attached procedures, all inspection reports, and correspondence related thereto, is part of the Public Registry and is intended to keep all interested parties informed of the manner in which the Permit and Licence requirements are being met. All Public Registry material will be considered if an amendment to the Licence is requested.

#### Reasons for Decision

The Reasons for Decision is currently undergoing final legal review and will be distributed once the legal review is completed.

The full cooperation of CZN is anticipated and appreciated. If you have any questions or concerns regarding this letter, please contact Jacqueline Ho at (867) 766-7455 or email [jho@mvlwb.com](mailto:jho@mvlwb.com)

Yours sincerely,



Mavis Cli-Michaud  
MVLWB, Chair

Copied to: Distribution List

Attached: Appendix A Tables 1-12

Land Use Permit MV2014F0013

Water Licence MV2014L8-0006

Water Licence MV2019L8-0002

*General Procedures for the Administration of Licences in the Northwest Territories*

Water Use Fee Calculator

Review Comment Summary Table – May 15, 2019

Review Comment Summary Table – September 9, 2019

**Appendix A**  
**Board Directives for Management Plan Resubmission**

**Table 1: Board Directives on Borrow Pit Management Plan**

Item	Requirements	Review Comment Reference May 15, 2019
a.	Include that a rock berm may need to be placed around borrow excavations, and that appropriate measures will be considered on a site-specific basis.	GNWT-Lands 4
b.	Update to clarify the term “alternate alignment”.	PC-35
c.	Include general arrangements plans for individual borrow sources that identify the needed area, outline staged pile development to use only the footprint required at each stage of construction, provide further details on erosion control measures, identify the volume of construction waste import, and identify surface drainage and stockpiling needs.	PC 38-39
d.	Ensure that all information described in the Closure and Reclamation Plan is appropriately referenced.	PC 154

**Table 2: Board Directives on Closure and Reclamation Plan**

Item	Requirements	Review Comment Reference May 15, 2019
a.	Provide more detail as to which of the described reclamation strategies would be applied to various areas and sections of the road depending on the pre and post development terrain and ecosystems. The extent to which the strategies will be implemented should also be quantified, where possible.	ENR-101
b.	Provide further details about reclamation trials (when and where they will be conducted).	ENR-103
c.	Provide further details about environmental monitoring (methods, frequency) following reclamation, as described in CZN’s response to ENR 104.	ENR-104
d.	Re-evaluate and define terms such as “normal condition” and “significant” to ensure all aspects of the Plan are implemented in a consistent manner.	ENR-105
e.	Update to identify the use of linear windrows along the edge of the right-of-way.	ENR-107
f.	Update the plan to provide a summary of the alignment that will be deactivated with or without pullback compared to where removal of overland sections will occur, including a description of how CZN has determined this.	ENR-109; ENR-110; PC-148
g.	Update to indicate that, if any ARD material is used inadvertently for construction, it will be removed following the end of the mine, or removed and replaced during operations if there are impacts to location vegetation or surface water in the surrounding environment.	ENR-132
h.	Update maps to remove the Liard Transfer Facility (e.g. Fig 2 p.8).	GNWT-Lands Darren Campbell-5
i.	Update to provide further information to address the commitments described in Developer’s commitment ID 224 of EA1415-01.	MVLWB-9
j.	For the closure and reclamation of borrow sources, include the plan for storage of organics for reuse during the reclamation phase.	PC-39
k.	For closure and reclamation of the borrow sources, provide an updated conceptual plan which presents the closure activities, objectives, and criteria in a form that is consistent with MVLWB/AANDC Guidelines.	PC-41
l.	Ensure that information is consistent with the information in the Invasive Species Management Plan.	PC-116

m.	Update to include pre-disturbance information on vegetation cover and terrain conditions for the purpose of describing and quantifying reference communities.	PC-142
n.	Update to clarify that all culverts to be removed during the closure and reclamation of the ASR will be disposed of at approved locations.	PC-147
o.	Update to clarify what is meant by "to the extent possible" and "where practicable". Address limits to restoration. Where specific areas or ecosystem require non-standard approaches, provide an explanation, and a tailored approach with appropriate desired outcomes.	PC-149
p.	Update to include the scenario for temporary closure that was described in response to Parks 153 (maintenance of environmental protection systems and appropriate associated monitoring during periods of temporary closure relates to the ongoing monitoring of bridges and culverts, areas of potential erosion, flooding, etc. that will be conducted to ensure that appropriate maintenance will be undertaken to achieve continuing compliance with ASR authorizations and legislation).	PC-153

**Table 3: Board Directives on Explosives Management Plan**

Item	Requirements	Review Comment Reference May 15, 2019
a.	Update to include the option of returning all unused explosives to the supplier.	GNWT-Lands 34

**Table 4: Board Directives on Engagement Plan**

Item	Requirements	Review Comment Reference May 15, 2019
a.	Update to include engagement records and an engagement plan with Acho Dene Koe First Nation.	ADKFN-3; PC-111
b.	Details of the framework for the Dene monitoring program, in response to Measure 15-4.	LKFN-1
c.	Include details for Dene monitor involvement in the process of monitoring for Seepage along the road (as per the Geochemical Verification Program).	LKDFN-6
d.	Include details for Dene monitoring involvement in borrow investigation.	LKDFN-7
e.	Include details for the identification training and tools for the Dene Monitors to enable them to participate in ongoing monitoring for rare, culturally valued, protected and invasive plant species.	LKFN-8; LKFN-9
f.	Include details for how LKFN and NDDB will have the opportunity to review an updated AIA prior to any new land disturbance.	LKFN-11
g.	Update Traditional Knowledge considerations for the Phase 1 winter road in accordance with Measure 10-1 (iii). Provide details of engagement for Plans that incorporated TK, and the mechanism.	PC-9
h.	Update Engagement Records and Engagement Plan to include timeline for negotiation of agreements with Łíídlı́ Kúé First Nation and Nahanni Butte Dene Band	PC-109
i.	Explain how Measure 10-2 and Measure 10-1 parts I and ii will be met prior to construction of Phase 1.	PC-112

**Table 5: Board Directives on Geochemical Verification Program**

Item	Requirements	Review Comment Reference May 15, 2019
a.	Change the wording in 5.3.3 Shake Flask Extraction Analysis to clarify that the filtered supernatant was analyzed by ICP-MS for multi-element chemical analysis.	ECCC-15
b.	Details of the re-assessment of the 5 km section sampling frequency of granular material that will occur following summer 2019 and winter 2020 fieldwork, as described in CZN's response to ECCC 16. Add rationale for the proposed sampling frequency.	ENR-125
c.	Clarify when the geochemical characterization will take place for the bedrock materials, as well as additional overburden materials, as described in CZN's response to ENR 123.	ENR-123

d.	Update to include the selection criterion and rational for Shake Flask Extraction analysis and XRD analysis, as described by CZN in response to ENR 126.	ENR-126
e.	Update the Plan to provide information to address commitment ID 125 of EA1415-01.	MVLWB-22

**Table 6: Board Directives on Invasive Species Management Plan**

Item	Requirements	Review Comment Reference May 15, 2019	Technical Session June 7, 2019
a.	Include an integration of the results from the Dene Knowledge Study updated by LKFN and NDDB.	LKFN-9	
b.	Clarify dates and road sections when Tetra Tech undertook rare plant surveys (under 1.4 Regulatory and Permitting Context).	MVLWB-10	
c.	Include an appendix that will address invasive species control along the Nahanni Butte community access road, the old logging road and areas proximal to the road cleared by the community, and around the Prairie Creek Mine. Include the desired outcomes, and the treatment approach, methods, materials, and timing for treatment, as well as details of the monitoring necessary to verify the outcomes of treatment, and adaptive management options.	Parks-113	
d.	Include an appendix of the protocol for the vehicle inspection station.	Parks-114	
e.	Include a treatment plan for all 23 invasive species identified.	Parks-119	
f.	Provide an executable, detailed monitoring plan.	Parks-120	
g.	Ensure that information is consistent with the information in the Closure and Reclamation Plan.	Parks-116	
h.	Whenever results are summarized, edit to indicate that there were invasive species detected north of the Liard River.	Parks-123	
i.	Update to include figures documenting all baseline locations of invasive species.	PC-124	
j.	Update to extend the duration of the wheel wash throughout by replacing "open water season" to "snow free season".	PC-125	
k.	Update to include considerations taken to prevent the spread of whirling disease.		<a href="#">Transcript</a> pg. 72 line 12-pg.74 line 15

**Table 7: Board Directives on Permafrost Management and Monitoring Plan**

Item	Requirements	Review Comment Reference May 15, 2019
a.	Update the legend of Figure A Permafrost Map of Canada so that it is readable.	ECCC-17
b.	Include details about instrumented boreholes, including locations, depths and instrumentation details. This should include any new data from summer 2019 investigation work that was used to revise the plan for ground temperature instrumentation.	ENR-94, PC-136
c.	Provide additional details on the installation timeline for the ground temperature cables (GTCs), particularly those that will be used in the baseline data collection.	ENR-95
d.	Provide details about acquiring a robust baseline ground temperature dataset for permafrost areas, by collecting baseline data for as long as possible leading up to construction, as required by Measure 12-1.	ENR-96
e.	Provide details about the selection of the two fully instrumented road sections, as described in CZN's response to ENR 97.	ENR-97
f.	Provide additional information on the selection criteria for "high-risk permafrost areas" and a list of potential areas being considered for this instrumentation, as described by CZN in response to ENR 98.	ENR-98
g.	Provide additional information on the frequency of permafrost monitoring and inspections, as described by CZN in response to ENR 99.	ENR-99
h.	Include consideration to results from the Scotty Creek Research Station in further versions of the Plan.	LKFN-1

**Table 8: Board Directives on Rare Plant Management Plan**

Item	Requirements	Review Comment Reference May 15, 2019
a.	Update to include the results of the Dene Knowledge Study updated by LKFN and NDDB.	LKFN-8
b.	Once the detailed design and refined Project footprint is available, compare to the documented locations of rare plants.	PC-204
c.	Add to Table 2: 1) GNWT Status Rank; 2) location of each occurrence relative to the Project footprint. For occurrences near the footprint, provide the distance in metres to the footprint; and 3) jurisdiction (NNPR, GNWT, IAB).	PC-205
d.	Update to include results of further field investigations to establish rare plant Management Units that are adjacent to the alignment, to be conducted before construction in rare plant occurrence areas. This should include re-visiting the locations assessed in 2009.	PC-206; PC-209; Racher-26
e.	Update to include a general framework outlining how decisions will be made regarding the management of rare plants.	PC-208
f.	Indicate that all rare plant occurrences currently identified within the RPMP will be clearly marked prior to the start of construction.	PC-209
g.	Update to address all requirements of Measure 11-2 part 2.	PC-210
h.	Ensure the reference section is complete.	PC-211

**Table 9: Board Directives on Sediment and Erosion Control Plan**

Item	Requirements	Review Comment Reference May 15, 2019
a.	Develop further to address and mitigate the potential for unanticipated impacts, as CZN committed to in response to ENR 133. Add that the rapid response plans (commitment #44 from EA) will be treated like a spill response outlined in a Spill Contingency Plan, as described by CZN in response to ENR.	ENR-133
b.	Consider defining terms that will trigger an action or allow for an action to cease (“significant rainfall”, “heavy rainfall”, “significant runoff event”, “significant summer storm”, “intense precipitation event”, “high-water event”, “persistent rainfall”, “sensitive areas” and “successive weeks”) in response to ENR 135, PC 170.	ENR-135; PC-170
c.	Update to reflect the inclusion of Dene monitors, as per commitment ID 96 from EA1415-01.	PC-12
d.	Ensure that all information described in the Closure and Reclamation Plan is appropriately referenced.	PC-154
e.	Update the Plan to expand the scope to address potential sources of erosion and sedimentation as a result of winter road construction; and identify proposed control and mitigation measures to address these sources.	PC-165
f.	Update to expand the scope to address potential sources of erosion and sedimentation due to changed water flows from beaver dams; and identify proposed control and mitigation measures to address these sources.	PC-166
g.	Remove the phrase “where practical and feasible” from the first sentence of section 5.2.2.	PC-171
h.	Update to include re-vegetation related Best Management Practices.	PC-172

**Table 10: Board Directives on Spill Contingency Plan**

Item	Requirements	Review Comment Reference May 15, 2019
a.	Update Appendix D to identify the main catchment basins, direction of flow of water courses, the location of spill response equipment, and waste and fuel storage locations.	ENR-144
b.	Clarify the number of loads per year of mineral concentrate that will be transported by the ASR.	ENR-146
c.	Update to include the concentrate haul plan results to update the worst-case scenario to reflect the maximum quantity of mineral concentrate that will be transported in one load.	ENR-147



d.	Update to ensure the worst-case scenario reflects a spill of the entire contents of the stored material or load, and that spill response preparedness will be based on the total load.	ENR-149
e.	Update to include that all liquid hydrocarbons will have suitable secondary containment.	ENR-150
f.	Update to include frequency of regular inspections (for items such as fuel storage tanks, heavy equipment and vehicles, greywater tanks and spill kits).	ENR-151
g.	Update to include that all heavy equipment and refueling vehicles will carry portable spill kits that include items such as absorbent pads, containment booms, and spill pool catchment receptacles.	ENR-174
h.	Expand reference about spill response trailer to say “spill-response trailers would also be used for spill response training, re-training, and spill response drills”.	GNWT-Lands-15
i.	Update to clarify that fuel transfer operations will not occur in “sensitive areas” and that alternative locations will be chosen.	GNWT-Lands-16
j.	Update to include that spills kits will be carried in all proponent and contractor vehicles, as part of standard practice.	GNWT-Lands-17
k.	Update to include spill-drill reports.	GNWT-Lands-18
l.	Update to acknowledge that CZN is responsible for any Project-related spill incident.	GNWT-Lands-19; MVLWB-20
m.	Update to include maps showing locations of the short-term access roads associated with borrow sources.	GNWT-Lands-21
n.	Include that conventional stationary spill kits will be located at barge-landing and storage leasehold locations.	GNWT-Lands-22
o.	Consider including a discussion of scenarios when lids might come undone in concentrate containers. Update to include the information described by CZN about concentrate lids and containers in response to GNWT-Lands 24.	GNWT-Lands-24
p.	Add details about monitoring/determining when vehicles will be stationary greater than 2 hours (observations will be conducted by construction foremen and Monitors multiple times per day during construction of all vehicles, and by Monitors during operations).	GNWT-Lands-26
q.	Add “and at the staging areas on both sides of the Liard River” to section 4.1.	GNWT-Lands-27
r.	Add to section 4.1: “Proof of regular maintenance and monitoring will be kept. This proof will take the form of records of Inspection, Maintenance, and Monitoring, which will be made available to a GNWT Inspector upon request”.	GNWT-Lands-29
s.	In section 4.6 revise “Used absorbent materials from hydrocarbon spill response actions will be incinerated in the mine incinerator” to “in an approved incinerator”. Consider adding “as per the manufacturers recommended maintenance and operational specifications” to this sentence or provide justification as to why this would not be added.	GNWT-Lands-30
t.	Add mention that all spills involving explosive material or product must be reported (as per the NWT Spills Working Agreement).	GNWT-Lands-32
u.	Include the complete spelling of Methyl Isobutyl Carbinol Sodium Isobutyl Xanthate.	GNWT-Lands-32
v.	Provide Safety Data Sheets which are compliant with Canadian and, if applicable, NWT specific legislation.	GNWT-Lands-33
w.	Update CIRNAC Resource Management Officer phone number (867) 669-2442.	INAC-Yellowknife-2
x.	Clarification on the strategy to contain spills in extreme scenarios described in section 4.4.3 of the Spill Contingency Plan.	MLVWB-21
y.	Update to provide fuel storage locations.	PC-21
z.	Include the types and quantities of hazardous materials that will be transported on the winter road and detail the locations for spill response equipment for each year of the winter road phase. Describe the anticipated travel times to a spill location.	PC-88
aa.	Update to reflect the accurate amount of fuel that will be stored on site at any time (as indicated in the Main Report).	MVLWB-7 (Sept 9, 2019)
bb.	Add the Emergency Response Plan as an appendix to the end of the Spill Contingency Plan.	

**Table 11: Board Directives on Traffic Control Mitigation and Road Operations and Maintenance Plan**

Item	Requirements	Review Comment Reference May 15,
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		2019
a.	Add to plan: "vehicle traffic shall 'cease at least 500 m from (or at first observation of) the animal(s) and all headlights turned off until the animal moves off at least 100 m or 5 minutes after last visual. Once traffic resumes, speed reduced to half the posted speed limit within 1 km of the sighting' for all wildlife found on the road" and that this information will apply to all phases of the Project.	ENR-10
b.	Include more specific monitoring procedures for wildlife and traffic interaction, and reporting.	ENR-11
c.	Add details about corrective management to mitigate wildlife encounters with traffic (speed reductions and/or increased signage, and any other constructive options). Include details about wildlife studies completed prior to road construction that will further inform application of traffic controls, as discussed in CZN's response to ENR 12.	ENR-12
d.	Identify data sources for baseline and operational data to be used for traffic control, as per Measure 5-2 Part 2 of EA1415-01, such as further information about use of a camera trap system or observations from Dene Monitors during construction and operations, and drivers during operations. Include adaptive management responses to traffic data.	ENR-13
e.	Include a detailed section related to management and monitoring of non-mine related traffic (including data collection, analysis and reporting for this specific type of traffic).	ENR-14
f.	If a cattle guard is to be implemented, include details about the cattle guard usage and location. Ensure that information is consistent with what is outlined in the Invasive Species Management Plan.	ENR-15
g.	Revise text about non-emergency reporting to include immediate reporting of vehicle collisions with wildlife, and immediate unauthorized fishing, hunting, trapping to the appropriate authority.	ENR-16
h.	Include examples of data collection forms and operating procedures related to traffic control and wildlife management in the appendix.	ENR-17
i.	Include the removal of boulders from the shoulder area of the roadway which might (reasonably) punctuate overturned fuel tanker trucks.	GNWT-Lands-23
j.	Update to reflect the inclusion of Dene monitors, as per commitment ID 96 from EA1415-01.	MVLWB-12
k.	Update the Plan to address commitment ID 98 from EA1415-01.	MVLWB-15
l.	Explain how Measure 5-2, Part 2 a) will be met.	MVLWB-16
m.	Clarify the form of the journey management system that will be in place during Phase 1.	PC-46; PC-198
n.	Update to identify the contact information of appropriately trained staff or responsible Agency; develop protocols explaining who, how, and when to dispatch wildlife along the ASR.	PC-50
o.	Update to include a Wildlife Observation Form.	PC-52
p.	Update to provide a comprehensive list of hazards to traffic and how they will be managed.	PC-53
q.	Update to include the revised statement that "All personnel are to remain in the vehicle and/or shelter if wildlife species are observed on the road or near the road prism.	PC-54
r.	Include that rock scaling and/or trim blasting are maintenance activities that will potentially be required in sections of rock slopes adjacent to the ASR.	PC-183
s.	Wildlife mitigations noted in the draft ROMP be replaced with references to the WMMP.	PC-184
t.	Clarify that there are 6 bird species at risk, 4 of which are confirmed to occur in the area (CONI, OSFC, BASW and CAWA).	PC-185
u.	Update to include reference to the Invasive Species Management Plan.	PC-186

**Table 12: Board Directives on Waste Management Plan**

Item	Requirements	Review Comment Reference May 15, 2019
a.	Add further details about the management plan for all waste hydrocarbon items (used sorbents and rags, etc.), as described in response to ENR 4. Consider that in the NWT it is no longer best practice to incinerate oil rags and sorbents.	GNWT-Lands-13
b.	Include details of the incinerators designed to accommodate the incineration of food items and oil, including supporting documents on the model and design of the incinerator.	ENR-4; ENR-8
c.	Clarify which camps will have an incinerator and include details of operating training, records management and reporting, and plans for residual management, as described in response to ENR 113.	ENR-113

d.	Add Incineration Management Strategies that demonstrate the device and procedures selected are suitable to the waste stream intended for incineration. This should include: a) A description of waste streams intended for incineration; b) Selected incineration technology and rationale for selection (the minimum requirement to accommodate complex waste streams should be a dual-chamber, controlled-air incinerator); c) A description of recycling and waste segregation plans that control waste entering the incinerator; d) Operator training and qualifications, and the use of trained and designated operators; e) Procedures for operation and maintenance, including record-keeping (i.e. completion of burn cycle and maintenance logs, and recording of the weight of each waste load charged to the incinerator); f) A reporting requirement to summarize the tracking and record-keeping component; and, g) Weigh scales to record the weight of each load charged to the incinerator; h) Details of emission measurement methods, where applicable.	ENR-165
e.	Add that a government regulatory document granting permission to incinerate waste oil at the road camps will be referenced if waste oil is to be incinerated.	GNWT-Lands-11
f.	Add to Table 2 that fluorescent lights will be stored in weatherproof containers prior to being shipped off-site to a registered hazardous waste receiver.	ENR-5
g.	Further details about the plan to obtain input from Indigenous partners on the Project and ENR regarding adaptive management for waste/wildlife issues.	ENR-7
h.	Provide further details to 3.8 Monitoring, Inspections and Adaptive Management that describe how information will be collected and analyzed to inform issue management and mitigation/adaptive management actions.	ENR-9
i.	Update to include the need to confirm the designation of domestic waste at the time of construction, including confirmation from the Fort Nelson Municipal Landfill that they are willing to accept the potential types and associated quantities of waste generated from the ASR Project that CZN may transport there.	ENR-118
j.	Update to reflect that bioremediation for contaminated soil cannot occur at the Prairie Creek Mine until this activity is approved under the mine authorizations (MV2008L2-0002 and MV2008D0014). Provide contingencies for contaminated soil that CZN was proposing to transport and manage at the mine.	DFN-4; ENR-119; MVLWB-4
k.	Add that sealed animal proof containers are cleared once emptied to minimize the attraction of wildlife.	ENR-183
l.	Include a map which depicts an example of a typical temporary hazardous waste storage location at a road camp.	GNWT-Lands-7
m.	Consider including documentation demonstrating that an agreement exists with a registered hazardous waste receiver to receive used petroleum products.	GNWT-Lands 12
n.	Update to reflect that waste from the Project will not be managed at the Prairie Creek Mine until it is approved by the Board under the mine authorizations (MV2008L2-0002 and MV2008D0014), and provide contingencies for Waste that CZN was proposing to transport and manage at the Mine.	ENR-116; Racher- 12
o.	Add details about potable water, including where potable water will be sourced, how it will be treated (if necessary), and potable water storage facilities.	PC-131
p.	The updated Waste Management Plan includes a response to Parks 133 that states that "For Phase 1, all grey water and black water will be hauled out of the NNPR". Indicate where the grey water from the NNPR will be transported to for disposal.	PC-133



**Mackenzie Valley Land and Water Board  
Water Licence**

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Pursuant to the *Mackenzie Valley Resource Management Act* and Regulations, the Mackenzie Valley Land and Water Board, hereinafter referred to as the Board, hereby grants to:

Canadian Zinc Corporation  
\_\_\_\_\_  
(Licensee)

of Suite 1710-650 West Georgia Street, Vancouver BC V6B 4N9  
\_\_\_\_\_  
(Mailing Address)

hereinafter called the Licensee, the right to alter, divert, or otherwise use water subject to the restrictions and conditions contained in the *Mackenzie Valley Resource Management Act* made thereunder and subject to and in accordance with the conditions specified in this Licence.

Licence Number:	<u>MV2019L8-0002</u>
Licence Type:	<u>B</u>
Water Management Area:	<u>Northwest Territories 03</u>
Location:	<u>KP 156.1 to 161.7 and KP 163 to 164.1 of the Canadian Zinc Corporation All Season Road connecting Prairie Creek Mine to the Liard Highway</u>
Purpose:	<u>To dispose of waste and associated uses</u>
Description:	<u>Miscellaneous</u>
Quantity of Water <b>not to be exceeded:</b>	<u>0 cubic metres (m<sup>3</sup>)</u>
Effective date of licence:	<u>November 13, 2019</u>
Expiry date of licence:	<u>November 12, 2039</u>

This Licence issued and recorded at Yellowknife includes and is subject to the annexed conditions.

**Mackenzie Valley Land and Water Board**

A blue ink signature of Mavis Cli-Michaud.

\_\_\_\_\_  
**Mavis Cli-Michaud, Chair**

A black ink signature of Amanda Gauthier.

\_\_\_\_\_  
**Amanda Gauthier, Witness**

**Type B Water Licence MV2019L8-0002**  
**Canadian Zinc Corporation – Prairie Creek All Season Road Project**

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## Part A: Scope and Definitions

### 1. Scope:

- a) This Licence entitles the Licensee to use Water and dispose of Waste for construction, operation, closure and reclamation of the Prairie Creek All Season Road Project, Northwest Territories as described in the Environmental Assessment and subsequent Preliminary Screening Report dated August 20, 2019.

The scope of this Licence includes the following activities:

- i. Deposit of Waste;
  - ii. Use of Explosives;
  - iii. Use and storage of fuel;
  - iv. Construction and operation of Camps;
  - v. Development and operation of Borrow Pits;
  - vi. Construction, operation, and maintenance of an All Season Road, including the Construction, operation, and maintenance of a temporary Winter Road;
  - vii. Construction, operation, and maintenance of Watercourse crossing(s);
  - viii. Construction, operation, and maintenance of Watercourse training;
  - ix. Construction, operation, and maintenance of flood control structures; and
  - x. Progressive Reclamation and associated Closure and Reclamation activities.
- b) This Licence is issued subject to the conditions contained herein with respect to the use of Water and the deposit of Waste of any type in any Water or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Water. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *Mackenzie Valley Resource Management Act*, or other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so deposited or under which any such Waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations.
- c) Compliance with the terms and conditions of this Licence does not relieve the Licensee from responsibility for compliance with the requirements of any applicable federal, territorial, or municipal legislation.

### 2. Definitions<sup>1</sup>:

**Acid Rock Drainage** – acidic Water, often with elevated sulphate concentrations, that occurs as a result of oxidation of sulphide minerals contained in rock or other materials that are exposed as a result of natural weathering processes, Construction, or Project activities.

**Action Level** – a predetermined qualitative or quantitative trigger which, if exceeded, requires the Licensee to take appropriate actions.

**Adaptive Management** – a systematic, rigorous approach for deliberately learning from management actions with the intent to improve management policy or practice, conducted in accordance with the Report of Environmental Assessment Appendix B.

**All Season Road** – road, used in all seasons, that conforms to the alignment and material configuration as presented in the Design and Construction Plan and Design Drawings.

**Board** – the Mackenzie Valley Land and Water Board established under subsection 99(1) of the *Mackenzie Valley Resource Management Act*.

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<sup>1</sup> Defined terms are capitalized throughout the License, including when used in other definitions.

**Borrow** – excavated material including clay, silt, sand, and quarry rock, as described in the approved Borrow Pit Management Plan.

**Borrow Pit** – an excavation made according to the approved Borrow Pit Management Plan in order to produce Borrow.

**Closure Cost Estimate** – has the same meaning as that in the Mackenzie Valley Land and Water Board, Government of the Northwest Territories, and Indigenous and Northern Affairs Canada's *Guidelines for Closure and Reclamation Cost Estimates for Mines*.

**Closure Criteria** – has the same meaning as that in the Mackenzie Valley Land and Water Board and Aboriginal Affairs and Northern Development Canada's *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*.

**Closure Objectives** – has the same meaning as that in the Mackenzie Valley Land and Water Board and Aboriginal Affairs and Northern Development Canada's *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*.

**Closure and Reclamation** – the process and activities that facilitate the return of areas affected by the Project to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment, human activities, and the surrounding environment.

**Closure and Reclamation Plan** – a document, developed in accordance with this Licence and the Mackenzie Valley Land and Water Board and Aboriginal Affairs and Northern Development Canada's *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*, that clearly describes the Closure and Reclamation for the Project.

**Concentrate** – the product emanating from the processing of ore at the Prairie Creek Mine.

**Construction** – any activities undertaken during any phase of the Project to construct or build any structures, facilities or components of, or associated with, the development of the Project.

**Discharge** – the direct or indirect release of any Waters or Waste to the Receiving Environment.

**Effluent** – a Wastewater Discharge.

**Engagement Plan** – a document, developed in accordance with the Mackenzie Valley Land and Water Board's *Engagement and Consultation Policy* and the *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*, that clearly describes how, when and which engagement activities will occur with an affected party during the life of the Project.

**Engineered Structure** – any structure or facility associated with the Project and related to Water Use or the deposit of Waste that is designed by a Professional Engineer, including but not limited to the All Season Road, Non-Typical Winter Road, Hoverbarge Landings, Stream Crossing, Culvert, Camp, Staging Area.

**Environmental Assessment (EA)** – the totality of the Mackenzie Valley Environmental Impact Review Board's Public Registry for Environmental Assessment EA1415-01, including the Report of Environmental Assessment.

**Greywater** – all liquid Wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include Toilet Wastes.

**Groundwater** – all Water in a zone of saturation beneath the land surface, regardless of its origin.

**Independent Technical Review Panel (Panel)** – the expert panel established by the Licensee to fulfill Measure 5-1 of the Report of Environmental Assessment.

**Inspector** – an Inspector designated by the Minister under subsection 84(1) of the *Mackenzie Valley Resource Management Act*.

**Licensee** – the holder of this Licence.

**Metal Leaching** – the release of metals and metalloids in leachate Seepage of drainage or other materials associated with the Project.

**Minister** – the Minister of Crown-Indigenous Relations and Northern Affairs Canada.

**Non-Typical Winter Road** – sections of the Winter Road as documented in the Construction Plan and Design Drawings.

**Ordinary High Water Mark** – the usual or average level to which a Watercourse rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing Watercourses (rivers, streams), this refers to an active channel/bank-full level, which is often the 1:2 year flood flow return level. In inland lakes, wetlands or marine environments, it refers to those parts of the Watercourse bed and banks that are frequently flooded by Water so as to leave a mark on the land and where the natural vegetation changes from predominantly aquatic vegetation to terrestrial vegetation (excepting Water tolerant species). For reservoirs, this refers to normal high operating levels (full supply level).

**Permafrost** – ground (soil or rock) that remains at or below 0°C for at least two consecutive years.

**Phase 1** – activities to support the Construction of the All Season Road in Phase 2, including the Construction and operation of the Winter Road to conduct geotechnical investigation and transport equipment and materials to Prairie Creek Mine.

**Phase 2** activities to support the Construction of the All Season Road including the Construction and operation of the Winter Road and of All Season Road Construction.

**Phase 3** activities to support the operation of the All Season Road including transportation of loaded Concentrate, consumable materials and supplies to support mine operations, and road maintenance.

**Potentially Acid Generating (PAG) Rock** – any rock that has the potential to produce Acid Rock Drainage.

**Professional Engineer** – a person registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists to practice as a Professional Engineer in the Northwest Territories in accordance with the territorial *Engineering and Geoscience Professions Act*, and whose professional field of specialization is appropriate to address the components of the Project at hand.

**Professional Geoscientist** – a person registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists to practice as a Professional Geoscientist in the Northwest Territories in accordance with the territorial *Engineering and Geoscience Professions Act*, and whose professional field of specialization is appropriate to address the components of the Project at hand.

**Progressive Reclamation** – Closure and Reclamation activities conducted during the operating period of the Project.

**Project** – the undertaking described in Part A, condition 1.

**Receiving Environment** – the natural environment that, directly or indirectly, receives any deposit Waste from the Project.



**RECLAIM** –the Government of the Northwest Territories’ model for estimating Closure and Reclamation costs.

**Reclamation Research** – has the same meaning as that in the MVLWB/AANDC *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*.

**Report of Environmental Assessment (Report of EA)** – the Mackenzie Valley Environmental Impact Review Board’s Report of Environmental Assessment and Reasons for Decision for the EA1415-01, dated September 12, 2017, and adopted by the Minister of Crown-Indigenous Relations on October 9, 2018.

**Runoff** – the overland flow of Water that occurs when excess precipitation, meltwater, or other Water is not absorbed by the land, and instead drains downslope towards a Watercourse.

**Seepage** – any Water or Waste that drains, passes through, or escapes from any structure designed to contain, withhold, divert, or retain Water or Waste.

**Sewage** – all Toilet Wastes and Greywater.

**Sewage Disposal Facilities** – Sump(s) and/or Sewage collection tank(s) and/or storage containers designed to hold Sewage.

**Sump** – a human-made pit, trench, hollow, or natural depression used for the purpose of depositing Water and/or Waste.

**Solid Waste Disposal Facilities** – the area and structures designated to contain solid Waste.

**Spill Contingency Plan** – a document, developed in accordance with Aboriginal Affairs and Northern Development Canada’s *Guidelines for Spill Contingency Planning* that describes the set of procedures to be implemented to minimize the effects of a spill.

**Surveillance Network Program (SNP)** – a monitoring program established to define environmental sampling, analysis, and reporting requirements, as detailed in Annex A of this Licence.

**Temporary Closure** – a state of care and maintenance, with the intent of resuming activities in the near future.

**Toilet Wastes** – all human excreta and associated products, not including Greywater.

**Traditional Knowledge** – the cumulative, collective body of knowledge, experience and values built up by a group of people through generations of living in close contact with nature. It builds upon the historic experiences of a people and adapts to social, economic, environmental, spiritual, and political change.

**Typical Winter Road** – the road alignment, not including the Non-Typical Winter Road, that is for winter use only.

**Unauthorized Discharge** – a release or Discharge of any Waters or Waste not authorized under this Licence.

**Waste** – any substance defined as Waste by section 51 of the *Mackenzie Valley Resource Management Act*.

**Waste Management Plan** – a document, developed in accordance with the Mackenzie Valley Land and Water Board’s *Guidelines for Developing a Waste Management Plan*, that describes the methods of Waste management from Waste generation to final disposal.

**Waste Rock** – extracted rock material that is not utilized in construction or reclamation.

**Wastewater** – any Water that is generated by Project activities or originates on-site, contains Waste, and includes, but is not limited to, Runoff, Seepage, Sewage, and Effluent.

**Water(s)** – any Water as per section 51 of the *Mackenzie Valley Resource Management Act*.

**Watercourse** – a natural watercourse, body of Water or Water supply, whether usually containing Water or not, and includes Groundwater, springs, swamps, and gulches.

**Winter Road** – the alignment including both the Typical Winter Road and Non-typical Winter Road sections.

## Part B: General Conditions

1. The Licensee shall ensure a hard copy of this Licence is maintained on-site at all times.
2. The Licensee shall take every reasonable precaution to protect the environment.
3. In conducting its activities under this Licence, the Licensee shall make every reasonable effort to consider and incorporate any scientific information and Traditional Knowledge that is made available to the Licensee.
4. In each submission required by this Licence or any directive from the Board, the Licensee shall identify all recommendations based on Traditional Knowledge received, describe how the recommendations were incorporated into the submission, and provide justification for any recommendation not adopted, to fulfill Report of EA Measures 10-1, 15-1, 15-4, and Suggestion 15-4.
5. All references to policies, guidelines, codes of practice, statutes, regulations, or other authorities shall be read as a reference to the most recent versions, unless otherwise denoted.
6. The Licensee shall ensure all submissions to the Board:
  - a) Are in accordance with the Mackenzie Valley Land and Water Board's *Document Submission Standards*; and
  - b) Include a conformity statement or table which identifies where the pertinent requirements of this Licence, or other direction from the Board, are addressed.
7. The Licensee shall ensure management plans are submitted to the Board in a format consistent with the Mackenzie Valley Land and Water Board's *Standard Outline for Management Plans*, unless otherwise specified.
8. The Licensee shall comply with all terms of reference, plans, reports, studies and programs approved as per the conditions of this Licence, including such revisions made as per the conditions of this Licence, and as approved by the Board.
9. The Licensee may propose revisions at any time by submitting revised terms of reference, plans, reports, and programs to the Board for approval. Unless otherwise specified, a minimum of 90 days prior to implementing any proposed updates or changes in the terms of reference, plans, reports, and programs, the Licensee shall submit all revisions to the Board, for approval. Any revision submission shall include a revision history table and a summary of the revisions previously made. The Licensee shall not implement revisions until approved by the Board.
10. The Licensee shall submit revised plans, reports, studies, and programs for Phases 1, 2, and 3 to the Board for approval, unless otherwise directed by the Board. Unless otherwise specified, a minimum of 90 days prior to commencement of each phase and implementing any proposed updates or changes in the plans, reports, studies, and programs, the Licensee shall submit all revisions to the Board for approval. Any revision submission shall include a revision history table and a summary of the revisions previously made. The Licensee shall not commence activities for each phase or implement revisions until approved by the Board.
11. The Licensee shall revise any submission as per the Board's direction and resubmit it for approval.
12. The Licensee shall identify how an Adaptive Management framework has been incorporated in each plan and program submitted for Board approval to fulfill the Report of EA Appendix B.
13. If any date for any submission falls on a weekend or holiday, the Licensee may submit the item on the following business day.

14. The Licensee shall comply with the **Schedules**, which are annexed to and form part of this Licence, and any changes to the Schedules as may be made by the Board.
15. The Licensee shall comply with the **Surveillance Network Program**, which is annexed to and forms part of this Licence, and any changes to the Surveillance Network Program as may be made by the Board.
16. The Schedules, the Surveillance Network Program, and any compliance dates specified in this Licence may be updated at the discretion of the Board.
17. The Licensee shall ensure signs are posted for all active Surveillance Network Program stations within 30 days of establishment. All sign(s) shall be located and maintained to the satisfaction of an Inspector.
18. The Licensee shall install, operate, and maintain meters, devices, or other such methods used for measuring the volumes of Waste Discharged to the satisfaction of an Inspector.
19. Beginning March 31, 2020 and no later than every March 31 thereafter, the Licensee shall submit an **Annual Report** to the Board and an Inspector. The Annual Report shall be in accordance with Schedule 1, condition 1.
20. The Licensee shall comply with the **Engagement Plan**, once approved, to fulfill Measure 15-1, 15-4 and Suggestion 15-4 of the Report of EA.
21. A minimum of 90 days prior to the commencement of Phase 1 activities, the Licensee shall submit to the Board, for approval, a revised Engagement Plan. The Licensee shall not commence Phase 1 activities prior to Board approval. Subsequent revisions shall be in accordance with Part B, condition 10.
22. A minimum of ten days prior to commencement of the Project including Phases 1, 2, and 3, the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the commencement date, and the name and contact information of the Licensee's Field Supervisor. Any updates shall be provided to the Board and an Inspector in writing as changes occur.
23. A minimum of ten days prior to the commencement of the Project and each Phase 1, 2, and 3, the Licensee's Field Supervisor shall contact the Inspector at (867) 669-2442.
24. At minimum of ten days prior to returning to the worksite following a seasonal shut down Period, the Licensee's Field Supervisor shall contact an Inspector.
25. The Licensee shall immediately provide written notification to the Board and an Inspector of any non-compliance with the conditions of this Licence or any direction from the Board pursuant to the conditions of this Licence.
26. The Licensee shall submit a revised Project schedule to the Board and an Inspector upon request.

**Part C: Reclamation Security Requirements**

1. Upon request of the Board, the Licensee shall submit a Closure Cost Estimate utilizing the current version of RECLAIM or another method acceptable to the Board.

## Part D: Construction

1. The Licensee shall ensure that all structures intended to contain, withhold, divert, or retain Water or Waste are designed, constructed, and maintained to minimize the escape of Waste to the Receiving Environment.
2. The Licensee shall ensure that all Engineered Structures are constructed and maintained in accordance with the recommendations of the Professional Engineer responsible for the design, including, but not limited to, recommendations regarding field supervision and inspection requirements.
3. The Licensee shall ensure that all material used in Construction of the Project meets the geochemical criteria specified in the approved Geochemical Verification Program referred to in Part E, condition 10.
4. The Licensee shall only use material that is clean, non-PAG and free of contaminants and is from a source within an approved area as per the approved Borrow Pit Management Plan, or that has been approved in writing by an Inspector.
5. The Licensee shall maintain Construction records and geochemical records of Construction materials for all structures and make them available at the request of the Board or an Inspector.
6. The Licensee shall establish and fund an **Independent Technical Review Panel** in accordance with Measure 5-1 of the Report of EA.
7. A minimum of 90 days prior to commencement of the Panel's activities, the Licensee shall submit the Panel's **Terms of Reference** to the Board for approval, to fulfill Report of EA Measure 5-1. The Licensee shall submit a revised Terms of Reference 90 days prior to implementation of any changes to the Terms of Reference.
8. The Licensee shall comply with the Panel's Terms of Reference, once approved.
9. Unless otherwise authorized by an Inspector, a minimum of 90 days prior to the commencement of Construction of all structures, excluding Engineered Structures, intended to contain, withhold, divert, or retain Water or Wastes not reviewed and accepted by the Panel, the Licensee shall submit to the Board for approval, a **Structure Description and Construction Plan**, in accordance with Schedule 2, condition 1. The Licensee shall not commence Construction prior to Board approval of the Plan.
10. A minimum of 90 days prior to the commencement of Construction of any Engineered Structures not reviewed and accepted by the Panel, the Licensee shall submit to the Board for approval, a **Design and Construction Plan** in accordance with Schedule 2, condition 2.
11. A minimum of 90 days prior to the commencement of Construction of any Engineered Structures not reviewed and accepted by the Panel, the Licensee shall submit to the Board, **Design Drawings** stamped and signed by a Professional Engineer. A minimum of 90 days prior to implementing any proposed changes, the Licensee shall submit revised Design Drawings to the Board.
12. A minimum of 45 days prior to the commencement of Construction of any structures reviewed and accepted by the Panel, the Licensee shall submit to the Board the following:
  - a) A **Final Report** from the Panel that indicates their review and acceptance of the Engineered Structure, its Design and Construction Plan, and Design Drawings or any other structures and its Structure Description and Construction Plan ;
  - b) A **Design and Construction Plan**, in accordance with Schedule 2, condition 2, or **Structure Description and Construction Plan**, in accordance with Schedule 2, condition 1, reviewed and accepted by the Panel; and
  - c) A **Design Drawing** of the Engineered Structure stamped and signed by a Professional Engineer, and reviewed and accepted by the Panel.

13. The Licensee may propose revisions at any time to the structures reviewed and accepted by the Panel by submitting to the Board the following:
  - a) A revised Final Report from the Panel that indicates their review and acceptance of the revised Design and Construction Plan and Design Drawings or Structure Description and Construction Plan;
  - b) A revised Design and Construction Plan or Structure Description and Construction Plan reviewed and accepted by the Panel; and
  - c) A revised Design Drawing stamped and signed by a Professional Engineer and reviewed and accepted by the Panel.

Any revision submission shall include a revision history table and a summary of the revisions made. A minimum of 45 days prior to implementing any proposed changes, the Licensee shall submit the above documents to the Board

14. A minimum of ten days prior to the commencement of Construction of any Engineered Structure(s), the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the Construction commencement date, and the name and contact information for the Construction Field Supervisor. Any updates shall be provided to the Board and an Inspector in writing as changes occur.
15. The Licensee shall ensure that all structures, excluding Engineered Structures, are constructed in accordance with the approved Structure Description and Construction Plan(s).
16. The Licensee shall ensure that all Engineered Structures are constructed in accordance with the Design Drawings and approved Design and Construction Plans.
17. Within 90 days of the completion of the Construction of each Engineered Structure, the Licensee shall submit to the Board, an **As-Built Report** stamped and signed by a Professional Engineer, which shall include, but not be limited to, the following information:
  - a) Final as-built drawings of the Engineered Structure(s), stamped and signed by a Professional Engineer;
  - b) Documentation, with rationale, of field decisions that deviate from the Design and Construction Plans and Design Drawings; and
  - c) Any data used to support these decisions.

## **Part E: Waste and Water Management**

1. The Licensee shall manage Waste and Water with the objective of minimizing the impacts of the Project on the quantity and quality of Water in the Receiving Environment through the use of appropriate mitigation measures, monitoring, and follow-up actions.
2. A minimum of ten days prior to depositing any Waste into a licenced municipal facility, the Licensee shall provide written notification to the Board and an Inspector.
3. The Licensee shall dispose of all Waste as described in the approved Waste Management Plan.

### **Management and Monitoring Submissions**

4. The Licensee shall comply with the **Waste Management Plan**, once approved.
5. A minimum of 90 days prior to the commencement of Phase 1 activities, the Licensee shall submit to the Board, for approval, a revised Waste Management Plan. The Licensee shall not commence any Phase 1 activities prior to Board approval. Subsequent revisions shall be in accordance with Part B, condition 10.
6. The Licensee shall comply with the **Sediment and Erosion Control Plan**, once approved. The Plan shall fulfill Part E, condition 1 and be in accordance with the requirements of Schedule 3, condition 1.
7. A minimum of 90 days prior to the commencement of Phase 1 activities, the Licensee shall submit to the Board, for approval, a revised Sediment and Erosion Control Plan. The Licensee shall not commence any Phase 1 activities prior to Board approval. Subsequent revisions shall be in accordance with Part B, condition 10.
8. The Licensee shall comply with the **Permafrost Management and Monitoring Plan**, once approved. The Plan shall fulfill Part E, condition 1 and be in accordance with the requirements of Schedule 3, condition 2.
9. A minimum of 90 days prior to the commencement of Phase 1 activities, the Licensee shall submit to the Board, for approval, a revised Permafrost Management and Monitoring Plan. The Licensee shall not commence any Phase 1 activities prior to Board approval. Subsequent revisions shall be in accordance with Part B, condition 10.
10. The Licensee shall comply with the **Geochemical Verification Program**, once approved. The Plan shall be in accordance with the requirements of Schedule 3, condition 3.
11. A minimum of 90 days prior to the commencement of Phase 1 activities, the Licensee shall submit to the Board, for approval, a revised Geochemical Verification Program. The Licensee shall not commence any Phase 1 activities prior to Board approval. Subsequent revisions shall be in accordance with Part B, condition 10.
12. The Licensee shall comply with the **Borrow Pit Management Plan**, once approved. The Plan shall be in accordance with the requirements of Schedule 3, condition 4. The Licensee shall not develop any Borrow Pit until it is approved in the Borrow Pit Management Plan.
13. A minimum of 90 days prior to the commencement of developing any Borrow Pit, the Licensee shall submit to the Board, for approval, a revised Borrow Pit Management Plan. The Licensee shall not develop any Borrow Pit prior to Board approval. Subsequent revisions shall be in accordance with Part B, condition 9.
14. The Licensee shall comply with the **Water Monitoring Plan**, once approved. The Plan shall be in accordance with the requirements of Schedule 3, condition 5.



15. Within 90 days following the effective date of this Licence, the Licensee shall submit to the Board, for approval, a Water Monitoring Plan. The Licensee shall not commence Phase 1 activities prior to Board approval. Subsequent revisions shall be in accordance with Part B, condition 10.
16. The Licensee shall comply with the **Explosives Management Plan**, once approved. The Plan shall be in accordance with the requirements of Schedule 3, condition 6. The Licensee shall not handle, store, or use explosives until the Board has approved the Explosives Management Plan.
17. A minimum of 90 days prior to handling, using, or storing explosives, the Licenses shall submit to the Board, for approval, a revised Explosives Management Plan. The Licenses shall not handle, use, or store explosives prior to Board approval. Subsequent revisions shall be in accordance with Part B, condition 9.

#### **Operations of Structures and Facilities**

18. The Licensee shall not Discharge Waste, including Wastewater, to any Watercourse, or to the ground surface within 100 metres of the Ordinary High Water Mark of any Watercourse.
19. The Licensee shall operate and maintain the Sewage Disposal Facilities and Solid Waste Disposal Facilities to prevent structural failure and to the satisfaction of an Inspector.

#### **Inspections of Structures and Facilities**

20. The Licensee shall conduct daily erosion inspections of Discharge locations during periods of Discharge, or more frequently as directed by an Inspector. Records of these inspections shall be made available to the Board or an Inspector upon request.
21. The Licensee shall ensure that geotechnical and geochemical inspections of all Engineered Structures are conducted annually, during the summer months, by a Professional Engineer and Professional Geoscientist, and following any extreme events (such as earthquakes, flooding, cracks, sinkhole formation, etc.). The Licensee shall:
  - a) A minimum of two weeks prior to the annual inspection, provide written notification to an Inspector; and
  - b) Within 90 days of completing the inspection, submit the Professional Engineer's and Professional Geoscientist's full **Geotechnical and Geochemical Inspection Report** to the Board and an Inspector. The Report shall include:
    - i. A covering letter from the Licensee outlining an implementation plan to respond to any recommendations made by the Professional Engineer and Professional Geoscientist, including rationale for any decisions that deviate from the Professional Engineer's and Professional Geoscientist's recommendations; and
    - ii. A summary of any actions taken by the Licensee to address the recommendations made following the previous year's inspection.

## Part F: Contingency Planning

1. The Licensee shall ensure that Unauthorized Discharges associated with the Project do not enter any Waters.
2. The Licensee shall comply with the **Spill Contingency Plan**, once approved.
3. A minimum of 90 days prior to the commencement of Phase 1 activities, the Licensee shall submit to the Board, for approval, a revised Spill Contingency Plan. The Licensee shall not commence Phase 1 activities prior to Board approval. Subsequent revisions shall be in accordance with Part B, condition 10.
4. If, during the period of this Licence, a spill or an Unauthorized Discharge occurs or is foreseeable, the Licensee shall:
  - a) Implement the approved Spill Contingency Plan referred to in Part F, condition 2;
  - b) Immediately report it using the NU-NT Spill Report Form by one of the following methods:
    - Telephone: (867) 920-8130
    - Fax: (867) 873-6924
    - E-mail: [spills@gov.nt.ca](mailto:spills@gov.nt.ca)
    - Online: Spill Reporting and Tracking Database
  - c) Within 24 hours, notify the Board and an Inspector; and
  - d) Within 30 days of initially reporting the incident, submit a detailed report, including descriptions of causes, response actions, and any changes to procedures to prevent similar occurrences in the future, to the Board and an Inspector. Any updates to this report shall be provided to the Board and an Inspector in writing as changes occur.
5. The Licensee shall ensure that adequate spill prevention infrastructure and spill response equipment is in place prior to commencement of the Project.
6. The Licensee shall restore all areas affected by spills and Unauthorized Discharges to the satisfaction of an Inspector.
7. The Licensee shall not establish any fuel storage facilities or refueling stations, or store chemical or deleterious substances within 100 metres of the Ordinary High Water Mark of any Watercourse, unless otherwise authorized in writing by an Inspector.

**Part G: Closure and Reclamation**

1. Within 90 days following the effective date of this Licence, the Licensee shall submit to the Board, for approval, a **Closure and Reclamation Plan**. The Plan shall be in accordance with the requirements of Schedule 4, condition 1.
2. A minimum of 90 days prior to the commencement of Phase 2 activities, or as directed by the Board, the Licensee shall submit to the Board, for approval, a revised Closure and Reclamation Plan. The Plan shall be in accordance with the requirements of Schedule 4, condition 1.
3. Three years prior to the expiration of this Licence, or a minimum of two years prior to the end of operations, whichever occurs first, the Licensee shall submit to the Board, for approval, a final Closure and Reclamation Plan to fulfill Report of EA Suggestion 14-1. The Plan shall be in accordance with the requirements of Schedule 4, condition 1.
4. The Licensee shall endeavor to carry out Progressive Reclamation as soon as is reasonably practicable-
5. The Licensee shall conduct Progressive Reclamation in accordance with the most-recently approved Closure and Reclamation Plan, or as otherwise approved by the Board.
6. A minimum of ten days prior to the commencement of any Progressive Reclamation, the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the name and contact information for the Construction Field Supervisor.
7. Within 90 days of completing Closure and Reclamation of any specific component of the Project, the Licensee shall submit to the Board a **Closure and Reclamation Completion Report**. The Report shall be in accordance with the Mackenzie Valley Land and Water Board and Aboriginal Affairs and Northern Development Canada's *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*.
8. Within 4 months of completing Closure and Reclamation of any specific component of the Project, the Licensee shall submit to the Board for approval, a **Performance Assessment Report**. The Report shall be in accordance with the Mackenzie Valley Land and Water Board and Aboriginal Affairs and Northern Development Canada's *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*. The Licensee shall submit subsequent Report(s) as directed by the Board.

**Signed on behalf of the Mackenzie Valley Land and Water Board**

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**Mavis Cli-Michaud, Chair**

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**Amanda Gauthier, Witness**

**Schedule 1**  
**Attached to Water Licence MV2019L8-0002**  
**Canadian Zinc Corporation – All Season Road**

Part B: General Conditions

1. The Annual Water Licence Report referred to in Part B, condition 18 of this Licence shall include, but not be limited to, the following information about activities conducted during the previous calendar year:
  - a) A brief summary of Project activities;
  - b) An updated Project schedule;
  - c) A summary of the calibration and status of the meters and devices referred to in Part B, condition 18 of this Licence;
  - d) A summary of engagement activities conducted in accordance with the approved Engagement Plan, referred to in Part B, condition 20 of this Licence;
  - e) A summary of how Traditional Knowledge influenced decision making;
  - f) A summary of Construction activities conducted in accordance with Part D of this Licence;
  - g) A summary of repairs and maintenance activities conducted in accordance with this Licence;
  - h) A summary of activities conducted in accordance with the approved Waste Management Plan, required in Part E, condition 4 of this Licence, including:
    - i. A summary of approved updates or changes to the process or facilities required for the management of Waste;
    - ii. Monthly and annual quantities, in cubic metres, of all solid Waste Discharged, identified by location;
    - iii. Monthly and annual quantities, in cubic metres, of all liquid Waste Discharged, identified by location;
    - iv. Monthly and annual quantities, in cubic metres, of hazardous Waste generated and removed;
    - v. Monthly and annual quantities, in cubic metres, of Sewage solids removed from the Sewage Disposal Facilities identified by disposal location; and
    - vi. A map depicting the location of the Sumps.
  - i) A summary of activities conducted in accordance with the approved Sediment and Erosion Control Plan, required in Part E, condition 6 of this Licence, including:
    - i. A summary of approved updates or changes to the process or facilities required for the management of erosion and sedimentation;
    - ii. A description of any erosion susceptible areas encountered (provide a map and photos);
    - iii. A summary of activities undertaken to prevent or mitigate erosion;
    - iv. A report of the performance of mitigations applied;
    - v. A summary and interpretation of monitoring results, including any Action Level exceedances; and
    - vi. A description of actions taken in response to any Action Level exceedances.
  - j) A summary of activities conducted in accordance with the approved Permafrost Management and Monitoring Plan, required in Part E, condition 8 of this Licence, including:
    - i. A summary and interpretation of any monitoring results, including any Action Level exceedances; and
    - ii. A list of any Action Level exceedances and a description of actions taken in response to any Action Level exceedances.
  - k) A summary of activities conducted in accordance with the approved Geochemical Verification Program, required in Part E, condition 10, including:
    - i. A summary of approved updates or changes to the processes for characterizing and managing Acid Rock Drainage and Metal Leaching material;
    - ii. A comparison of the annual quantities of each type of Waste Rock generated to the quantities predicted in the approved Geochemical Verification Program;
    - iii. A summary and interpretation of results from the geochemical monitoring performed under the approved Geochemical Verification Program;
    - iv. A summary and interpretation of results from Seepage monitoring performed under the approved Geochemical Verification Program, including:
      - a. a site map with Seepage locations;
      - b. comparisons to reference locations;
      - c. an analysis of major trends over the year and since Project inception; and

- d. a summary of recommendations for future Seepage monitoring and/or management actions.
  - v. A summary and interpretation of Water quality monitoring results for each of the main source areas and how these compare to predicted values;
  - vi. A summary of any exceedances of the Action Levels described in the Geochemical Verification Program; and
  - vii. A description of actions taken in response to any Action Level exceedances under the Geochemical Verification Program.
- l) A summary of activities conducted in accordance with the approved Borrow Pit Management Plan, required in Part E, condition 12, including:
  - i. A summary of borrow sources approved through the Borrow Pit Management Plan;
  - ii. A summary and interpretation of any monitoring results including any Action Level exceedances; and
  - iii. A list of any Action Level exceedances and a description of actions taken in response to any Action Level exceedances.
- m) A summary of activities conducted in accordance with the approved Water Monitoring Plan, required in Part E, condition 14 of this Licence, including:
  - i. A summary of approved updates or changes to the processes for monitoring Water;
  - ii. A summary and interpretation of any monitoring results; and
  - iii. A list of any Action Level exceedances and a description of actions taken in response to any Action Level exceedances.
- n) A summary of activities conducted in accordance with the approved Explosives Management Plan, required in Part E, condition 16 of this Licence, including:
  - i. A summary and interpretation of any monitoring results including any Action Level exceedances; and
  - ii. A list of any Action Level exceedances and a description of actions taken in response to any Action Level exceedances.
- o) A summary of activities conducted in accordance with the approved Spill Contingency Plan, required in Part F, condition 2 of this Licence, including:
  - i. A list and description for all Unauthorized Discharges, including the date, NWT spill number, volume, location, summary of the circumstances and follow-up actions taken, and status (i.e. open or closed), in accordance with the reporting requirements in Part F, condition 4 of this Licence; and
  - ii. A summary of any spill training carried out.
- p) A summary of any Closure and Reclamation work completed. The Report shall be in accordance with the Mackenzie Valley Land and Water Board and Aboriginal Affairs and Northern Development Canada's *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*.
- q) Tabular summaries of all data and information generated under the Surveillance Network Program annexed to this Licence and graphical summaries of parameters in Microsoft Excel™ format.
- r) A list of any non-compliance(s) with the conditions of this Licence or any direction from the Board pursuant to the conditions of this Licence;
- s) A summary of actions taken to address concerns, non-conformances, or deficiencies in any reports filed by an Inspector;
- t) A table detailing all commitments related to the deposit of Waste made during the Environmental Assessment, with descriptions of how each commitment is being or has been met; and
- u) Any other details requested by the Board by November 30 of the year being reported.

**Schedule 2**  
**Attached to Water Licence MV2019L8-0002**  
**Canadian Zinc Corporation – All Season Road**

Part D: Construction

1. The **Structure Description and Construction Plan** referred to in Part D, condition 9, shall include, but not be limited to the following:
  - a) Information about the design of the facilities:
    - i. A description of the facilities to be constructed;
    - ii. The proposed location(s) of the facilities, with GPS coordinates and a map to scale;
    - iii. Relevant background information for the area beneath the footprint of the containment and Runoff control structures, including the results of geotechnical and geochemical investigations; hydrogeological investigations; programs to characterize soil, rock, Groundwater, ground ice, and ground temperature conditions to the depth expected to be affected by the proposed facilities; and any other relevant information;
    - iv. Design specifications and performance parameters; and
    - v. Design analysis and results.
  - b) Information about the Construction of the facilities:
    - i. A Construction schedule, including sequencing information;
    - ii. A description of the materials required for Construction, including, but not limited to:
      - a. sources;
      - b. quantities;
      - c. physical characteristics; and
      - d. geochemical characteristics.
    - iii. A description of any potential impacts on the Receiving Environment associated with Construction of the facilities;
    - iv. A description of any mitigation measures that will be undertaken to minimize the potential impacts identified above;
    - v. A description of the Construction monitoring program to demonstrate conformance with design specifications; and
    - vi. A description of the operational monitoring program to demonstrate conformance with the design performance.
  - c) A description of Adaptive Management processes that systematically link monitoring results to management activities and allow management activities to be developed adaptively, in response to changes in the Receiving Environment.
  
2. The **Design and Construction Plan** referred to in Part D, condition 10, shall include, but not be limited to the following:
  - a) Information about the design of the facilities:
    - i. A description of the facilities to be constructed;
    - ii. The proposed location(s) of the facilities, with GPS coordinates and a map to scale;
    - iii. Relevant background information for the area beneath the footprint of the containment and Runoff control structures, including the results of geotechnical and geochemical investigations; hydrogeological investigations; programs to characterize soil, rock, Groundwater, ground ice, and ground temperature conditions to the depth expected to be affected by the proposed facilities; and any other relevant information, as deemed adequate by the Professional Engineer responsible for the design;
    - iv. Design specifications and performance parameters; and
    - v. Stability analyses.
  - b) Information about the Construction of the facilities:

- i. A Construction schedule, including sequencing information;
  - ii. A description of the materials required for Construction, including, but not limited to:
    - a. sources;
    - b. quantities;
    - c. physical characteristics; and
    - d. geochemical characteristics.
  - iii. A description of any potential impacts on the Receiving Environment associated with Construction of the facilities;
  - iv. A description of any mitigation measures that will be undertaken to minimize the potential impacts identified above;
  - v. A description of the Construction monitoring program to demonstrate conformance with design specifications; and
  - vi. A description of the operational monitoring program to demonstrate conformance with the design performance.
- c) A description of Adaptive Management processes that systematically link monitoring results to management activities and allow management activities to be developed adaptively, in response to changes in the Receiving Environment.
- d) A quality control plan stamped by a Professional Engineer, a component of which includes a plan for a Professional Engineer to supervise and field check Construction activities.

**Schedule 3**  
**Attached to Water Licence MV2019L8-0002**  
**Canadian Zinc Corporation – All Season Road**

Part E: Waste and Water Management

1. The **Sediment and Erosion Control Plan**<sup>2</sup> referred to in Part E, condition 6, shall include, but not be limited to the following for the activities associated with each phase:
  - a) Inspections on land, including but not limited to:
    - i. Short- and long-term inspection methods, locations (provide a map), and parameters;
    - ii. Inspection form(s) that denote the items/parameters that will be assessed during inspection;
    - iii. Inspection frequency including any criteria that will be used to modify this frequency or discontinue;
    - iv. Quality assurance and quality control; and
    - v. A mechanism for reporting the findings of inspections.
  - b) Monitoring on land, including but not limited to:
    - i. Short- and long-term monitoring (survey, sampling, testing) methods;
    - ii. Monitoring locations and collection methodology including supporting rationale and parameters;
    - iii. Monitoring duration and frequency including any criteria that will be used to modify this frequency or discontinue monitoring;
    - iv. Quality assurance and quality control;
    - v. A mechanism for reporting and interpretation of the monitoring data;
    - vi. Proposed control and mitigation measures, including specific measures that will be used in riparian areas; and
    - vii. A description of an Adaptive Management framework that satisfies the requirements of Report of EA Appendix B, including but not limited to:
      - a. a decision tree that outlines the path of Adaptive Management decisions based on results of both the short- and long-term monitoring program.
  - c) Details specific to the hoverbarge associated infrastructures, including but not limited to:
    - i. Details outlining sedimentation and erosion management during construction of the hoverbarge associated infrastructures;
    - ii. Operational details of the hoverbarge, including sedimentation and erosion management following construction;
    - iii. Hoverbarge associated inspections and monitoring;
    - iv. Proposed sedimentation and erosion control and mitigation measures associated with hoverbarge operations; and
    - v. A description of an Adaptive Management framework that satisfies the requirements of Report of EA Appendix B, including but not limited to:
      - a. a decision tree that outlines the path of Adaptive Management decisions based on results of both the short- and long-term monitoring program.
2. The **Permafrost Management and Monitoring Plan** referred to in Part E, condition 8, shall include, but not be limited to the following for the activities associated with each phase:
  - a) Fulfills Report of EA Measure 12-1 Part 4;
  - b) Identification of monitoring (survey, sampling, testing) methods, locations (provide a map), site selection and parameters for Permafrost baseline collection and short/long term monitoring;
  - c) A summary of findings from baseline collection and how it will be used to inform detailed and final design of the Winter Road, All Season Road, Borrow Pits, and other infrastructure in a way that anticipates and avoids Permafrost degradation and associated impacts on the surrounding environment;
  - d) Monitoring duration and frequency including any criteria that will be used to modify this frequency or discontinue monitoring;
  - e) Quality assurance and quality control measures;

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<sup>2</sup> Note: all water quality monitoring related to sediment and erosion will be captured and referred to in Schedule 3, condition 5.



- f) A mechanism for reporting and interpreting the baseline, short- and long-term monitoring data;
  - g) Proposed control and mitigation measures;
  - h) A description of an Adaptive Management framework that satisfies the requirements of Report of EA Appendix B, including but not limited to:
    - i. A decision tree that outlines the path of Adaptive Management decisions based on results of both the short- and long-term monitoring program.
3. The **Geochemical Verification Program**<sup>3</sup> referred to in Part E, condition 10, shall include, but not be limited to the following for the activities associated with each phase:
- a) Identification of monitoring (survey, sampling, testing) methods for geochemical characterization studies (Acid Rock Drainage/Metal Leaching potential) of bedrock, Borrow sources, and overburden, with supporting rationale and parameters;
  - b) A summary of findings from geochemical characterization studies (Acid Rock Drainage/Metal Leaching potential) on the bedrock, borrow sources, and overburden;
  - c) Monitoring locations (provide a map) for follow-up verification testing, with supporting rationale;
  - d) Monitoring duration and frequency including any criteria that will be used to modify this frequency or discontinue monitoring;
  - e) Criteria for defining PAG, non-PAG and Metal Leaching materials with supporting rationale;
  - f) Criteria for defining high, moderate, and low risk Waste Rock, with supporting rationale;
  - g) A mechanism for reporting results and interpretation of the data;
  - h) Quality assurance and quality control measures;
  - i) A contingency plan in the event of increasing trends in metal leaching or acid generation potential; and
  - j) A description of an Adaptive Management framework that satisfies the requirements of Report of EA Appendix B including but not limited to:
    - i. A decision tree that outlines the path of Adaptive Management decisions based on results of both the short- and long-term monitoring program.
4. The **Borrow Pit Management Plan** referred to in Part E, condition 12, shall include, but not be limited to the following for the activities associated with each phase:
- a) Details regarding the design of each Borrow Pit, including but not limited to:
    - i. Physical characteristics;
    - ii. Hydrogeological considerations (maintaining natural drainage); and
    - iii. Intended purpose of each Borrow Pit (long-term versus construction only).
  - b) Rationalization for all proposed Borrow Pits, including a consideration of Permafrost conditions at each Borrow Pit;
  - c) A description of efforts to reduce the number of Borrow sources;
  - d) Reference to the results of the Geochemical Verification Program for each Borrow Pit, including an incorporation of any necessary mitigations;
  - e) Erosion and sedimentation control details for each Borrow Pit; and
  - f) A schedule, including proposed sequence and timing of Borrow development.
5. The **Water Monitoring Plan** referred to in Part E, condition 14, shall include, but not be limited to the following for the activities associated with each phase:
- a) Baseline monitoring that fulfill the Report of EA Measure 8-1, Part 2, including but not limited to:
    - i. A clear description of how Measure 8-1, Part 2 will be met, including rational for the number of hydrometric stations selected;
    - ii. Hydrological conditions;
    - iii. Areas with concerns of Acid Road Drainage and Metal Leaching, total suspended solids and turbidity, and blast residue;

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<sup>3</sup> Note: all geochemical water quality monitoring will be captured and referred to in Schedule 3, condition 5.

- iv. Water quality in watercourses listed in the Surveillance Network Program annexed to this licence; and
  - v. An assessment of hydrological conditions in the proposed Liard River landing areas and a proposed Groundwater monitoring program or rationale supporting exclusion of Groundwater monitoring.
- b) Monitoring details for the Project, including but not limited to:
- i. Identification of short- and long-term monitoring (survey, sampling, testing) methods;
  - ii. Monitoring locations (provide a map) for follow-up verification testing, with supporting rationale;
  - iii. Monitoring duration and frequency including any criteria that will be used to modify this frequency or discontinue monitoring;
  - iv. Analytical requirements;
  - v. Quality assurance and quality control;
  - vi. A mechanism for reporting results and interpretation of the data; and
  - vii. Proposed control and mitigation measures.
- c) Ensure that b) specifies monitoring at:
- i. Watercourses and watercourse crossings;
  - ii. Active Borrow Pits (including during or immediately following rainfall events);
  - iii. Road embankment cuts;
  - iv. Runoff controls;
  - v. Surface water diversions;
  - vi. Water settling structures;
  - vii. Where explosives are used; and
  - viii. Streams with flow in winter, if there could be disturbance of the ice/snow cover over the flowing water caused by erodible material that could generate sediment.
- d) Include further details of monitoring for total suspended solids (TSS), including but not limited to:
- i. Plan for the development of a TSS/turbidity regression curve to establish the site-specific relationship between turbidity field measurements and laboratory measurements;
  - ii. Plan to measure upstream, near and downstream of construction activities; and
  - iii. Location of streams for long-term monitoring.
- e) A description of an Adaptive Management framework that satisfies the requirements of Report of EA Measure 8-1 Part 5 and Appendix B, including but not limited to:
- i. A decision tree that outlines the path of Adaptive Management decisions based on results of both the short and long-term monitoring program.
- f) Rationale for keeping a certain aspect of water monitoring separate from the Water Monitoring Plan.
6. The **Explosives Management Plan**, referred to in Part E, condition 16, shall include, but not be limited to the following for the activities associated with each phase:
- a) Mitigation approaches to be deployed in handling, use, and storage of explosives;
  - b) How the Licensee proposes to minimize nitrogen species loading to the environment;
  - c) A description of the monitoring required to evaluate whether the mitigation approaches for storage, handling, and blasting procedures are effective, with rationale; and
  - d) A description of an Adaptive Management framework that satisfies the requirements of Report of EA Appendix B, including but not limited to:
    - i. A decision tree that outlines the path of Adaptive Management decisions based on results of both the short and long-term monitoring program.

**Schedule 4**  
**Attached to Water Licence MV2019L8-0002**  
**Canadian Zinc Corporation – All Season Road**

Part G: Closure and Reclamation

1. The **Closure and Reclamation Plan** referred to in Part G, condition 1, shall include, but not be limited to, the following:
  - a) A description of how the Report of EA Suggestion 14-1 is fulfilled;
  - b) A plain language summary of the Plan;
  - c) A description of the overall goals for Closure and Reclamation of the Project, including expected future land use;
  - d) A description of the Closure and Reclamation planning team;
  - e) A description of engagement related to Closure and Reclamation planning, including a summary of completed and planned engagement, and links to the Engagement Plan referred to in Part B, condition 20 for the Project;
  - f) A list of any other regulatory instruments required for Closure and Reclamation of the Project;
  - g) A description of the pre-existing and current Project environment, including, but not limited to:
    - i. Climatic conditions;
    - ii. Physical conditions;
    - iii. Chemical conditions;
    - iv. Biological conditions;
    - v. Physical or chemical assessments of soil, water, and Permafrost; and
    - vi. Traditional uses.
  - h) A description of the Project, including, but not limited to:
    - i. Site history;
    - ii. Project development;
    - iii. Current status of the Project;
    - iv. Maps delineating all disturbed areas, Borrow locations, site facilities, hydrological features, and elevation contours; and
    - v. Photographs.
  - i) A description of each Project component, including, but not limited to:
    - i. Stream crossings;
    - ii. Camp and laydown area;
    - iii. Liard River barge crossing and landing areas;
    - iv. Borrow Pits;
    - v. Areas affected by spills or Unauthorized Discharges; and
    - vi. Other areas affected by Project activities.
  - j) For the Project site, a description of Closure and Reclamation plans, including, but not limited to:
    - i. Closure Objectives and Closure Criteria;
    - ii. Preferred Closure and Reclamation option and method for each Project component identified in Part G condition 4 above;
    - iii. Design drawings, signed and stamped by a Professional Engineer, for any Engineered structures;
    - iv. Water management and restoration of natural drainage;
    - v. Predicted environmental effects during and after Closure and Reclamation activities;
    - vi. Post-closure monitoring, maintenance, and reporting;
    - vii. Description of an Adaptive Management framework that satisfies the requirements of Report of EA Appendix B;
    - viii. Uncertainties and contingencies;
    - ix. Climate change considerations; and
    - x. Reclamation Research plans.
  - k) A description of any planned Progressive Reclamation, including, but not limited to:
    - i. Progressive Reclamation goals and objectives;

- ii. A description of activities (including timing) and methods (including techniques and materials);
  - iii. A description of an Adaptive Management framework that satisfies the requirements of Report of EA Appendix B;
  - iv. Contingencies; and
  - v. An implementation schedule.
- l) A plan for Temporary Closure, including, but not limited to the following information:
  - i. Temporary Closure goals and objectives;
  - ii. A description of activities and methods;
  - iii. A description of monitoring, maintenance, and reporting;
  - iv. A description of an Adaptive Management framework that satisfies the requirements of Report of EA Appendix B;
  - v. Contingencies; and
  - vi. An implementation schedule.
- m) An implementation schedule that includes Progressive Reclamation and final Closure and Reclamation activities; and
- n) A Closure Cost Estimate.

## ANNEX A: SURVEILLANCE NETWORK PROGRAM

<b>LICENSEE:</b>	Canadian Zinc Corporation
<b>LICENCE NUMBER:</b>	MV2019L8-0002
<b>EFFECTIVE DATE OF LICENCE:</b>	
<b>EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM (SNP):</b>	

### Part A – Surveillance Network Program Description and Monitoring Requirements

1) The location of sampling sites and specific monitoring requirements are as follows:

#### SNP station Quick Reference Table

SNP Station ID	Description	Status

a) Surveillance Network Program (SNP)

<b>Description:</b>	
<b>Location:</b>	
<b>Sampling Frequency:</b>	
<b>Sampling Parameters:</b>	
<b>Rationale:</b>	

## Part B – Volume and Temperature Measurement Requirements

## ANNEX B: CONCORDANCE TABLE OF ITEMS REQUIRING SUBMISSION

This table summarizes the information the Licensee is required to submit as per the Water Licence conditions.

<b>Part of Licence</b>	<b>Item</b>	<b>Date</b>
Part B, condition 9	Revised terms of reference, plans, reports, and programs	A minimum of 90 days prior to implementing any proposed changes
Part B, condition 10	Revised terms of reference, plans, reports, and programs for Phases 1, 2, 3	A minimum of 90 days prior to the commencement of each phase and implementing any proposed updates or changes
Part B, condition 19	Annual Water Licence Report	March 31
Part B, condition 20	Engagement Plan	A minimum of 90 days prior to the commencement of Phase 1 activities
Part D, condition 7	Revised Panel's Terms of Reference	90 days prior to implementation of any changes to the Terms of Reference
Part D, condition 9	Structure Description and Construction Plan	90 days prior to the commencement of Construction of all structures, excluding Engineered Structures, intended to contain, withhold, divert, or retain Water or Wastes not accepted and received by the Panel
Part D, condition 10	Design and Construction Plan	A minimum of 90 days prior to the commencement of Construction of any Engineered Structures not reviewed and accepted by the Panel
Part D, condition 11	Design Drawings	A minimum of 90 days prior to the commencement of Construction of any Engineered Structures not reviewed and accepted by the Panel
Part D, condition 12	Final Report, Design and Construction Plan, Design Drawings	A minimum of 45 days prior to the commencement of Construction of any structures reviewed and accepted by the Panel
Part D, condition 12	Final Report, Design and Construction Plan, Design Drawings (revised)	A minimum of 45 days prior to implementing any proposed changes
Part D, condition 17	As-Built Report	Within 90 days of the completion of the Construction of each Engineered Structure
Part E, condition 4	Waste Management Plan	A minimum of 90 days prior to the commencement of Phase 1 activities
Part E, condition 6	Sediment and Erosion Control Plan	A minimum of 90 days prior to the commencement of Phase 1 activities
Part E, condition 8	Permafrost Management and Monitoring Plan	A minimum of 90 days prior to the commencement of Phase 1 activities
Part E, condition 10	Geochemical Verification Program	A minimum of 90 days prior to the commencement of Phase 1 activities
Part E, condition 12	Borrow Pit Management Pit	A minimum of 90 days prior to the development of any Borrow Pit
Part E, condition 14	Water Monitoring Plan	Within 90 days following the effective date of this Licence
Part E, condition 16	Explosives Management Plan	A minimum of 90 days prior to handling, using, or storing explosives
Part E, condition 21	Geotechnical and Geochemical Inspection Report	Within 90 days of completing the inspection
Part F, condition 2	Spill Contingency Plan	A minimum of 90 days prior to the commencement of Phase 1 activities

Part G, condition 1	Closure and Reclamation Plan	Within 90 days following the effective date of this Licence, minimum of 90 days prior to the commencement of Phase 2 activities
Part G, condition 3	Final Closure and Reclamation Plan	Three years prior to the expiration of this Licence, or a minimum of two years prior to the end of operations, whichever occurs first
Part G, condition 7	Closure and Reclamation Completion Report	Within 90 days of completing Closure and Reclamation of any specific component of the Project
Part G, condition 8	Performance Assessment Report	Within 4 months of completing Closure and Reclamation of any specific component of the Project



## ANNEX C: Table of Revision History

Date	Location of Change	Description of Change