

**MV2019L2-0006**  
**Canadian Zinc Corporation – Mineral Exploration**  
**Type B Water Licence**

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**Notes:**

**Yellow Highlighting** represents changes associated with the January 2021 Amendment Application and request to change Surveillance Network Program.

**Purple Highlighting** represents administrative updates proposed by Board staff.

## Part A: Scope and Definitions

### Scope:

1. This Licence entitles the Licensee to use Water and Discharge Waste for mining exploration and associated uses including underground decline development to be accessed at the 870 metre elevation at the Prairie Creek Mine and drilling at up to 60 sites located throughout the Prairie Creek Mine property. **SCOPE**
2. This Licence is issued subject to the conditions contained herein with respect to the use of Water and the deposit of Waste in any Waters 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 Waters. Whenever new Regulations are made or existing Regulations are amended by the Commissioner in Executive Council under the *Waters 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. **REGULATIONS SUBJECT TO CHANGE**
3. Compliance with the defined 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. **LEGISLATIVE COMPLIANCE**

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

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

**Analyst** – an Analyst designated by the Minister under subsection 65(1) of the *Waters Act*.

**Average Concentration** – the arithmetic mean/discrete average of four consecutive analytical results, or if less than four analytical results, the arithmetic mean/discrete average of the analytical results collected during a batch decant, as submitted to the Board in accordance with the sampling and analysis requirements specified in the Surveillance Network Program.

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

**Catchment Pond** – the Engineered Structure designed to contain Runoff and associated liquid Waste from the Prairie Creek mine site, labelled “Run Off Settling Pond” as shown on Drawing Number 301, dated August 2000 and titled “Site Plan”.

**Closure Cost Estimate** – has the same meaning as that in the MVLWB/GNWT/AANDC *Guidelines for Closure and Reclamation Cost Estimates for Mines*.

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

**Closure Objectives** – has the same meaning as that in the MVLWB/AANDC *Guidelines for the Closure and Reclamation of Advance 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 and human activities.

**Closure and Reclamation Plan (CRP)** – a document, developed in accordance with this Licence and the MVLWB/AANDC *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.

**Component-Specific Closure and Reclamation Plan (CRP)** – a document, developed in accordance with this Licence and the MVLWB/AANDC *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 a component of the Project.

**Decline Operations** – refers to the time period when personnel are conducting exploration work in the underground.

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

**Effluent** – a Wastewater Discharge.

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

**Effluent Quality Criteria (EQC)** – numerical or narrative limits on the quality or quantity of the Waste deposited to the Receiving Environment.

**Engagement Plan** – a document, developed in accordance with the MVLWB *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 related to Water Use or the deposit of Waste that is designed by a Professional Engineer associated with the Project.

**Environmental Assessment (EA)** – the totality of the Mackenzie Valley Environmental Impact Review Board's Public Registry for Environmental Assessment EA01-003.

**Freeboard** – the vertical distance between the Water or Wastewater line and the lowest elevation of the effective Water or Wastewater containment crest on the upstream slope of a Dam or dyke.

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

**Groundwater** – any Water defined as Groundwater as per section 1 of the Waters Regulations: all water in a zone of saturation below the land surface, regardless of its origin.

**Inspector** – an Inspector designated by the Minister under subsection 65(1) of the *Waters Act*.

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

**Maximum Average Concentration** – the concentration of a parameter that cannot be exceeded by the running average of any four consecutive analytical results.

**Maximum Grab Concentration** – the concentration of a parameter that cannot be exceeded in any one grab sample.

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

**Minewater** – Groundwater, surface Water or any Water that is pumped or flows out of any underground mine working or open pit.

**Minister** – the Minister of the Government of the Northwest Territories (GNWT) – Environment and Natural Resources.

**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).

**Polishing Pond** – the Engineered Structure designed to contain the liquid Waste from the decline development and operation process, located adjacent to the crusher and concentrator building.

**Potentially Acid Generating (PAG) Rock** – any rock that has the capability to produce acidic leachate, Seepage, or drainage.

**Prairie Creek Valley Aquifer** – the saturated bed, formation, or group of formations in the Prairie Creek Valley which yields water in sufficient quantity to be of consequence as a source of water.

**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 as per 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 phase of the Project.

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

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

**RECLAIM** – the Government of the Northwest Territories' or Crown-Indigenous Relations and Northern Affairs Canada's 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*.

**Remediation** – the removal, reduction or neutralization of substances, Wastes or hazardous materials from a site in order to prevent or minimize any adverse effects on the environment and public safety, now or in the future.

**Response Framework** – a systematic approach to responding to the results of a monitoring program through adaptive management actions.

**Runoff** – the overland flow of Water or Wastewater that occurs when precipitation, meltwater, or other Water is not absorbed by the land.

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

**Settling Pond** – any natural or human-made depression designed to separate solids from Water or Wastewater.

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

**Site Operations** – refers to the time period when personnel are on site.

**Spill Contingency Plan** – a document, developed in accordance with INAC's *Guidelines for Spill Contingency Planning*.

**Surveillance Network Program (SNP)** – a monitoring program required by this Licence and detailed in Annex A of this Licence.

**Tailings** – the material rejected from the mill after the recoverable valuable minerals have been extracted.

**Tailings Containment Facilities** – the area(s) and Engineered Structures designated to contain Tailings.

**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.

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

**Waste** – any substance defined as Waste by section 1 of the *Waters Act*:

- a) a substance that, if added to water, would degrade or alter or form part of a process of degradation or alteration of the quality of the water to an extent that is detrimental to its use by people or by an animal, fish or plant, or
- b) water that contains a substance in such a quantity or concentration, or that has been so treated, processed or changed, by heat or other means, that it would, if added to other water, degrade or alter or form part of a process of degradation or alteration of the quality of that water to the extent described in paragraph (a),

and includes

- c) a substance or water that, for the purposes of the Canada Water Act, is deemed to be waste,
- d) a substance or class of substances prescribed by regulations made under subparagraph 63(1)(b)(i),
- e) water that contains a substance or class of substances in a quantity or concentration that is equal to or greater than a quantity or concentration prescribed in respect of that substance or class of substances by regulations made under subparagraph 63(1)(b)(ii), and
- f) water that has been subjected to a treatment, process or change prescribed by regulations made under subparagraph 63(1)(b)(iii).

**Waste Disposal Facilities** – the area(s) and structures designated for the disposal of Waste.

**Waste Management Plan** – a document, developed in accordance with the MVLWB *Guidelines for Developing a Waste Management Plan*, that describes the methods of Waste management from Waste generation to final disposal.

**Waste Rock** – all rock materials, except ore and Tailings, which are produced as a result of mining and milling operations.

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

**Water** – any Water as per section 1 of the *Waters Act*: water under the administration and control of the Commissioner, whether in a liquid or frozen state, on or below the surface of land.

**Watercourse** – as defined in section 1 of the Waters Regulations: a natural watercourse, body of Water or Water supply, whether usually containing Water or not, and includes Groundwater, springs, swamps, and gulches.

**Water Management Area** – a geographical area of the Northwest Territories established by section 2 and Schedule A of the Waters Regulations.

**Waters Regulations** – the regulations proclaimed pursuant to section 63 of the *Waters Act*.

**Water Supply Facilities** – the area(s) and structures designated to collect and supply Water for the Project.

**Water Use** – as defined in section 1 of the *Waters Act*: a direct or indirect use of any kind, including, but not limited to,

- a) a diversion or obstruction of waters,
- b) an alteration of the flow of waters, and
- c) an alteration of the bed or banks of a river, stream, lake or other body of water, whether or not the body of water is seasonal, but does not include a use connected with shipping activities that are governed by the *Canada Shipping Act, 2001*.

**Water Use Fee** – the fee for use of Water as per the Waters Regulations pursuant to section 63 of the *Waters Act* and the Mackenzie Valley Land and Water Board's *Water Use Fee Policy*.

## Part B: General Conditions

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| 1.  | The Licensee shall ensure a copy of this Licence is maintained on site at all times.   | <b>COPY OF LICENCE</b>  |
| 2.  | The Licensee shall take every reasonable precaution to protect the environment.  | <b>PRECAUTION TO PROTECT ENVIRONMENT</b>                            |
| 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.  | <b>INCORPORATE SCIENTIFIC INFORMATION AND TRADITIONAL KNOWLEDGE</b> |
| 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.  | <b>IDENTIFY TRADITIONAL KNOWLEDGE</b>                               |
| 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.   | <b>USE UP-TO-DATE REFERENCES</b>                                    |
| 6.  | The Licensee shall ensure all submissions to the Board:<br>a) Are in accordance with the <i>MVLWB Document Submission Standards</i> ;<br>b) Include a conformity statement or table which identifies where the requirements of this Licence, or other directives from the Board, are addressed; and<br>c) Include any additional information requested by the Board. | <b>SUBMISSION FORMAT AND CONFORMITY</b>                             |
| 7.  | The Licensee shall ensure management plans are submitted to the Board in a format consistent with the <i>MVLWB Standard Outline for Management Plans</i> , unless otherwise specified.   | <b>MANAGEMENT PLAN FORMAT</b>                                       |
| 8.  | The Licensee shall comply with all plans, programs, and studies approved pursuant to the conditions of this Licence, including such revisions made as per the conditions of this Licence, and as approved by the Board.  | <b>COMPLY WITH SUBMISSIONS AND REVISIONS</b>                        |
| 9.  | The Licensee shall conduct an annual review of all plans and programs, and make any revisions necessary to reflect changes in operations, contact information, or other details. No later than March 31 each year, the Licensee shall send a notification letter to the Board, listing the documents that have been reviewed and do, or do not, require revisions.   | <b>ANNUAL REVIEW</b>  |
| 10. | The Licensee may propose changes at any time by submitting revised plans, programs, or studies to the Board, for approval, a minimum of 90 days prior to the proposed implementation date for the changes. The Licensee shall not implement the changes until approved by the Board.   | <b>REVISIONS</b>  |
| 11. | The Licensee shall revise any submission and submit it as per the Board's directive.   | <b>REVISE AND SUBMIT</b>  |



12.	If any date for any submission falls on a weekend or holiday, the Licensee may submit the item on the following business day.	<b>SUBMISSION DATE</b>
13.	The Licensee shall comply with the Schedules, which are annexed to and form part of this Licence, and any updates to the Schedules as may be made by the Board.	<b>COMPLY WITH SCHEDULE(S)</b>
14.	The Licensee shall comply with the Surveillance Network Program (SNP), which is annexed to and forms part of this Licence, and any updates to the SNP as may be made by the Board.	<b>COMPLY WITH SURVEILLANCE NETWORK PROGRAM</b>
15.	The Schedules, the SNP, and any compliance dates specified in this Licence may be updated at the discretion of the Board.	<b>UPDATES TO COMPLIANCE DATE(S)</b>
16.	The Licensee shall ensure signs are posted for all active SNP stations. All sign(s) shall be located and maintained to the satisfaction of an Inspector.	<b>POST SURVEILLANCE NETWORK PROGRAM SIGN(S)</b>
17.	The Licensee shall install, operate, and maintain meters, devices, or other such methods used for measuring the volumes of Water used and Waste Discharged to the satisfaction of an Inspector.	<b>MEASURE WATER USE AND WASTE DISCHARGED</b>
18.	The Licensee shall adhere to all commitments as outlined in the following: a) Attachments 1 and 2 of the Mackenzie Valley Environmental Impact Review Board's Attachments to Reasons for Decision; and b) The new commitments made by the Licensee in their January 31, 2003 response to the Mackenzie Valley Environmental Impact Review Board's information request.	<b>EA COMMITMENTS</b>
19.	Beginning March 31, 2020 and no later than every March 31 thereafter, the Licensee shall submit an <b>Annual Water Licence Report</b> to the Board and an Inspector. The Report shall be in accordance with the requirements of Schedule A, Condition 1.	<b>ANNUAL WATER LICENCE REPORT</b>
20.	The Licensee shall comply with the <b>Engagement Plan</b> , once approved.	<b>ENGAGEMENT PLAN</b>
21.	A minimum of ten days prior to commencement of the Project, the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the commencement date, and the name and contact information for the individual responsible for overseeing the Project. Written notification shall be provided to the Board and an Inspector if any changes occur.	<b>NOTIFICATION – COMMENCEMENT</b>
22.	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.	<b>NOTIFICATION – NON-COMPLIANCE</b>
23.	The Licensee shall submit a current Project schedule to the Board and an Inspector upon request.	<b>SUBMIT CURRENT PROJECT SCHEDULE</b>

## Part C: Security

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| 1. | The Licensee shall post and maintain a security deposit with the Minister in accordance with Schedule B.   | <b>POST SECURITY DEPOSIT</b>         |
| 2. | Upon request of the Board, the Licensee shall submit an updated Closure Cost Estimate using the current version of RECLAIM or another method acceptable to the Board.  | <b>UPDATE CLOSURE COST ESTIMATE</b>  |
| 3. | The amount of the security deposit required by Part C, Condition 1 may be adjusted by the Board:<br>a) Based on an updated Closure Cost Estimate as per Part C, Condition 2; or<br>b) Based on such other information as may become available to the Board.                    | <b>ADJUSTED SECURITY AMOUNT</b>      |
| 4. | If the amount of the security deposit is adjusted by the Board as per Part C, Condition 3, the Licensee shall post the adjusted amount with the Minister within the timeframe set by the Board.  | <b>POST ADJUSTED SECURITY AMOUNT</b> |
| 5. | Unless otherwise approved by the Board, the Licensee may not submit security adjustment requests except with any of the following submissions:<br>a) Closure and Reclamation Plans;<br>b) Closure and Reclamation Completion Reports; or<br>c) Performance Assessment Reports. | <b>SECURITY ADJUSTMENT REQUESTS</b>  |

## Part D: Water Use

1. The Licensee shall only obtain Water for the Project for domestic/potable use from existing Groundwater wells fed by the Prairie Creek Valley Aquifer. The Licensee may withdraw up to 204 m<sup>3</sup> per year of Water from this source.
2. The Licensee shall only obtain Water for the Project for surface drilling from the Water sources identified below:

**WATER SOURCE  
AND MAXIMUM  
VOLUME –  
DOMESTIC/POTABLE  
USE**

**WATER SOURCE –  
SURFACE DRILLING**

<b>Watercourse ID</b>	<b>Watercourse</b>	<b>Latitude</b>	<b>Longitude</b>
0	Harrison Creek	61.56368103	-124.779985
1	Harrison Creek	61.56586449	-124.7771162
2	Harrison Creek	61.56933224	-124.7742261
3	Harrison Creek	61.55907153	-124.7822812
4	Harrison Creek	61.56092126	-124.7815966
5	Prairie Creek	61.54561712	-124.7859508
6	Galena Creek	61.54283416	-124.7913793
7	Prairie Creek	61.55151082	-124.7959824
8	Harrison Creek	61.55374539	-124.7947186
9	Harrison Creek	61.55637613	-124.7906351
10	Harrison Creek	61.55651294	-124.7904736
11	Harrison Creek	61.5589829	-124.7870014
12	Harrison Creek	61.5583356	-124.7884325
13	Unnamed Creek	61.64485628	-124.8740765
14	Unnamed Creek	61.63313856	-124.8654792
15	Unnamed Creek	61.62468903	-124.8581975
16	Unnamed Creek	61.58224584	-124.8932426
17	Unnamed Creek	61.56405911	-124.8921341
18	Unnamed Creek	61.56908024	-124.9068845
19	Unnamed Creek	61.63360477	-124.8799629
20	Unnamed Creek	61.62156136	-124.8846463
21	Unnamed Creek	61.5989844	-124.8886845
22	Unnamed Creek	61.59518053	-124.8903754
23	Harrison Creek	61.57387729	-124.7789497
24	Harrison Creek	61.5604802	-124.7892338
25	Harrison Creek	61.56343746	-124.791061
26	Harrison Creek	61.56197185	-124.7905246
27	Unnamed Creek	61.51545035	-124.8067414
28	Unnamed Creek	61.50143093	-124.8014746
29	Unnamed Creek	61.50386355	-124.8137365
30	Unnamed Creek	61.47364597	-124.8151514
31	Unnamed Creek	61.48277733	-124.8125281
32	Unnamed Creek	61.46950219	-124.8215179
33	Unnamed Creek	61.47134292	-124.8161437
34	Unnamed Creek	61.48627223	-124.8117172
35	Unnamed Creek	61.49020231	-124.8112694
36	Unnamed Creek	61.49286448	-124.8102783

37	Unnamed Creek	61.49609387	-124.8064641
38	Unnamed Creek	61.51319951	-124.8180025
39	Unnamed Creek	61.51748194	-124.8221068
40	Unnamed Creek	61.525098	-124.8193183
41	Unnamed Creek	61.52620216	-124.8058237
42	Galena Creek	61.53849805	-124.8069704
43	Prairie Creek	61.5494667	-124.7930036
44	Harrison Creek	61.55202993	-124.7954289
45	Harrison Creek	61.56025827	-124.7759671

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| 3. | The Licensee may only withdraw a combined total of 11,680 m <sup>3</sup> per year of Water from the sources listed in Part D, Condition 2 for surface drilling.   | <b>MAXIMUM VOLUME<br/>– SURFACE DRILLING</b> |
| 4. | The Licensee shall only withdraw Water using the Water Supply Facilities, unless otherwise temporarily authorized in writing by an Inspector.   | <b>WATER<br/>WITHDRAWAL –<br/>FACILITIES</b> |
| 5. | Prior to obtaining Water from a licensed Water source, the Licensee shall post sign(s) to identify the intake for the Water Supply Facilities. All sign(s) shall be located and maintained to the satisfaction of an Inspector. | <b>POST WATER<br/>INTAKE SIGN(S)</b>         |
| 6. | Each year, prior to September 9 and in advance of any Water use, the Licensee shall pay the Water Use Fee in accordance with the MVLWB’s <i>Water Use Fee Policy</i> .  | <b>WATER USE FEE</b>                         |

## Part E: Waste and Water Management

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| 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. | <b>OBJECTIVE – WASTE AND WATER MANAGEMENT</b> |
| 2. | The Licensee shall minimize erosion by implementing suitable erosion control measures that shall be located and maintained to the satisfaction of an Inspector.  | <b>EROSION CONTROL</b>                        |

### Management Plans and Monitoring Programs

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| 3. | The Licensee shall dispose of all Waste as described in the approved <b>Waste Management Plan</b> .  | <b>WASTE MANAGEMENT PLAN</b>                |
| 4. | The Licensee shall comply with the <b>Effluent Treatment Plan</b> , once approved. The Plan shall outline options to meet the Effluent Quality Criteria requirements from Part E, Condition 16 and 17 for the Water Discharged from SNP Station 3-4. This plan shall be implemented before Discharge of water to Prairie Creek, Harrison Creek, or the Catchment Pond.   | <b>EFFLUENT TREATMENT PLAN</b>              |
| 5. | The Licensee shall comply with the <b>Minewater Treatment Contingency Plan</b> , once approved. The Plan shall be in accordance with the requirements of Schedule C, Condition 1.  | <b>MINEWATER TREATMENT CONTINGENCY PLAN</b> |
| 6. | 90 days prior to depositing Waste Rock, the Licensee shall submit to the Board, for approval, a <b>Geochemical Verification Program</b> . This plan shall detail how the Licensee will verify geochemical test results of Waste Rock, quality of Seepage from the Waste Rock Pile, and quality of new inflow to the mine workings. The Plan shall meet the objectives listed in Part E, Condition 1 and be in accordance with Schedule C, Condition 2. | <b>GEOCHEMICAL VERIFICATION PROGRAM</b>     |

### Operation of Structures and Facilities

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| 7.  | The Tailings Containment Facilities are not to be used in conjunction with the licenced undertaking.  | <b>TAILINGS CONTAINMENT FACILITIES</b>  |
| 8.  | Prior to licenced activities, the Licensee shall maintain the Catchment Pond Discharge control structure to the satisfaction of an Inspector, for the control of Discharge from the Catchment Pond to Harrison Creek. | <b>CATCHMENT POND CONTROL STRUCTURE</b> |
| 9.  | The Licensee shall maintain a Freeboard limit within the Polishing Pond to the satisfaction of an Inspector.  | <b>POLISHING POND – FREEBOARD</b>       |
| 10. | The Licensee shall operate and maintain the Waste Disposal Facilities to prevent structural failure and to the satisfaction of an Inspector.  | <b>PREVENT STRUCTURAL FAILURE</b>       |

### Inspections of Structures and Facilities

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| 11. | Prior to the use of the Polishing Pond and related Water Treatment Facilities in conjunction with these licenced activities,<br>a) A qualified Geotechnical Engineer shall conduct a geotechnical assessment to certify | <b>POLISHING POND GEOTECHNICAL ASSESSMENT</b> |
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- the integrity and capacity of these structures; and
- b) Within 90 days of completing the assessment, submit the **Geotechnical Engineers Assessment 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 Geotechnical Engineer, including rationale for any decisions that deviate from the Geotechnical Engineer’s recommendations; and
  - ii. as-built drawings certified by the Geotechnical Engineer.

12. The Licensee shall submit to the Board for approval a **Tank Farm Geotechnical Assessment** carried out by a qualified Geotechnical Engineer certifying the integrity and capacity of the Tank Farm Facility and associated containment structures before it may be used in conjunction with the licenced undertakings. This assessment shall certify that the capacity of the containment structures associated with the Tank Farm Facility is 10% greater than the volume of the largest container placed therein.

**TANK FARM  
GEOTECHNICAL  
ASSESSMENT**

13. All flood protection work, including but not limited to, armoring and rip-rap placements, shall be inspected annually during the summer by a qualified Geotechnical Engineer, or as otherwise directed by an Inspector or the Board. Records of these inspections shall be made available to the Board or an Inspector upon request.

**ANNUAL  
INSPECTION –  
FLOOD  
PROTECTION WORK**

14. 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.

**DAILY INSPECTIONS  
– DISCHARGE  
LOCATIONS**

**Discharge and Disposal Locations and Rates**

15. All Water from the 870 metre portal shall be Discharged to the Polishing Pond.

**870 METRE PORTAL**

**Effluent Quality Criteria**

16. The Licensee shall ensure that all Water measured at Surveillance Network Program station 3-4 during Site Operations has a pH value between 6.0 and 9.5, no visible sheen of oil and grease or floating solids, and meets the following Effluent Quality Criteria (EQC):

**EFFLUENT QUALITY CRITERIA – SITE OPERATIONS**

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of any Grab Sample (mg/L)
Total Ammonia	5.0	
Total Arsenic	0.5	1.0
Total Cadmium	0.005	0.01
Total Chromium	0.15	0.3
Total Copper	0.1	0.2
Total Lead	0.15	0.3
Total Mercury	0.02	0.04
Total Nickel	0.2	0.4
Total Dissolved Zinc	0.4	0.8
Total Suspended Solids	15.0	30.0
Extractable Petroleum Hydrocarbons Total Petroleum Hydrocarbons	5.0	10.0

17. In addition to the Effluent Quality Criteria (EQC) required through Part E, Condition 16, the Licensee shall ensure that all Water measured at Surveillance Network Program station 3-4 during Decline Operations meets the following (EQC):

**EFFLUENT QUALITY CRITERIA – DECLINE OPERATIONS**

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of any Grab Sample (mg/L)
Total Ammonia	5.0	
Extractable Petroleum Hydrocarbons Total Petroleum Hydrocarbons	5.0	10.0

18. The Licensee shall ensure that Discharge to Prairie Creek shall not be acutely toxic to aquatic life as determined at SNP station 3-4 by the test methods referenced in Part B of SNP.
19. All decant Water from the Tank Farm Facility berm Discharged by the Licensee to any Waters shall have no visible sheen of oil and grease or floating solids, and have a Total Petroleum Hydrocarbon Maximum Average Concentration of 5.0 mg/L and a Maximum Grab Sample Concentration of 10.0 mg/L.
20. The Licensee shall notify an Inspector at least 10 days prior to decanting the Tank Farm Facility.

**EFFLUENT QUALITY – TOXICITY**

**TANK FARM DECANT WATER – QUALITY CRITERIA**

**TANK FARM DECANT – INSPECTOR NOTIFICATION**

21. If Water quality data from any sample collected at SNP station 3-4 exceeds the EQC specified in Part E, Condition 16 or 17, or is determined to be acutely toxic as per Part E, Condition 18, the Licensee shall:
- a) Cease the Discharge;
  - b) Notify the Board and an Inspector within 24 hours;
  - c) Report the spill immediately in accordance with the **Spill Contingency Plan** referred to in Part F, Condition 2;
  - d) Comply with the approved **Minewater Treatment Contingency Plan** referred to in Part E, Condition 5; and
  - e) Submit a detailed report on the occurrence, including a summary of corrective actions taken, to the Board and an Inspector within 30 days.



## Part F: Spill Contingency Planning

- |   |  |
|---|--|
| 1. The Licensee shall ensure that Unauthorized Discharges associated with the Project do not enter any Waters.  | <b>OBJECTIVE –<br/>PREVENT WASTE<br/>INTO WATER</b>            |
| 2. The Licensee shall comply with the <b>Spill Contingency Plan</b> , once approved.  | <b>SPILL<br/>CONTINGENCY<br/>PLAN</b>                          |
| 3. During the period of this Licence, if a spill or an Unauthorized Discharge occurs or is foreseeable, the Licensee shall:<br><br>a) Implement the approved Spill Contingency Plan referred to in Part F, Condition 2;<br>b) Report it immediately using the NU-NT Spill Report Form by one of the following methods: <ul style="list-style-type: none"><li>• Telephone: (867) 920-8130</li><li>• Fax: (867) 873-6924</li><li>• E-mail: <a href="mailto:spills@gov.nt.ca">spills@gov.nt.ca</a></li><li>• Online: Spill Reporting and Tracking Database</li></ul> c) Within 24 hours, notify the Board and an Inspector; and<br>d) Within 30 days of initially reporting the incident, submit a detailed report to the Board and an Inspector, including descriptions of causes, response actions, and any changes to procedures to prevent similar occurrences in the future. Written notification shall be provided to the Board and an Inspector if any changes occur. | <b>REPORT SPILLS</b>   |
| 4. The Licensee shall ensure that spill prevention infrastructure and spill response equipment is in place prior to commencement of the Project.  | <b>SPILL PREVENTION<br/>AND RESPONSE<br/>EQUIPMENT</b>         |
| 5. The Licensee shall restore all areas affected by spills and Unauthorized Discharges to the satisfaction of an Inspector.   | <b>CLEAN UP SPILLS</b>   |
| 6. 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.  | <b>MATERIAL<br/>STORAGE –<br/>ORDINARY HIGH<br/>WATER MARK</b> |

## Part G: Closure and Reclamation

- |     |  |  |
|-----|--|--|
| 1.  | Within one year following the effective date of this Licence, the Licensee shall submit to the Board, for approval, a <b>Closure and Reclamation Plan</b> . The Plan shall be in accordance with the requirements of Schedule D, Condition 1.  | CLOSURE AND RECLAMATION PLAN                                 |
| 2.  | Every three years following the previous approval, or as directed by the Board, the Licensee shall submit to the Board, for approval, a revised Closure and Reclamation Plan.  | CLOSURE AND RECLAMATION PLAN – REVISED                       |
| 3.  | One year prior to the expiration of this Licence, or one year prior to the end of operations, whichever occurs first, the Licensee shall submit to the Board, for approval, a final Closure and Reclamation Plan.  | CLOSURE AND RECLAMATION PLAN – FINAL                         |
| 4.  | One year prior to Progressive Reclamation of any specific component of the Project, the Licensee shall submit to the Board, for approval, a Component-Specific Closure and Reclamation Plan. The Licensee shall not commence activities described in the Plan prior to Board approval.   | CLOSURE AND RECLAMATION PLAN – COMPONENT-SPECIFIC            |
| 5.  | The Licensee shall endeavor to carry out approved Progressive Reclamation as soon as is reasonably practicable.  | PROGRESSIVE RECLAMATION                                      |
| 6.  | The Licensee shall not conduct Progressive Reclamation except as approved by the Board.  | PROGRESSIVE RECLAMATION – CARRY OUT AS APPROVED              |
| 7.  | 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 individual responsible for overseeing the Progressive Reclamation.  | PROGRESSIVE RECLAMATION – NOTIFICATION                       |
| 8.  | Within 60 days of completing Closure and Reclamation of any specific component of the Project, the Licensee shall submit to the Board a <b>Closure and Reclamation Completion Report</b> . The Report shall be in accordance with the MVLWB/AANDC <i>Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories</i> .    | CLOSURE AND RECLAMATION COMPLETION REPORT                    |
| 9.  | Within 60 days of completing Closure and Reclamation of any specific component of the Project, the Licensee shall submit to the Board, for approval, a <b>Performance Assessment Report</b> . The Report shall be in accordance with the MVLWB/AANDC <i>Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories</i> . | PERFORMANCE ASSESSMENT REPORT – COMPONENT-SPECIFIC           |
| 10. | Within 90 days of completing Closure and Reclamation of the Project, or as otherwise directed by the Board, the Licensee shall submit to the Board for approval, a <b>Post-Closure and Reclamation Monitoring and Maintenance Plan</b> . The Plan shall be in accordance with the requirements of Schedule D, Condition 1.   | POST-CLOSURE AND RECLAMATION MONITORING AND MAINTENANCE PLAN |

## Schedule A: Annual Water Licence Report

1. The **Annual Water Licence Report** referred to in Part B 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) The monthly and annual quantities in cubic metres of fresh Water obtained from all sources, as required in Part D of this Licence;
  - d) A summary of the calibration and status of the meters and devices referred to in Part B of this Licence;
  - e) A summary of engagement activities conducted in accordance with the approved **Engagement Plan**, referred to in Part B of this Licence;
  - f) A summary of how Traditional Knowledge influenced decision making;
  - g) A summary of major maintenance activities conducted in accordance with this Licence;
  - h) The monthly and annual quantities, in cubic metres, of each and all Waste Discharges, and deposits to Waste Disposal Facilities, identified by location, including all Minewater and Tailings Discharge;
  - i) A summary of activities conducted in accordance with the approved **Effluent Treatment Plan**, required in Part E of this Licence, including:
    - i. Any treatment improvements made during the year;
    - ii. The efficacy of treatment; and
    - iii. Any planned treatment improvements for the coming year;
  - j) A summary of activities conducted in accordance with the approved **Geochemical Verification Program**, required in Part E of this Licence, including:
    - i. A summary and interpretation of results from sampling performed under the Geochemical Verification Program; and
    - ii. Any actions carried out as per the contingency plan in the event of increasing trends in Metal Leaching or acid generation potential.
  - k) A summary of activities conducted in accordance with the approved **Spill Contingency Plan**, required in Part F 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 of this Licence; and
    - ii. An outline of any spill training carried out;
  - l) A summary of activities conducted in accordance with the **Closure and Reclamation Plan**, required in Part G of this Licence, including:
    - i. Details of any Remediation and/or Progressive Reclamation undertaken;
    - ii. A discussion on whether planning and implementation remains on schedule, and a summary of any new scheduling setbacks;

- iii. A summary of Reclamation Research completed;
  - iv. A summary of engagement conducted regarding Closure and Reclamation;
  - v. A list of any factors that would increase or decrease the Closure Cost Estimate the next time the Estimate is updated;
- m) Tabular summaries of all data and information generated under the SNP annexed to this Licence and graphical summaries of parameters with EQC referred to in Part E at the points of compliance (SNP Stations 3-4), in Excel format;
  - n) A list of any non-compliance(s) with the conditions of this Licence or any directive from the Board pursuant to the conditions of this Licence;
  - o) A summary of actions taken to address concerns, non-conformances, or deficiencies in any reports filed by an Inspector;
  - p) A table detailing all commitments related to Water use and the deposit of Waste made during the Environmental Assessment, with descriptions of how each commitment is being or has been met; and
  - q) Any other details requested by the Board by November 1 of the year being reported.

## Schedule B: Security

1. Within 90 days of the effective date of this Licence, pursuant to section 35 of the Act and section 11 of the Regulations, the Licensee shall post and maintain a security deposit in accordance with Part C, Condition 1 of this Licence in the amount of \$210, 648.00.

## Schedule C: Water and Waste Management

1. The **Minewater Treatment Contingency Plan** referred to in Part E of this Licence shall include, but not be limited to, the following information:
  - a) contingencies for the treatment of Minewater in the event it does not meet Discharge criteria;
  - b) a description of the risk of the Minewater exceeding the Polishing Pond Freeboard limit;
  - c) the process and facilities for the collection and management of surface Runoff generated on site;
  - d) details of monitoring, including a rationale for each component of the Water management system;
  - e) a description of the Response Framework that will be implemented by the Licensee to link the results of monitoring to those corrective actions necessary to ensure that the objectives listed in Part E, Condition 1 are met including:

- a. definitions, with rationale for Action Levels applicable to the performance of the Polishing Pond with respect to geotechnical stability, thermal characteristics, Seepage quality and quantity, and run off; and
  - b. for each Action Level, a description of how exceedances of the Action Level will be assessed and what actions may be taken if the Action Level is exceeded.
2. The **Geochemical Verification Program**, referred to in Part E of this Licence, shall meet the objectives listed in Part E, Condition 6 and include, but not be limited to:
- a) Criteria for defining PAG, non-PAG and Metal Leaching materials with supporting rationale;
  - b) Criteria for defining high, moderate, and low risk Waste Rock with supporting rationale
  - c) Sampling and testing methods for the **Geochemical Verification Program** (including Waste Rock, Waste Rock Pile Seepage, and any new inflow to the mine workings) with supporting rationale;
  - d) Sampling locations and collection methodology for follow-up verification testing with supporting rationale;
  - e) Timing and frequency of verification sampling;
  - f) Quality assurance and quality control measures; and
  - g) A contingency plan in the event of increasing trends in Metal Leaching or acid generation potential.

## Schedule D: Conditions Applying to Closure and Reclamation

1. The **Closure and Reclamation Plan** referred to in Part G of this Licence shall include, but not be limited to the following information:
- a) A plain language summary of the Plan;
  - b) A description of the overall goals for Closure and Reclamation of the Project, including expected future land use;
  - c) A description of the Closure and Reclamation planning team;
  - d) 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 of this Licence for the Project;
  - e) A list of any other regulatory instruments required for Closure and Reclamation of the Project;
  - f) 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. any physical or chemical assessments of soil, Water, and permafrost; and
    - vi. traditional uses;

- g) 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 material locations, site facilities, hydrological features, and elevation contours; and
  - v. photographs;
  
- h) A description of each Project component, including, but not limited to:
  - i. the Water intake facilities;
  - ii. the Water treatment and Waste disposal sites and facilities;
  - iii. the petroleum and chemical storage areas;
  - iv. the natural Runoff Waters from the development site;
  - v. the restoration of natural drainage and the restoration of stream banks at the operation site(s);
  - vi. the potential for Groundwater contamination;
  - vii. any facilities or areas which may be affected by development such that potential pollution problems exist;
  - viii. the Waste Rock storage areas;
  - ix. areas affected by spills or Unauthorized Discharges; and
  - x. other areas affected by Project activities;
  
- i) For each Project component identified in Condition (h) above, 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;
  - 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. uncertainties and contingencies;
  - viii. climate change considerations; and
  - ix. Closure and Reclamation Research plans;
  
- j) A description of any planned Progressive Reclamation;
  
- k) 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. contingencies; and
  - v. an implementation schedule;
  
- l) An implementation schedule that includes Progressive Reclamation and final Closure and Reclamation activities; and
  
- m) A Closure Cost Estimate.

**Annex A: Surveillance Network Program**  
**Annexed to Type B Water Licence MV2019L2-0006**  
**Canadian Zinc Corporation. – Mineral Exploration**

**Table of Contents**

Part A: Reporting Requirements

Part B: Site Descriptions and Monitoring Requirements

**Part A: Reporting Requirements**

1. The effective date of this Surveillance Network Program (SNP) is September 9, 2019.
2. Beginning on October 1, 2019, and for every month thereafter, the Licensee shall submit to the Board and an Inspector, a **Surveillance Network Program Report**, which shall include, but not be limited to the following:
  - a) Electronic and tabular summaries of all data and information generated under the SNP for the month being reported, including rationale for SNP stations where samples were not collected and results and interpretation of quality assurance/quality control procedures;
  - b) Graphical summaries and interpretation of the analytical results from the SNP samples collected at the point of compliance (SNP station 3-4) compared to the EQC under Part E of this Licence, for the previous 2 consecutive years;
  - c) An explanation of any actions taken in response to any exceedances of the Effluent Quality Criteria;
  - d) Information regarding the calibration and status of the meters and devices referred to in Part B of this Licence;
  - e) The coordinates of all SNP stations which were established within the month being reported, including an updated map identifying the locations of all the SNP stations; and
    - i. Weekly quantity of Water in cubic metres withdrawn from the Water Supply Facilities;
    - ii. Weekly quantity of Waste in cubic metres Discharged;
    - iii. Observations from inspections of the Waste storage areas as required through the Waste Management Plan referred to in Part E, Condition 3 of this Licence.
  - f) A tabular summary of cumulative Water use.
3. More frequent sample collection may be required at the request of an Inspector.
4. All sampling, sample preservation, and analyses shall be conducted in accordance with methods prescribed in the edition of American Public Health Association's (APHA) *Standard Methods for the Examination of Water and Wastewater* current at the time of analysis, or by other such methods approved by an Analyst.
5. All analyses shall be performed in a laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA) for the specific analyses to be performed or as approved by an Analyst.
6. Prior to the collection of SNP samples, the Licensee shall submit to the Board and an Analyst, a **Quality Assurance and Quality Control Plan**, which shall include a list of techniques that will be used to collect and analyze samples collected under the SNP, for the purposes of quality assurance and quality control. An Analyst shall provide a recommendation to the Board.

7. The Licensee shall operate in accordance with the **Quality Assurance and Quality Control Plan**, once approved.
8. If the **Quality Assurance and Quality Control Plan** is not approved by the Analyst, the Licensee shall revise the Plan according to the Analyst’s direction and re-submit it to an Analyst for a decision.

**Part B: Site Descriptions and Monitoring Requirements**

1. The location of sampling sites is subject to approval of an Inspector.
2. The sampling station locations and monitoring requirements are as follows:

**SNP station 1-1**

<b>Description</b>	The daily Water Use for domestic/potable purposes. Water Use shall be measured and recorded in m <sup>3</sup> .
<b>Location</b>	CZN to provide
<b>Sampling Frequency</b>	Daily when pumping is in progress
<b>Sampling parameters</b>	Flow – Meter, Volume (m <sup>3</sup> )
<b>Rationale</b>	Compliance monitoring site, in accordance with Water Use limits identified in Part D, Condition 1 of this Licence. To monitor the quantity of daily Water use.
<b>Status</b>	Active

**SNP station 3-1**

<b>Description</b>	Freshwater pump house wet well
<b>Location</b>	CZN to provide
<b>Sampling Frequency</b>	Every 6 months during winter and summer
<b>Sampling Parameters</b>	Standard <sup>b</sup> , Total Metals <sup>c</sup>
<b>Status</b>	Active

Note: Footnotes are defined after the final table in Part B.



SNP station 3-3

<b>Description</b>	Wastewater Discharge from Pilot Plant
<b>Location</b>	CZN to provide
<b>Sampling Frequency</b>	Weekly during Decline Operations <sup>2</sup> , and twice during open Water after operations have ceased
<b>Sampling Parameters</b>	Total Metals <sup>c</sup> , Standard <sup>b</sup>
<b>Status</b>	Inactive

SNP station 3-4

<b>Description</b>	Polishing Pond Discharge				
<b>Location</b>	CZN to provide				
<b>Sampling Frequency</b>	Continuous	Weekly during Site Operations <sup>4</sup> , and twice during open Water after operations have ceased	Weekly during Decline Operations <sup>2</sup> and twice during open Water after operations have ceased	Weekly during Decline Operations <sup>2</sup> and one month after cessation	Twice per year during open Water
<b>Sampling Parameters</b>	Volume (Cubic Metres)	EQC outlined in Part E, Condition 16, Total Metals <sup>c</sup> , Sulphate	EQC outlined in Part E, Condition 17	Nutrients <sup>a</sup> , Extractable Petroleum Hydrocarbons	Toxicity <sup>d</sup>
<b>Rationale</b>	Compliance Monitoring				
<b>Status</b>	Active				

SNP station 3-5

<b>Description</b>	Catchment Pond Discharge	
<b>Location</b>	CZN to provide	
<b>Sampling Frequency</b>	Weekly during Decline Operations <sup>a</sup> , monthly during Site Operations <sup>b</sup> and twice during open Water after operations have ceased	Weekly during Decline Operations <sup>a</sup> and one month after cessation
<b>Sampling Parameters</b>	Total Metals <sup>c</sup> , Standard <sup>b</sup> , Sulphate	Nutrients <sup>a</sup> , Extractable Petroleum Hydrocarbons, Benzene, Toluene, Ethylbenzene, and Xylene
<b>Status</b>	Active	

SNP station 3-6

<b>Description</b>	Final Discharge from Harrison Creek to Prairie Creek – confluence at culvert	
<b>Location</b>	CZN to provide	
<b>Sampling Frequency</b>	Weekly during Decline Operations <sup>a</sup> , monthly during Site Operations <sup>b</sup> and twice during open Water after operations have ceased	Weekly during Decline Operations <sup>a</sup> and one month after cessation
<b>Sampling Parameters</b>	Total Metals <sup>c</sup> , Standard <sup>b</sup> , Sulphate	Nutrients <sup>a</sup> , Extractable Petroleum Hydrocarbons, Benzene, Toluene, Ethylbenzene, and Xylene
<b>Status</b>	Active	

SNP station 3-7

<b>Description</b>	870 metre portal final mine Water Discharge	
<b>Location</b>	CZN to provide	
<b>Sampling Frequency</b>	Weekly during Decline Operations <sup>2</sup> , monthly during Site Operations <sup>1</sup> and twice during open Water after operations have ceased	Weekly during Decline Operations <sup>2</sup> and one month after cessation
<b>Sampling Parameters</b>	Total Metals <sup>c</sup> , Standard <sup>b</sup> , Sulphate	Nutrients <sup>a</sup> , Extractable Petroleum Hydrocarbons
<b>Status</b>	Active	

SNP station 3-8

<b>Description</b>	Reagent storage facility catchment basin	
<b>Location</b>	CZN to provide	
<b>Sampling Frequency</b>	Twice per year during open Water	
<b>Sampling Parameters</b>	Total Metals <sup>c</sup> , Standard <sup>b</sup> ,	
<b>Status</b>	Active	

SNP station 3-9

<b>Description</b>	Harrison Creek upstream from the reagent storage facility	
<b>Location</b>	CZN to provide	
<b>Sampling Frequency</b>	Monthly during Decline Operations <sup>2</sup> , bi-monthly <sup>3</sup> during Site Operations <sup>1</sup> and twice during open Water after operations have ceased.	
<b>Sampling Parameters</b>	Total Metals <sup>c</sup> , Standard <sup>b</sup> ,	
<b>Status</b>	Active	

SNP station 3-10

<b>Description</b>	Prairie Creek upstream from the Airstrip
<b>Location</b>	CZN to provide
<b>Sampling Frequency</b>	Monthly during Decline Operations <sup>2</sup> , bi-monthly <sup>3</sup> during Site Operations <sup>4</sup> and twice during open Water after operations have ceased.
<b>Sampling Parameters</b>	Total Metals <sup>c</sup> , Standard <sup>b</sup> ,
<b>Rationale</b>	Background monitoring
<b>Status</b>	Active

SNP station 3-11a

<b>Description</b>	Downstream from the confluence of Prairie Creek and Harrison Creek
<b>Location</b>	CZN to provide
<b>Sampling Frequency</b>	Monthly during Decline Operations <sup>2</sup> , bi-monthly <sup>3</sup> during Site Operations <sup>4</sup> and twice during open Water after operations have ceased.
<b>Sampling Parameters</b>	Total Metals <sup>c</sup> , Standard <sup>b</sup>
<b>Rationale</b>	Monitoring
<b>Status</b>	Active

SNP station 3-11b

<b>Description</b>	Approximately 100 m downstream from the confluence of Prairie Creek and Harrison Creek (edge of the effluent mixing zone for Licence MV2008L2-0002)
<b>Location</b>	CZN to provide
<b>Sampling Frequency</b>	Monthly during Decline Operations <sup>2</sup> , bi-monthly <sup>3</sup> during Site Operations <sup>4</sup> and twice during open Water after operations have ceased.
<b>Sampling Parameters</b>	Total Metals <sup>c</sup> , Standard <sup>b</sup> , Hardness, Dissolved Organic Carbon (DOC), Dissolved Zinc
<b>Rationale</b>	Monitoring
<b>Status</b>	Active

**SNP station 3-12**

<b>Description</b>	Tank Farm dewatering Discharge
<b>Location</b>	Tank Farm
<b>Sampling Frequency</b>	Whenever dewatering of the tank farm occurs.
<b>Sampling Parameters</b>	Extractable <b>Petroleum</b> Hydrocarbons, <b>Benzene, Toluene, Ethyl benzene, and Xylene</b>
<b>Rationale</b>	Monitoring
<b>Status</b>	Active

**Notes:**

- a. Total Ammonia (NH<sub>3</sub> + NH<sub>4</sub><sup>+</sup> - N), Total Nitrate + Nitrite (NO<sub>3</sub> + NO<sub>2</sub>),
- b. pH, Temperature (T), and Conductivity (Cond). These parameters should be measured both in the field as well as in the laboratory.
- c. **Full = Total elemental analysis by ICP-Metal Scan of:** ICP-MS 24 element scan: includes all elements in Total Metals plus Antimony (Sb), Arsenic (As), Barium (Ba), Bismuth (Bi), Cesium (Cs), Chromium (Cr), Lithium (Li), Thallium (Tl), Titanium (Ti), Uranium (U), & Vanadium (V).
- d. Toxicity shall be assessed at an accredited bioassay laboratory for the following analyses:
  - i. Acute toxicity – fish using Environment Canada. 2007. Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout. Environmental Protection Series, Report EPS 1/RM/13. Method Development and Application Section, Environmental Technology Centre, Ottawa, ON, Canada.
  - ii. Acute toxicity – invertebrates using Environment Canada. 2000. Biological Test Method for Determining Acute Lethality of Effluents to Daphnia magna. Environmental Protection Series, Report EPS 1/RM/14. Method Development and Application Section, Environmental Technology Centre, Ottawa, ON, Canada.

<sup>1</sup> Site operations refers to the time period when personnel are on site.

<sup>2</sup> Decline operations refers to the time period when personnel are conducting exploration work in the underground.

<sup>3</sup> Bimonthly refers to every two months.

**Annex B: Concordance Table of Items Requiring Submission  
Annexed to Water Licence MV2019L2-0006**

**Canadian Zinc Corporation. – Mineral Exploration**

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

**Table 1: Water Licence Submission Requirements**

<b>Part of Licence</b>	<b>Item</b>	<b>Date</b>
B	19 – Annual Water Licence Report	Beginning March 31, 2020 and no later than every March 31 thereafter
B	20 – Engagement Plan	Comply once approved
C	1 – Post Security Deposit	Within 90 days of the effective date of the Licence
D	4 – Water Use Fee	Prior to September 9 and in advance of any Water use
E	3 – Waste MGMT Plan	Within 90 days of the effective date of the Licence
E	4 – Effluent Treatment Plan	Within 90 days of the effective date of the Licence
E	5 - Minewater Treatment Contingency Plan	Within 90 days of the effective date of the Licence
E	6 – Geochemical Verification Program	90 days prior to depositing Waste Rock
E	11 - Geotechnical Engineers Assessment Report	Within 90 days of completing assessment
E	12 – Tank Farm Geotechnical Assessment	Upon completion of assessment
E	13 – Flood Protection Work Inspection Report	Annually upon completion of inspection
F	2 – Spill Contingency Plan	Within 90 days of the effective date of the Licence
G	1 – Closure and Reclamation Plan	Within one year following effective date of Licence
G	2 – Revised CRP	Every three years following previous approval
G	3 - Final CRP	One year prior to the expiration of this Licence, or one year prior to the end of operations, whichever occurs first
G	4 – Component Specific CRP	One year prior to Progressive Reclamation of any specific component of the Project
G	8 – Completion Report	Within 60 days of completing Closure and Reclamation of any specific component of the Project
G	9 – Performance Assessment Report	Within 60 days of completing Closure and Reclamation of any specific component of the Project
G	10 - Post-Closure and Reclamation Monitoring and Maintenance Plan	Within 90 days of completing Closure and Reclamation of the Project, or as otherwise directed by the Board
Annex A	2 – SNP Reports	Monthly beginning Oct 1, 2019
Annex A	6 – QA/QC Plan	Prior to collection of SNP Samples

**Annex C: Table of Revision History**  
**Annexed to Water Licence MV2019L2-0006**  
**Canadian Zinc Corporation. – Mineral Exploration**

**Table 1: Updates and changes that have been made to the Water Licence since issuance**

<b>Date</b>	<b>Location of change</b>	<b>Description of change</b>
May 28, 2020	-Schedule A, Condition 1, item j)	-Added reporting on the Geochemical Verification Program to the Annual Water Licence Report requirements.
August 27, 2020	-Part A, Condition 1	-Updated Scope to include surface drilling at Prairie Creek Mine.
	-Definitions	-Acid Rock Drainage deleted (not used in Licence).
		-Component-Specific Closure and Reclamation Plan (CRP) added.
		-Dewatering deleted (not used in Licence).
		-Freeboard updated based on Board’s Standard Water Licence Conditions and Schedules.
		-Groundwater updated based on Board’s Standard Water Licence Conditions and Schedules.
		-Polishing Pond updated to remove reference to the “Prairie Creek Mine: Mine water Management Site Plan” as this document is not available.
		-Response Plan deleted (not used in Licence).
		-Sewage Disposal Facilities deleted (not used in Licence).
		-Solid Waste Disposal Facilities deleted (not used in Licence).
		-Sump deleted (not used in Licence).
		-Surveillance Network Program (SNP) updated based on Board’s Standard Water Licence Conditions and Schedules.
		-Unauthorized Discharge updated based on Board’s Standard Water Licence Conditions and Schedules.
		-Waste updated based on Board’s Standard Water Licence Conditions and Schedules.
		-Waste Rock Storage Facilities deleted (not used in Licence).
		-Wastewater Treatment Facilities deleted (not used in Licence).
		-Water updated based on Board’s Standard Water Licence Conditions and Schedules.
		-Watercourse updated based on Board’s Standard Water Licence Conditions and Schedules.
	-Water Use updated based on the Board’s Standard Water Licence Conditions and Schedules.	
	-Part B, Condition 14	-Condition name updated based on the Board’s Standard Water Licence Conditions and Schedules.
-Part B, Condition 16	-Condition name updated based on the Board’s Standard Water Licence Conditions and Schedules.	
-Part C, Condition 1	-Reference to Schedule updated.	
-Part D, Condition 1	-Updated to specify that the requirements are specific to domestic/potable Water Use from Groundwater wells fed by the Prairie Creek Valley Aquifer.	

-Part D, Condition 2	-Added to specify Water sources that can be used by CZN for surface drilling.
-Part D, Condition 3	-Added to specify the maximum yearly volume of Water that can be used by CZN for surface drilling from the sources identified in Part D, Condition 2.
-Part E, Condition 12	-Name of assessment in condition expanded, capitalized, and bolded for clarity.
-Part E, Condition 17	-Reference 'Harrison to Prairie Creek' deleted from condition name as SNP station 3-4 is located at the Polishing Pond Discharge.
-Part E, Condition 20	-Condition name updated based on the Board's Standard Water Licence Conditions and Schedules.
-Part E, Condition 20, item d)	-Reference to Condition updated.
-Schedule A, item c)	-Reference to Part of Licence updated.
-Schedule C, item 1 e)	-Reference to Condition updated.
-Schedule C, item 2 e)	-'Sampling' deleted as requirement (repetitive).
-Annex A, Part A, item 2 e) iii.	-Updated to reference observations from inspection of the Waste storage areas as required through the Waste Management Plan.
-Annex A, Part B, SNP station 1-1	-Description updated based on update to Part D, condition 1 as per CZN's Amendment Request. Rational updated based on Part D, condition 1.
-Annex A, Part B, SNP station 3-3	Sampling Frequency updated based on July 21, 2020 SNP Request.
-Annex A, Part B, SNP station 3-4	Based on July 21, 2020 SNP Request Sampling Frequency updated and Benzene, Toluene, Ethyl-benzene, and Xylene removed from Sampling Parameters. Reference to EQC updated, Footnote changed from <sup>2</sup> to <sup>d</sup> for consistency.
-Annex A, Part B, SNP station 3-5	Sampling Frequency updated based on July 21, 2020 SNP Request.
-Annex A, Part B, SNP station 3-6	Sampling Frequency updated based on July 21, 2020 SNP Request.
-Annex A, Part B, SNP station 3-7	Based on July 21, 2020 SNP Request Sampling Frequency updated, Benzene, Toluene, Ethyl-benzene, and Xylene removed from Sampling Parameters.
-Annex A, Part B, SNP station 3-9	Sampling Frequency updated based on July 21, 2020 SNP Request.
-Annex A, Part B, SNP station 3-10	Sampling Frequency updated based on July 21, 2020 SNP Request.
-Annex A, Part B, SNP station 3-11	Sampling Frequency updated based on July 21, 2020 SNP Request.
-Annex B, Table 1, C 1	Item name updated based on Condition name.