

## EA1415-01 Prairie Creek All-season Road

### Working Commitments Table – September 1, 2016

This Commitments Table is the working compilation of commitments made by CanZinc since the submission of the Developer's Assessment Report (DAR) for the Prairie Creek All-season Road on April 23, 2015. The table was prepared by the Review Board staff. Additional mitigations can be found in the Developers Assessment Report and Addendums on the [public registry](#).

Red text = Responses

Green text = CanZinc most recently updated response or wording amendment

Date	Process Phase	Reference PR#	Topic	Description of Inquiry, Commitment or Response
April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Species at Risk – Yellow Rails Response to PC IR #32	<p>CanZinc commits to maintaining natural drainage patterns throughout the boreal forest zone, by careful placement of culverts and regularly inspecting drainage measures to identify areas that are or might unexpectedly pond water.</p> <p>Follow Best Management Practice (Environment Canada, 2009)<sup>1</sup></p> <ul style="list-style-type: none"> <li>♣ Avoid activities in areas while birds are present</li> <li>♣ Prevent loss and alteration of wetlands</li> <li>♣ Maintain year-round 100 m no-activity buffer from potential habitat</li> <li>♣ Avoid nighttime activities (including light and noise) near breeding wetlands</li> <li>♣ No mowing of potential habitats when dry</li> </ul>

<sup>1</sup> Environment Canada. 2009. Draft Petroleum Industry Activity Guidelines for Wildlife Species at Risk in the Prairie and Northern Region. Canadian Wildlife Service, Environment Canada, Prairie and Northern Region, Edmonton, Alberta. 64 pp.

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April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Species at Risk – Harlequin Ducks Response to PC IR #32	<p>Sundog channel creek re-alignment and armouring in the late fall when there is no stream flow.</p> <p>Conduct any in-stream bridge construction work and the Sundog re-alignment/armouring outside Harlequin duck occurrence (late April to mid-Sept) and or when no flow. Should in-stream work be required during this time, the Environmental Monitor will first survey the for the presence of Harlequin ducks within 500 m of the activity (both upstream and downstream) and in-stream work will cease if a Harlequin duck is present.</p>
April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Invasive Species - Response to PC IR #47	<p>The Invasive Species Management Framework: is meant to be adaptive and evolve as the project evolves and invasive species are or are not detected. The four key principles are prevention, detection, control and restoration.</p>
April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Invasive Species - Response to PC IR #47	<p>One type of truck will operate on the highway and another on the Highway. Trailers will be switched out at the LTF about 1 km from the junction of the Liard Hwy. Only the trailers complete the whole journey from the mine to Fort Nelson and back.</p>
April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Invasive Species - Response to PC IR #47	<p>Invasive Species Adaptive management options to prevent the introduction and spread of invasive species include:</p> <p>Utilization of a wheel-wash station in summer - the station will be located at the LTF. Trucks headed for the mine will pass through the wheel-wash and be cleaned of any debris before departure.</p>

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April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Invasive Species - Response to PC IR #47	Road use monitoring - to restrict access and use of the road by unauthorized persons. Off-road vehicles have a high potential of introducing invasive species; road use monitoring is proposed at about km 140 on the all season access road.
April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Invasive Species - Response to PC IR #47	The use of natural encroachment as a re-vegetation strategy in disturbed areas; this avoids the introduction of invasive species sometimes found in seed mixes.
April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Invasive Species - Response to PC IR #47	Detection, Control and Restoration measures as described in Invasive Species Management Framework
May 10, 2016	Information Request (Round 1)	<a href="#">PR#192</a>	Borrow - Response to PC IR #12	During detailed design, will sample borrow sources and this will be done under the guidance of a professional ARD geochemist. Any borrow with a positive identification of ARD/ML potential will not be used. Any borrow with marginal ARD/ML potential will either not be used, or used based on mitigation procedures defined by a professional ARD/ML geochemist. Sampling requirements will be determined under the guidance of a professional ARD/ML geochemist at the time of detailed investigation and design prior to construction.

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May 10, 2016	Information Request (Round 1)	<a href="#">PR#192</a>	Borrow - Response to PC IR #12	Where permafrost is encountered in borrows, again either the borrow will not be used, or if it is, borrow pit development, monitoring and ultimate reclamation will follow guidance provided by a professional geotechnical engineer to avoid significant impacts.
May 10, 2016	Information Request (Round 1)	<a href="#">PR#192</a>	Road Operations - Response to PC IR #16	CanZinc to revise the Road Operations Plan to abide by and enforce GNWT commercial truck loading restrictions, and adequately justify any variance from these allowances with respect to truck and trailer configurations. We propose to make these revisions at a later date prior to operations.
May 10, 2016	Information Request (Round 1)	<a href="#">PR#192</a>	Road Operations	CanZinc will include how it will monitor and enforce vehicle speed in the Road Operations Plan.
April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Caribou – Response to PC IR #32	Blasting is prohibited if caribou are observed within 1 km of blast site until animal moves out of the area.
April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Caribou– Response to PC IR #32	If caribou are reported on the road or within 500 m of the Project footprint (this 500 m buffer extends to the mountain range due west of the Prairie Creek Mine site where caribou tracks and cratering were reported by Parks Canada), traffic or activity will 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 from the road or 5 minutes after last visual. Once traffic resumes, speed reduced to half the posted speed limit, 30 km/hr, within 1 km of the sighting

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April 28, 2016	Information Request (Round 1)	<a href="#">PR#186</a>	Caribou– Response to PC IR #32	If caribou are reported beyond 500 m of the Project footprint, traffic speeds are to be reduced to half the posted speed limit, 30 km/hr, within 1 km of the sighting or as soon as the animal is sighted
April 28, 2016	Information Requests (Round 1)	<a href="#">PR#186</a>	Wildlife – Grizzly Bears – Response to GNWT IR #8	Grizzly Bears were assessed as a surrogate for Black Bears in the DAR. Mitigation, including pre-clearing denning surveys identified for Grizzly Bears also extends to Black Bears. Environmental Monitors will survey for wildlife dens in favourable denning habitat (e.g., borrow sources) prior to clearing.
June 13, 2016	Technical Session, YK	<a href="#">PR#246</a>	Monitoring – Traffic	CanZinc will monitor and record non-mining traffic activity on the all-season road, including through the establishment of a checkpoint, and report this information annually.
June 13, 2016	Technical Session, YK	<a href="#">PR#246</a>	Monitoring – Traffic	CanZinc will have local environmental monitors on the all-season road during periods of mine traffic.
June 13, 2016	Technical Session, YK	<a href="#">PR#246</a>	Water Quality and Quantity	In addition to the acid-base testing discussed in response to PCA-IR-12, CanZinc will conduct metal leach testing during the detailed design phase on representative samples based on the guidance of a professional ML/ARD geochemist.

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June 30, 2016	Technical or Community Sessions	<a href="#">PR#263</a>	Wording Amendment for Commitment 4	<p>The key issue is sediment production and the potential for transport to surface water. Where such potential exists, we agree to erosion and sediment control. That being the case, we propose the following wording:</p> <p>“CanZinc commits to implementing erosion and sediment control where construction has the potential to mobilize sediment and result in transport to surface water, and include specific plans for rapid response in the event of an intense precipitation event.”</p>
June 13, 2016	Technical Session, YK	<a href="#">PR#246</a>	Terrain - Stockpiles	<p>CanZinc commits to placing any stockpiles of material 50 m from flowing water courses. Where this is not possible (e.g. in tight canyons or valleys), CanZinc will implement appropriate erosion and sediment control measures to avoid impacts.</p>
June 30, 2016	Technical or Community Sessions	<a href="#">PR#263</a>	Wording Amendment for Commitment 5	<p>CZN is generally amenable to the intent of the revised text provided by GOC, provided some flexibility is included for locations where the set-backs are not feasible. We propose the following adjusted text:</p> <p>“CanZinc commits to locating stockpiles of rock and coarse material at least 50 m from surface water, and installing sediment control measures as required to prevent sediment from entering the surface water. Where the 50 m set-back is not possible (e.g. in</p>

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				<p>tight canyons or valleys), CanZinc will enhance erosion and sediment control measures to reduce the potential for impacts.</p> <p>Stockpiles will be placed on non-vegetated or sparsely vegetated areas to minimize disturbance to vegetation, where possible.</p> <p>CanZinc commits to locating stockpiles of soil or fine material at least 100 m from surface water, and installing sediment control measures as required to prevent sediment from entering the surface water. Where the 100 m set-back is not possible (e.g. in tight canyons or valleys), CanZinc will enhance erosion and sediment control measures to reduce the potential for impacts. These materials will be retained for reclamation and restoration purposes, as much as possible.</p> <p>Sediment control measures will be installed for any disturbed soils where there is a risk of sediment migration to surface water.”</p>
June 14, 2016	Technical Session, YK	<a href="#">PR#246</a>	Access	CanZinc commits to installing windrows, lumber, or other brush clearing material to discourage access (and limit sightlines) to the road corridor by wildlife and humans at intersections with linear features.
June 14, 2016	Technical Session, YK	<a href="#">PR#246</a>	Monitoring/ Managing	CanZinc commits to developing a suitable inspection and monitoring plan regarding drainage patterns along the road

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			Drainage	alignment to maintain natural drainage and to inform adaptive management actions (including location of equipment required for these management actions such as backhoes and steamers).
June 28, 2016	Technical or Community Sessions	<a href="#">PR#256</a>	Amend Wording for Commitment 7	Amend Wording to: "CanZinc commits to developing a suitable inspection and monitoring plan regarding drainage patterns along the road alignment to maintain natural drainage and to inform adaptive management actions (including considerations for potential fish captures during significant erosion and sediment control works, high risk locations and timing windows, but also the location of equipment required for these management actions such as backhoes, a readily available supply of appropriate erosion and sediment control tools to on hand and steamers)."
June 30, 2016	Technical or Community Sessions	<a href="#">PR#263</a>	Wording Amendment for Commitment 7	We see this commitment being specific to drainage patterns, specifically surface flow between creek crossings and culvert placement, not the protection of fish. We agree with the latter, but we do not feel this commitment is the place for it. For construction work proximal to fish-bearing streams (e.g. Sundog Creek), we will need to consider potential fish relocation and/or timing windows, and these details will be included in a construction execution plan and schedule to be developed during the detailed design process. We propose to leave the commitment as is, with a minor addition:



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				"CanZinc commits to developing a suitable inspection and monitoring plan regarding drainage patterns along the road alignment to maintain natural drainage and to inform adaptive management actions (including location of equipment required for these management actions such as backhoes, steamers and appropriate erosion and sediment control devices)."
June 14, 2016	Technical Session, YK	<a href="#">PR#246</a>	Wildlife – Western Toad	CanZinc commits to conducting a survey, during the summer, of Western toad (SAR) migration across the road alignment between the Nahanni Butte access road and the Liard River, either before or after the early stage of construction (subgrade placement) to better understand the occurrence of Western toad and magnitude of fall migration.
June 28, 2016	Technical or Community Sessions	<a href="#">PR#255</a>	Amend Wording of Commitment 8	GWNT Recommends the following revisions to the wording of Commitment #8: "CanZinc commits to collaborating with GNWT to conduct a breeding pond survey, during the summer, to detect presence of Western toad in nearby water bodies, either before or after the early stage of construction (subgrade placement) to better understand the occurrence of Western toad in the project area and potential need for mitigation during fall migration."
June 30, 2016	Technical or Community Sessions	<a href="#">PR#263</a>	Wording Amendment for Commitment 8	As we understand it, the draft commitment is a concern to GNWT because the timing of a potential western toad migration is unknown, and monitoring along the road may fail to detect it, hence the interest in a breeding pond survey in summer. We further understand that western toad spawn and tadpoles are

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				<p>very large, and would be quite easy to spot by researchers who have been provided with information, guidance and photos i.e. Nahanni Butte community members hired as environmental monitors could be provided with the necessary orientation and could undertake a pond survey. We believe there is conjecture regarding whether western toad is present this far north. In the Technical Session, the section of the access road of interest to GNWT was east of the Liard River crossing. GNWT's proposed rewording expands the section of interest. With these comments in mind, we propose some alterations to GNWT's recommended text, as follows:</p> <p>"CanZinc commits to collaborating with GNWT to enable a breeding pond survey by local environmental monitors during the summer to detect the presence of Western toad in water bodies proximal to the road alignment between the Nahanni Butte access road and the Liard River. The survey will be conducted either before or after the early stage of construction (subgrade placement) to better understand the occurrence of Western toad in this area and potential need for mitigation during fall migration. If Western toad presence is confirmed in this area, the survey will be expanded progressively to other areas proximal to the road on the west side of the Liard River."</p>

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June 14, 2016	Technical Session, YK	<a href="#">PR#246</a>	Terrain – Borrows	Where excavation of borrow below the road grade cannot be avoided, CanZinc commits to applying appropriate guidelines (i.e. quarry guidelines). These considerations will be described in the development plans for these borrow sources, for review and approval by the regulator(s) prior to borrow pit development.
June 15, 2016	Technical Session, YK	<a href="#">PR#246</a>	Monitoring – Water Quality	CanZinc commits to implementing TSS monitoring to address the potential impacts of submerged road surfaces during higher water events (upstream and downstream of Casket Creek and at any other areas where overtopping of road surface is likely to occur).
June 28, 2016	Technical or Community Sessions	<a href="#">PR#256</a>	Amend Wording for Commitment 10	Amend wording to: “CanZinc commits to monitor TSS, pH, dissolved oxygen, conductivity and turbidity to address the potential impacts of submerged road surfaces during higher water events (upstream and downstream of Casket Creek and at any other areas where overtopping the road surface is likely to occur).”
June 30, 2016	Technical or Community Sessions	<a href="#">PR#263</a>	Wording Amendment for Commitment 10	The purpose of this commitment is monitoring if and when overtopping of the road occurs. Therefore, we propose the following wording: “CanZinc commits to implementing TSS/turbidity, pH, dissolved oxygen and conductivity monitoring upstream and downstream of Casket Creek during high water events if overtopping of the road surface is occurring, and at any other areas where overtopping of the road surface occurs.”

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June 15, 2016	Technical Session, YK	<a href="#">PR#246</a>	Risk – Avalanche	CanZinc commits to considering avalanche risks in the design of bridges and crossings and the placement of construction camps, for review and approval by the regulator(s) prior to construction of each applicable bridge/crossing.
June 15, 2016	Technical Session, YK	<a href="#">PR#246</a>	Monitoring - Permafrost	CanZinc commits to developing a permafrost monitoring plan at the permitting phase, informed by a detailed investigation of permafrost along the road alignment.
June 16, 2016	Technical Session, YK	<a href="#">PR#246</a>	Management Plans - Contaminants	CanZinc commits to updating its contaminant loading management plan in consultation with ECCC and Parks, for the permitting phase.
June 16, 2016	Technical Session, YK	<a href="#">PR#246</a>	Riparian Areas	CanZinc commits to not placing road strippings in riparian zones.
June 16, 2016	Technical Session, YK	<a href="#">PR#246</a>	Terrain - Stability	CanZinc as part of permitting will complete a more in depth terrain stability assessment (including identification of risks and mitigations) with a focus on areas identified as unstable and potentially unstable in their terrain mapping, and will provide this information for review and approval by the regulator(s) prior to construction in those areas of focus.
June 16, 2016	Technical Session, YK	<a href="#">PR#246</a>	Management Plans – Road Operations	CanZinc commits to updating the road operations plan to incorporate GNWT Road Operation Guidelines, for review and approval by the regulator(s) prior to relevant operations.
June 16, 2016	Technical Session, YK	<a href="#">PR#246</a>	Risk – Earthquakes	CanZinc will take into account the risk of earthquakes in the design and construction of permanent infrastructure and bridges, for review and approval by the regulator(s) prior to construction

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				of permanent infrastructure and bridges.
June 28, 2016	Technical or Community Sessions	<a href="#">PR#256</a>	Additional Commitment – Road Design	Parks Canada recommends CanZinc commit to adhering to road design standards in the B.C. Ministry of Forests, Lands and Natural Resources Operations Engineering Manual as referenced in All north Response to Information Requests (Proposed Prairie Creek All Season Road) dated May 3, 2016.
June 30, 2016	Technical or Community Sessions	<a href="#">PR#263</a>	Response to Additional Commitment – Road Design	Regarding road design standards, it is appropriate to note that referenced documents are guidelines, not regulations. Each design has to be tailored to site-specific requirements i.e. provide flexibility. Also, it must be remembered that the Prairie Creek access road would carry much less traffic and at much slower speeds than the typical forest road. Therefore, we propose a new commitment as follows: “CanZinc commits to following the road design guidelines in the B.C. Ministry of Forests, Lands and Natural Resources Operations Engineering Manual as much as possible, and explaining and justifying where these guidelines will not be met.”
June 28, 2016	Technical or Community Sessions	<a href="#">PR#256</a>	Additional Commitment – Road Design	Parks Canada recommends that CanZinc commit to incorporating a wider chain-on/off pullout at approximately KP 29 or 30 and that pullouts which will allow trucks with trailers to turn around at approximately 10 km intervals.
June 30, 2016	Technical or Community	<a href="#">PR#263</a>	Response to Additional Commitment –	Because there will be little traffic on the road, trucks could essentially stop on the road to chain- up or chain-off. However, a normal pullout would facilitate passing for other vehicles. A wider pullout isn't

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	Sessions		Road Design	necessary. We propose a new commitment as follows: “CanZinc commits to providing a pullout at approximately KP 29-30 for chain-up/chain-off, and turn-offs at approximately 10 km intervals to allow trucks with trailers to turn around.”
June 28, 2016	Technical or Community Sessions	<a href="#">PR#256</a>	Additional Commitment – Road Design	Parks Canada recommends that CanZinc commit to a minimum 5 m road top width in the final road design, plus widenings at curves as outlined in the BC Forests, Lands and Resources Operations Engineering Manual.

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June 30, 2016	Technical or Community Sessions	<a href="#">PR#263</a>	Response to Additional Commitment – Road Design	<p>Regarding road width, we have stated that the preference is for a 5 m running surface, but that as low as 4 m may only be possible in places. When we issue a contract for road construction, the contract will specify road widths by section. For sections where a 5 m width is required, the contractor will be expected to provide at least a 4.9 m width. Therefore, a minimum 5 m width is impractical and unnecessary. Reference to the BC guidelines is redundant as this is covered in Commitment 18. We propose a new commitment as follows:</p> <p>“CanZinc commits to a minimum 4 m wide running surface width, and a 5 m wide running surface width where possible (the width would be no less than 4.9 m in the latter areas). There will be widenings at curves.”</p>
June 28, 2016	Technical or Community Sessions	<a href="#">PR#256</a>	Additional Commitment – Reclamation	<p>In addition to commitments made by Canadian Zinc in the DAR and DAR Addendum associated with reclamation, Parks Canada requires the reclamation of the project area to a natural state in which the structure and function of the ecosystem is not impaired. Ecosystem restoration is a complex process which requires adaptive management. Parks Canada has noted that CanZinc has identified the restoration of natural drainage, landscape contouring, the removal of infrastructure and scarification to</p>

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				encourage natural regeneration and erosion control (DAR Addendum, Appendix A, Proposed Prairie Creek All Season Access Road, Supplement to Original Submission, Allnorth, and September 8, 2015). Parks Canada further recommends CanZinc commit to incorporating adaptive management into the Reclamation Plan and that all structures including those associated with Sundog Creek are removed as a part of reclamation activities. Parks Canada recommends that CanZinc update the Wildlife Mitigation and Monitoring Plan during the EA phase.
June 30, 2016	Technical or Community Sessions	<a href="#">PR#263</a>	Response to Additional Commitment – Reclamation	<p>CZN is amenable to working with Parks Canada to achieve mutual reclamation goals. However, we feel it is premature at this stage to agree to remove all structures, since some may have a purpose longer term, and/or could be considered part of the landscape. This will require further consideration and engagement with all parties, including local communities. We would be comfortable with the following:</p> <p>”After Mine closure, if the access road is also to be closed and reclaimed, CanZinc is committed to a reclamation goal of restoring pre-disturbance conditions, as much as possible, including the removal of structures no longer required, subject to the engagement and agreement of all parties.”</p>
June 29, 2016	Technical or Community	<a href="#">PR#257</a>	Archeological and Heritage Resources	During the technical session, we heard that our plan to include local community members in pre-construction survey crews was



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	Sessions			appreciated, but that a professional archeologist should also be involved to ensure each crew has the necessary knowledge and information, to provide direction and focus of the crews in the field, and to undertake independent inspections and verification. CZN accepts that there is merit in these suggestions, and so we will accept them as a commitment.