CANADIAN ZINC CORPORATION

August 21, 2011

Chuck Hubert
Environmental Assessment Officer
Mackenzie Valley Review Board
Suite 200, 5102 50th Avenue,
Yellowknife, NT
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Dear Mr. Hubert

RE: Environmental Assessment EA0809-002, Prairie Creek Mine
August 16, 2011 Request for Ruling from Parks Canada

We refer to the August 17, 2011 letter from the Review Board asking parties and the developer to comment on a Request for Ruling (RfR) submitted by Parks Canada. As noted by the Review Board, comments are sought on the following part of the RfR only:

"a) Require the proponent to provide an evaluation of the potential impacts, significance of impacts and identification of mitigative or remedial measures for water storage pond options."

The origin of this part of the RfR is Canadian Zinc Corporation's (CZN's) August 3, 2011 letter to the Review Board. In this letter, we advised that modifications to the project were possible in response to initiatives that would potentially lead to more stringent site specific water quality objectives (SSWQO's).

An assessment by Golder Associates of additional water storage options was presented, including enhancing the capacity of the existing Water Storage Pond (WSP) and a conceptual design for a second WSP. The submission was made to allow parties the opportunity to review and provide recommendations on the possible project modifications during the current EA.

We noted that CZN had not made a decision regarding the adoption of an additional water storage alternative, and that such a decision would be taken later when more information is available. We wish to advise that it is CZN's intention to adopt one of the two additional water storage options, and we will be making a commitment to this effect. This addresses one of Parks Canada's issues (their page 3, 2nd para., 6th line "we did not receive any commitments to any course of action with respect to these options"). However, we cannot say which of the options will be adopted at this time because the decision depends on final SSWQO's and water storage requirements, and on the results of detailed geotechnical investigation and design which is required to confirm the suitability and stability of the structures involved. Regarding stability, we are advised by our consultant that both options should be feasible, but that the magnitude of activities and costs to ensure this may vary, and cannot be accurately estimated without the detailed information. Thus, we cannot currently select the preferred option at this time.

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Therefore, from the perspective of impact assessment of the additional water storage options, both options need to be considered at this point. In the text below, we provide further comments on Parks Canada's request, and give additional information on the storage options.

Expanded WSP

The existing WSP as proposed would have a 3 m operating water level range, which translates into 220,000 m^3 of storage, or 110,000 m^3 per cell. If the minimum pond level is lowered 1 m, and the dykes are raised 1 m, the resulting 5 m range would translate into approximately 320,000 m^3 of storage, or 160,000 m^3 per cell (based on the stage storage curve given in Appendix B of the May 2010 DAR Addendum).

Revised water balances were prepared for an expanded WSP as described above. For each of the mine flow scenarios, each WSP cell was not allowed to accumulate more than 120,000 m^3 over the winter, or conversely lose more than the same amount over the summer. This means that a much larger volume than before, 40,000 m^3 or 25% of the capacity, is reserved for upsets and unforeseen events. In addition, because the expansion of the WSP might lead to more stringent SSWQO's, precipitation runoff flows in the camp ditch are also managed as mine water and sent to the mine water cell to be treated later. This would be a positive impact. Sampling and measurements show that the camp ditch can be a source of contaminants that may become significant depending on final SSWQO's, but that the flows are relatively small. Flows in the mill ditch will continue to flow into the Catchment Pond without treatment. While these flows also currently carry some contaminants, the source is believed to be seepage from the 870 Level adit and/or discharge to Harrison Creek from the Vein Fault, both of which will not occur during operations.

The existing and expanded WSP water balances for 'Best Estimate' mine flows are presented in Tables 1 and 2, respectively for comparison. Mine flows reporting to the Water Treatment Plant (WTP) followed by discharge to the environment are much the same as before for the expanded pond. However, the additional storage does allow process water treatment and discharge to be avoided over a longer winter period, December-April (inclusive). This is important because it is over this period when abnormally low creek flows could lead to peak receiving water concentrations.

Regarding Parks Canada's statement that "increasing the capacity of this pond may include a need to build into Prairie Creek", in the Golder report dated August 2, 2011 titled "Consideration of Additional Water Storage Options", it is stated on page 3 that "The main embankment adjacent to Prairie Creek would have to be raised by 'upstream' methods, that is, by placing material on the inner slope of the structure as well as the top." This means that material would not be placed on the outer slope of the embankment, and there would be no encroachment on Prairie Creek. We note that CZN has already stated on the record that there are low spots on the existing dyke (up to 0.5 m), and that pond rehabilitation will include raising these spots (also by upstream methods) to provide a uniform 881 m elevation. Safeguards would be implemented during this process to prevent material from rolling down the slope and into the creek. The same approach and safeguards would be used if an additional dyke raise were to be deemed acceptable and appropriate. We note that work was recently completed along sections of the dyke near the

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toe to replace lost armour. This included cutting an access road into the dyke face. The work was undertaken without any loss of dyke material into the creek and without any significant impacts.

A dyke raise to 882 m elevation would only be completed after detailed investigation and design, verification of stability, and approval by regulatory authorities. There would be no incremental negative impacts on water quality, fish and aquatic habitat, wildlife, or the likelihood and consequences of accidents and malfunctions. There would be a positive impact on water storage and a consequent positive impact on the ability to respond to accidents and malfunctions associated with the water management system.

Two Ponds

A second WSP would provide additional storage of approximately 400,000 m^3. The second pond would be used to store mine water instead of Cell B in the existing WSP. In this scenario, the existing WSP would store process water without a separation dyke, and therefore the 'active' storage would be in excess of 220,000 m^3. Water balances for this scenario again assumed 25% of the active capacity of each pond is reserved for upsets and unforeseen events (65,000 m^3 in the existing WSP and 100,000 m^3 in the second WSP). Given the size of these water volumes, a 25% contingency is perhaps too large.

A combined water balance for both WSP's based on 'Best Estimate' mine flows is given in Table 3. The significant additional storage would allow mine water and process water treatment and discharge to be avoided over the December-April period, further reducing the risk of peak receiving water concentrations during low creek flows.

The conceptual design for a second WSP includes provision for detailed site investigation and design, including stability analyses. A double liner system has been proposed to ensure no leakage from the pond. This would also be verified by monitoring wells. Upslope runoff would be diverted around the facility. Erosion protection will be installed in the diversions as per the detailed design. The pond would have a maximum water level and a minimum 1 m freeboard. As noted in the Golder report, the pond would be set back 30 m from the normal high water mark of Prairie Creek to preserve the riparian zone.

Water would be delivered to, and returned from, the pond via pipelines. These will be highly durable HDPE pipes which are not prone to rupture. The pipelines would be routed (from west to east) from the 870 Level portal to the 2nd WSP location via the north side of the Mill, the north side of the Tank Farm, and along the toe of slope on the inside of an access road adjacent to Prairie Creek. Because of the risk of pipe rupture, secondary containment will be provided where the pipes cross Harrison Creek, perhaps in the form of a culvert or a much larger pipe. A lined ditch will be created on the inside of the access road to carry water in the event of a spill to areas of containment. Pressure sensors will be installed on the pipes. A drop in pressure would trigger pump shut-off. Therefore, any spill would be small in volume, and managed by the secondary containment structures. Therefore, we do not envisage any significant impacts on receiving water quality.

A vegetation and wildlife impact assessment by Golder Associates for the second WSP site was provided previously. DFO inquired about two small ponds and an emphemeral stream indicated

on Figure 2 of the Golder conceptual design report, and whether these constitute fish habitat. A field inspection was carried out by Hatfield, and a field report is attached. This confirmed the absence of fish habitat.

The beneficial impacts of the additional storage capacity that a second WSP would provide would be the same as for an expanded (first) WSP, except that these impacts would be magnified because of the considerably greater storage volume.

Closing Remarks

Consideration of additional water storage options is in response to initiatives that would potentially lead to more stringent site specific water quality objectives (SSWQO's), as requested by some parties, including Parks Canada. CZN has defined the options, but for the reasons given above, cannot at this stage specify which option will be selected. However, one of the options will be selected.

As noted above, there will be no incremental negative impacts on the environment from raising the dykes of the existing WSP, pre-supposing stability analyses confirm this is acceptable. There would be incremental positive impacts associated with the increased storage volume.

The potential for negative environmental impacts associated with a second WSP has been assessed, and the potential is deemed to be low. The beneficial impact would be large because of the storage volume as this would allow an improved water management plan and substantial volume for contingencies. Note, a large pond was previously subject to environmental assessment and was permitted for this location previously.

The information provided on additional water storage options is considered to fulfill Part A of the RfR, and the requirements of Section 117(2) of the *Mackenzie Valley Resource Management Act* in terms of assessment of the impact of the development on the environment. The majority of this information was provided on August 3, 2011 and to date the parties have had 2.5 weeks to consider the information. The Review Board has advised parties that final comments on the EA are to be provided by September 6, 2011. This provides 2 more weeks for parties to review the additional water storage option information, and CZN will respond to review comments by our September 9, 2011 deadline. Therefore, the water storage options will meet the EA requirements set out in the MVRMA, and would be available to be permitted according to Section 118(1) of the MVRMA.

Yours truly,
CANADIAN ZINC CORPORATION

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TABLE 1: SITE WATER FLOWS (BEST ESTIMATE) AND WSP WATER BALANCE

Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
	PROCESS WATER L/s												
Process Feed	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	22.8
Losses to solids	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Mill Effluent to Water Storage Po	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20
Cell A to Water Treatment Plant	1.0	0.0	0.0	1.5	9.5	11.5	11.5	11.5	10.0	5.0	2.5	1.5	5.5
	MINE WATER L/s												
Mine Drainage to Water Storage	15.0	15.0	15.0	15.0	41.3	61.7	90.3	74.3	60.5	55.3	25.0	20.0	40.7
Process Feed	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Cell B to Water Treatment Plant	8.0	3.0	3.0	5.0	62.0	66.0	66.0	66.0	59.5	41.0	18.0	10.0	34.0

	WATER STORAGE POND WATER BALANCE												
Inflows (m^3)	**Process Water Cell (Cell A)**												
Mill Effluent	53,568	48,384	53,568	51,840	53,568	51,840	53,568	53,568	51,840	53,568	51,840	53,568	630,720
Precipitation	1,229	1,229	1,092	1,365	2,184	3,140	4,642	3,823	3,140	2,594	1,638	1,229	27,305
Total	**54,797**	**49,613**	**54,660**	**53,205**	**55,752**	**54,980**	**58,210**	**57,391**	**54,980**	**56,162**	**53,478**	**54,797**	**658,025**
Outflows (m^3)													
Mill Process Feed	39,694	35,853	39,694	38,413	39,694	38,413	39,694	39,694	38,413	39,694	38,413	39,694	467,364
Evaporation	0	0	0	0	1,075	4,096	5,461	4,096	2,731	0	0	0	17,458
To WTP	2,678	0	0	3,888	25,445	29,808	30,802	30,802	25,920	13,392	6,480	4,018	173,232
Total	**42,372**	**35,853**	**39,694**	**42,301**	**66,214**	**72,317**	**75,956**	**74,591**	**67,064**	**53,086**	**44,893**	**43,711**	**658,054**
Difference (m^3)	**12,424**	**13,760**	**14,966**	**10,904**	**-10,461**	**-17,337**	**-17,747**	**-17,201**	**-12,084**	**3,076**	**8,585**	**11,085**	**-29**
Cum. Diff. (m^3)	**12,424**	**26,185**	**41,151**	**52,055**	**41,593**	**24,256**	**6,510**	**-10,691**	**-22,775**	**-19,699**	**-11,114**	**-29**	
Cum. Diff. Oct-Apr (m^3)	**12,424**	**13,760**	**14,966**	**10,904**						**3,076**	**8,585**	**11,085**	**74,801**
Inflows (m^3)	**Mine Water Cell (Cell B)**												
Mine Drainage	40,176	36,288	40,176	38,880	110,618	159,926	241,860	199,005	156,816	148,116	64,800	53,568	1,290,228
Sewage Water	1,004	907	1,004	972	1,004	972	1,004	1,004	972	1,004	972	1,004	11,826
Waste Rock Pile	0	0	0	0	6,756	2,045	3,023	2,489	2,045	0	0	0	16,358
Stockpiles	0	0	0	0	319	96	142	117	96	0	0	0	771
Precipitation	1,229	1,229	1,092	1,365	2,184	3,140	4,642	3,823	3,140	2,594	1,638	1,229	27,305
Total	**42,409**	**38,424**	**42,273**	**41,217**	**120,882**	**166,180**	**250,671**	**206,439**	**163,069**	**151,714**	**67,410**	**55,801**	**1,346,488**
Outflows (m^3)													
Mill Process Feed	21,374	19,305	21,374	20,684	21,374	20,684	21,374	21,374	20,684	21,374	20,684	21,374	251,657
To WTP	21,427	7,258	8,035	12,960	166,061	171,072	176,774	176,774	154,224	109,814	46,656	26,784	1,077,840
Evaporation	0	0	0	0	1,075	4,096	5,461	4,096	2,731	0	0	0	17,458
Total	**42,801**	**26,563**	**29,409**	**33,644**	**188,509**	**195,852**	**203,609**	**202,244**	**177,639**	**131,188**	**67,340**	**48,158**	**1,346,955**
Difference (m^3)	**-392**	**11,861**	**12,864**	**7,573**	**-67,628**	**-29,672**	**47,062**	**4,195**	**-14,569**	**20,526**	**70**	**7,643**	**-467**
Cum. Diff. (m^3)	**-392**	**11,469**	**24,333**	**31,906**	**-35,722**	**-65,394**	**-18,332**	**-14,137**	**-28,707**	**-8,181**	**-8,111**	**-467**	
Cum. Diff. Jul-Mar (m^3)	**-392**	**11,861**	**12,864**	**7,573**			**47,062**	**4,195**	**-14,569**	**20,526**	**70**	**7,643**	**96,833**

Mine water treatment m^3	21,427	8,035	8,035	13,392	166,061	176,774	176,774	176,774	159,365	109,814	48,211	26,784	1,091,448
Process water treatment m^3	2,678	0	0	4,018	25,445	30,802	30,802	30,802	26,784	13,392	6,696	4,018	175,435
Treated mine water L/s	8	3	3	5	62	66	66	66	59.5	41	18	10	34.0
Treated process water L/s	1	0	0	1.5	9.5	11.5	11.5	11.5	10	5	2.5	1.5	5.5
Ditches L/s	0	0	0	2	6	15	15	15	15	0.5	0	0	5.7
Total discharge L/s	9	3	3	8.5	77.5	92.5	92.5	92.5	84.5	46.5	20.5	11.5	45.1
Ratio to process water	8.0			4.7	7.2	7.0	7.0	7.0	7.5	8.3	7.2	6.7	

Area of WSP=	107,500 m^2			Rock pile area		50,000 m^2			Sewage L/day		32,400		
Volume of WSP=	450,000 m^3			Stockpiles area		1,650 m^2							
PC Precip mm	22.9	22.9	20.3	25.4	40.6	58.4	86.4	71.1	58.4	48.3	30.5	22.9	508.0

TABLE 2: SITE WATER FLOWS (BEST ESTIMATE) AND EXPANDED WSP WATER BALANCE

Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
	PROCESS WATER L/s												
Process Feed	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	22.8
Losses to solids	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Mill Effluent to Water Storage Po	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20
Cell A to Water Treatment Plant	0.0	0.0	0.0	0.0	10.0	13.5	13.5	12.5	10.0	5.0	1.0	0.0	5.5
	MINE WATER L/s												
Mine Drainage to Water Storage	15.0	15.0	15.0	15.0	41.3	61.7	90.3	74.3	60.5	55.3	25.0	20.0	40.7
Process Feed	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Cell B to Water Treatment Plant	5.0	3.0	3.0	7.0	60.0	80.0	80.0	71.0	60.0	28.5	13.0	7.0	34.8

	WATER STORAGE POND WATER BALANCE												
Inflows (m^3)	**Process Water Cell (Cell A)**												
Mill Effluent	53,568	48,384	53,568	51,840	53,568	51,840	53,568	53,568	51,840	53,568	51,840	53,568	630,720
Precipitation	1,229	1,229	1,092	1,365	2,184	3,140	4,642	3,823	3,140	2,594	1,638	1,229	27,305
Total	**54,797**	**49,613**	**54,660**	**53,205**	**55,752**	**54,980**	**58,210**	**57,391**	**54,980**	**56,162**	**53,478**	**54,797**	**658,025**
Outflows (m^3)													
Mill Process Feed	39,694	35,853	39,694	38,413	39,694	38,413	39,694	39,694	38,413	39,694	38,413	39,694	467,364
Evaporation	0	0	0	0	1,075	4,096	5,461	4,096	2,731	0	0	0	17,458
To WTP	0	0	0	0	26,784	34,992	36,158	33,480	25,920	13,392	2,592	0	173,318
Total	**39,694**	**35,853**	**39,694**	**38,413**	**67,553**	**77,501**	**81,313**	**77,270**	**67,064**	**53,086**	**41,005**	**39,694**	**658,140**
Difference (m^3)	**15,103**	**13,760**	**14,966**	**14,792**	**-11,800**	**-22,521**	**-23,103**	**-19,879**	**-12,084**	**3,076**	**12,473**	**15,103**	**-115**
Cum. Diff. (m^3)	**15,103**	**28,863**	**43,829**	**58,621**	**46,821**	**24,300**	**1,196**	**-18,683**	**-30,767**	**-27,691**	**-15,218**	**-115**	
Cum. Diff. Oct-Apr (m^3)	**15,103**	**13,760**	**14,966**	**14,792**						**3,076**	**12,473**	**15,103**	**89,273**
Inflows (m^3)	**Mine Water Cell (Cell B)**												
Mine Drainage	40,176	36,288	40,176	38,880	110,618	159,926	241,860	199,005	156,816	148,116	64,800	53,568	1,290,228
Camp Ditch	0	0	0	2,592	4,018	5,184	5,892	2,678	5,184	0	0	0	25,548
Sewage Water	1,004	907	1,004	972	1,004	972	1,004	1,004	972	1,004	972	1,004	11,826
Waste Rock Pile	0	0	0	0	6,756	2,045	3,023	2,489	2,045	0	0	0	16,358
Stockpiles	0	0	0	0	319	96	142	117	96	0	0	0	771
Precipitation	1,229	1,229	1,092	1,365	2,184	3,140	4,642	3,823	3,140	2,594	1,638	1,229	27,305
Total	**42,409**	**38,424**	**42,273**	**43,809**	**124,899**	**171,364**	**256,563**	**209,117**	**168,253**	**151,714**	**67,410**	**55,801**	**1,372,037**
Outflows (m^3)													
Mill Process Feed	21,374	19,305	21,374	20,684	21,374	20,684	21,374	21,374	20,684	21,374	20,684	21,374	251,657
To WTP	13,392	7,258	8,035	18,144	160,704	207,360	214,272	190,166	155,520	76,334	33,696	18,749	1,103,630
Evaporation	0	0	0	0	1,075	4,096	5,461	4,096	2,731	0	0	0	17,458
Total	**34,766**	**26,563**	**29,409**	**38,828**	**183,153**	**232,140**	**241,107**	**215,636**	**178,935**	**97,708**	**54,380**	**40,122**	**1,372,746**
Difference (m^3)	**7,643**	**11,861**	**12,864**	**4,981**	**-58,253**	**-60,776**	**15,457**	**-6,519**	**-10,681**	**54,006**	**13,030**	**15,679**	**-709**
Cum. Diff. (m^3)	**7,643**	**19,505**	**32,368**	**37,349**	**-20,904**	**-81,680**	**-66,224**	**-72,742**	**-83,424**	**-29,418**	**-16,388**	**-709**	
Cum. Diff. Jul-Mar (m^3)	**7,643**	**11,861**	**12,864**	**4,981**						**54,006**	**13,030**	**15,679**	**120,064**

Mine water treatment m^3	13,392	8,035	8,035	18,749	160,704	214,272	214,272	190,166	160,704	76,334	34,819	18,749	1,118,232
Process water treatment m^3	0	0	0	0	26,784	36,158	36,158	33,480	26,784	13,392	2,678	0	175,435
Treated mine water L/s	5	3	3	7	60	80	80	71	60	28.5	13	7	34.8
Treated process water L/s	0	0	0	0	10	13.5	13.5	12.5	10	5	1	0	5.5
Mill Ditch L/s	0	0	0	4	12	22	23	20	25	12	0	0	9.8
Total discharge L/s	5	3	3	11	82	115.5	116.5	103.5	95	45.5	14	7	50.1
Ratio to process water					7.2	7.6	7.6	7.3	8.5	8.1	13.0		

TABLE 3: SITE WATER FLOWS (BEST ESTIMATE) AND TWO POND WATER BALANCE

Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
	PROCESS WATER L/s												
Process Feed	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	22.8
Losses to solids	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Mill Effluent to Water Storage Po	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20
WSP 1 to Water Treatment Plant	0.0	0.0	0.0	0.0	10.0	15.0	15.0	13.0	10.0	5.0	1.0	0.0	5.8
	MINE WATER L/s												
Mine Drainage to Water Storage	15.0	15.0	15.0	15.0	41.3	61.7	90.3	74.3	60.5	55.3	25.0	20.0	40.7
Process Feed	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
WSP 2 to Water Treatment Plant	0.0	0.0	0.0	0.0	70.5	100.0	100.0	67.0	50.0	25.0	8.0	0.0	35.0

	WATER STORAGE POND WATER BALANCES												
Inflows (m^3)	**Process Water (WSP1)**												
Mill Effluent	53,568	48,384	53,568	51,840	53,568	51,840	53,568	53,568	51,840	53,568	51,840	53,568	630,720
Precipitation	2,457	2,457	2,184	2,731	4,369	6,280	9,284	7,645	6,280	5,188	3,277	2,457	54,610
Total	**56,025**	**50,841**	**55,752**	**54,571**	**57,937**	**58,120**	**62,852**	**61,213**	**58,120**	**58,756**	**55,117**	**56,025**	**685,330**
Outflows (m^3)													
Mill Process Feed	39,694	35,853	39,694	38,413	39,694	38,413	39,694	39,694	38,413	39,694	38,413	39,694	467,364
Evaporation	0	0	0	0	2,150	8,192	10,922	8,192	5,461	0	0	0	34,916
To WTP	0	0	0	0	26,784	38,880	40,176	34,819	25,920	13,392	2,592	0	182,563
Total	**39,694**	**35,853**	**39,694**	**38,413**	**68,628**	**85,485**	**90,792**	**82,705**	**69,794**	**53,086**	**41,005**	**39,694**	**684,843**
Difference (m^3)	**16,332**	**14,989**	**16,059**	**16,157**	**-10,691**	**-27,365**	**-27,940**	**-21,491**	**-11,674**	**5,670**	**14,111**	**16,332**	**487**
Cum. Diff. (m^3)	**16,332**	**31,320**	**47,379**	**63,536**	**52,845**	**25,480**	**-2,460**	**-23,951**	**-35,626**	**-29,955**	**-15,844**	**487**	
Cum. Diff. Oct-Apr (m^3)	**16,332**	**14,989**	**16,059**	**16,157**						**5,670**	**14,111**	**16,332**	**99,649**
Inflows (m^3)	**Mine Water (WSP 2)**												
Mine Drainage	40,176	36,288	40,176	38,880	110,618	159,926	241,860	199,005	156,816	148,116	64,800	53,568	1,290,228
Camp Ditch	0	0	0	2,592	4,018	5,184	5,892	2,678	5,184	0	0	0	25,548
Sewage Water	1,004	907	1,004	972	1,004	972	1,004	1,004	972	1,004	972	1,004	11,826
Waste Rock Pile	0	0	0	0	6,756	2,045	3,023	2,489	2,045	0	0	0	16,358
Stockpiles	0	0	0	0	319	96	142	117	96	0	0	0	771
Precipitation	2,457	2,457	2,184	2,731	4,369	6,280	9,284	7,645	6,280	5,188	3,277	2,457	54,610
Total	**43,638**	**39,653**	**43,365**	**45,175**	**127,084**	**174,504**	**261,205**	**212,940**	**171,393**	**154,308**	**69,049**	**57,030**	**1,399,342**
Outflows (m^3)													
Mill Process Feed	21,374	19,305	21,374	20,684	21,374	20,684	21,374	21,374	20,684	21,374	20,684	21,374	251,657
To WTP	0	0	0	0	188,827	259,200	267,840	179,453	129,600	66,960	20,736	0	1,112,616
Evaporation	0	0	0	0	2,150	8,192	10,922	8,192	5,461	0	0	0	34,916
Total	**21,374**	**19,305**	**21,374**	**20,684**	**212,351**	**288,076**	**300,136**	**209,018**	**155,745**	**88,334**	**41,420**	**21,374**	**1,399,189**
Difference (m^3)	**22,264**	**20,347**	**21,991**	**24,490**	**-85,267**	**-113,572**	**-38,930**	**3,922**	**15,648**	**65,974**	**27,628**	**35,656**	**152**
Cum. Diff. (m^3)	**22,264**	**42,612**	**64,603**	**89,093**	**3,826**	**-109,746**	**-148,676**	**-144,755**	**-129,106**	**-63,132**	**-35,504**	**152**	
Cum. Diff. Jul-Mar (m^3)	**22,264**	**20,347**	**21,991**	**24,490**					**15,648**	**65,974**	**27,628**	**35,656**	**234,000**

Mine water treatment m^3	0	0	0	0	188,827	267,840	267,840	179,453	133,920	66,960	21,427	0	1,126,267
Process water treatment m^3	0	0	0	0	26,784	40,176	40,176	34,819	26,784	13,392	2,678	0	184,810
Treated mine water L/s	0	0	0	0	70.5	100	100	67	50	25	8	0	35.0
Treated process water L/s	0	0	0	0	10	15	15	13	10	5	1	0	5.8
Mill Ditch L/s	0	0	0	4	12	22	23	20	25	12	0	0	9.8
Total discharge L/s	0	0	0	4	92.5	137	138	100	85	42	9	0	50.6
Ratio to process water					8.3	8.1	8.2	6.7	7.5	7.4	8.0		

CANADIAN ZINC CORPORATION - PRAIRIE CREEK MINE PROJECT

Environmental Oversight Field Report

Prepared by: Kurt Merrifield
Environmental Specialist
Hatfield Consultants
Suite 200-850 Harbourside Drive
North Vancouver, BC

Prepared for: David Harpley, V.P. Environmental and Permitting Affairs
Prairie Creek Mine

Site Visit Date: August 12, 2010

Report Date: August 19, 2010

RE: Field Assessment of Potential Containment Pond Site for Impacts to Fish or Fish Habitat

A site inspection was conducted by Kurt Merrifield of Hatfield Consultants on the afternoon of August 12, 2011, during a period of pronounced precipitation, to conduct a field assessment for a proposed additional containment pond for potential impacts to existing fish and fish habitat. The site is proposed to contain approximately 400,000 m^3 of mine water, is approximately 575 m long by 200 m wide, and sits approximately 40 m above the north bank of Prairie Creek. The proposed site is primarily situated on a previously disturbed area, which is networked by a gravel sorting area, access roads, and several storage areas (Photo 1). The proposed site contains 2 small ponds (Photo 2 and 3) and a small ephemeral watercourse (<1 m wide) connecting the sideslope to the northeast with the upper pond (Photo 4). The entire length of the watercourse and both ponds were walked to assess potential impacts to fish or fish habitat.

Results

At the time of the assessment there was no discernable flow observed in the small channel, through the culvert along the access road (Photo 5), or in either pond. Some areas of wet soil were noted in the ponds; however, water levels were not of a measurable depth. There was no physical connectivity of surface water from the ponds or small watercourse with Prairie Creek. The small watercourse and ponds

within the footprint of the second pond are strictly ephemeral and would only be expected to become temporarily active during spring run-off or extreme flood/rain events.

Observations for this environmental oversight report regarding impacts to fish or fish habitat within the footprint of the proposed secondary containment pond are summarized below:

1. There is not substantial water flow or depth (perennial) to support a population of fish.
2. There is no connectivity to a fish-bearing tributary or stream to provide access for migrating fish (Photo 6).
3. The area encompassed by the proposed second pond is primarily situated on previously disturbed land.

Conclusions and Recommendations

Based on the preceding observations, significant impact to fish or fish habitat within the proposed second pond, as outlined by Golder Associates (Figure P1013760070-2000-02), is unlikely provided there is no further encroachment on the mainstem of Prairie Creek to the south.

Photographs

Photo 1. Disturbed area near gravel pit in area for proposed pond. Note the location of lower pond behind culvert in background.

Photo 2. Upper pond basin showing lack of water flow/depth. Note outlet of culvert at bottom of photo.

Photo 3. Lower pond basin indicating lack of water flow/depth. Note wetted soil area at left of photo and gravel sorting equipment in background.

Photo 4. Ephemeral watercourse channel indicating lack of water flow/depth. Photo looking upstream from access road above culvert.

Photo 5. Ephemeral watercourse channel indicating lack of water flow/depth. Photo looking upstream at access road and culvert.

Photo 6. Outlet of lower pond (approximately 40 m north of Prairie Creek) indicating lack of channel connectivity for fish passage.