CANADIAN ZINC CORPORATION

September 2, 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: <u>Environmental Assessment EA0809-002, Prairie Creek Mine</u>
<u>Paste Backfill Review</u>

This letter is to provide a summary of the review that has occurred recently with respect to the placement of floatation tailings underground as backfill, specifically regarding volume calculations and related issues.

In their Technical Report, Aboriginal Affairs and Northern Development Canada (AANDC) questioned if there was sufficient void space for all of the flotation tailings from milling operations to fit into the underground workings. Canadian Zinc Corporation (CZN) submitted further details of the backfill plan as Undertaking 1, dated July 7, 2011, and confirmed that all flotation tailings will fit underground.

Subsequently, a Memo dated August 8, 2011 from John Brodie, consultant to AANDC, was forwarded to CZN (see attached). Mr Brodie stated that two broad scenarios can be envisioned with respect to management. In one scenario, only flotation tailings could be directed underground, in which case it could all be contained in the mined out stopes. This would leave a small void space in the mine to be filled with DMS rock (DMS), and the remaining DMS would go to the rock pile on surface. The other scenario would be to place a blend of cemented DMS and flotation tailings in the mine in a way which gives the most efficient and least costly mining method. In the December 2009 Golder Associates paste tailings report, this was identified as occurring with a mass ratio of flotation tailings to DMS of 2.8:1. In this case, the void space would accept 2,098,209 tonnes of flotation tailings and 749,360 tonnes of DMS, leaving 407,791 tonnes of flotation tailings on surface at the end of mining.

CZN prepared an additional response dated August 22, 2011 (also attached). In this document, CZN explained that the paste compositions had been revised, provided the revised ratios and the paste backfill plan, and highlighted the contingencies inherent in the plan that provide confidence that all flotation tailings will indeed fit underground. We presented a ‘worst case’ to demonstrate this, with an acknowledgment that all available measures will be taken to maximize the placement of flotation tailings as paste underground as a priority, over-riding any financial

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considerations, until it becomes clear that a significant excess of underground void space would remain. At that point, a greater proportion of DMS could be included in the paste.

A conference call was held between CZN and AANDC on August 19, 2011 to discuss a draft of CZN's August 22nd response. AANDC noted CZN's evidence that the paste compositions had changed, and that at least initially, less DMS will be included in the backfill. On this basis, and with the available contingencies and implementation of measures to maximize the placement of flotation tailings as paste underground, CZN is confident that all flotation tailings will fit underground. However, AANDC noted that a consequence of the revised calculations is that a greater volume of DMS may report to the Waste Rock Pile (WRP). AANDC asked CZN to consider the implications of this on seepage chemistry during operations and after mine closure.

We estimate that approximately 280,000 m^3 of development rock will be placed in the WRP. The original estimate of DMS going to the WRP was approximately 160,000 m^3. In the August 22nd response, the "expected case" includes approximately 220,000 m^3 reporting to the WRP. CZN's consultant, pHase Geochemistry evaluated the significance of the additional volume on seepage quality (letter attached). In terms of a covered WRP, pHase concluded that the additional DMS would "produce generally the same water chemistry as the original predictions". However, predictions indicated potential increases in particularly mercury and zinc concentrations. The following comments are made to provide perspective:

- The 'expected case' with 220,000 m^3 DMS still has contingencies with respect to flotation tailings placement. There is conservatism in the assumption of 35% 6" slump tailings-only paste and 35% 10" slump tailings-only paste being placed. In reality, we expect the proportion of 6" slump paste to be greater, and 10" slump paste to be less, meaning a higher overall paste density and greater excess void. Also, less DMS than assumed is likely to be required to backfill stratabound areas, and DMS need not be used at all in the backfilling of development voids. Therefore, more DMS is ultimately likely to be used in the backfill than has been indicated in the 'expected case', and we believe the actual DMS remaining on surface at closure is likely to approach the original 160,000 m^3 estimate. Thus, the previous predictions regarding water quality would still be applicable;
- Concentrations predicted using laboratory test data are usually conservative (pHase Geochemistry, pers. comm.), with actual concentrations usually being much less;
- The predicted mercury and zinc concentrations from the waste material are significantly higher than those in drainage from Vein mineralization exposures underground. Table 4-6 in the DAR shows that mercury concentrations in 870 level adit flows are usually less than 0.04 mg/L (compared to the 'expected case' pile concentration of 0.14 mg/L), and zinc concentrations average 10 mg/L (compared to the 'expected case' pile concentration of 26 mg/L). Underground cross-cut XC4 drains directly from the Vein, and a September 2010 sample did not detect mercury at a detection limit of 0.02 mg/L, and had a zinc concentration of 11.2 mg/L. It is true that the waste material tested had a greater degree of broken surfaces, but the exposed mineralization underground has a greater relative composition of metals, and so would be expected to generate a poorer quality leachate. The results above suggest that the concentrations predicted for WRP closure water quality are over-estimated;

- The results do not materially change the closure approach, which is to design and construct a cover that reduces infiltration to a sufficient degree that leachate volumes and contaminant loads are sufficiently limited.

Nevertheless, despite the above perspective, we consider it prudent to segregate the areas of development rock and DMS placement in the WRP so that if monitoring of seepage during operations leads to a conclusion that the DMS requires additional controls for closure (such as a thicker cover), these can be implemented without necessarily applying them to the whole pile. An approach that will be investigated during detailed design consists of forming the outer slope areas of the pile with development rock, and placing DMS in the upslope, inner areas of the pile. This will ensure that after closure, the DMS will be below a near horizontal cover. The effectiveness of compaction in achieving low permeability can be better assured on surfaces that are nearly flat or have a low slope angle. Then, the lowest infiltration rates over the whole pile will be in areas where the DMS is placed.

Another possible implication of a greater volume of DMS reporting to the Waste Rock Pile (WRP) that AANDC wanted considered is pile seepage during operations being chemically similar to process water (note that DMS is separated from economic minerals in the Mill before flotation reagents are added). The issue is CZN's intent to route pile seepage collected in the lined Seepage Collection Pond (SCP) into the mine water management circuit. pHase Geochemistry have concluded that "there is not a clear indication that there will be a process related influence on the seepage chemistry during operations as a result of increased DMS proportion in the WRP". Further, even if this occurred, the seepage could be managed in the process water circuit with little adverse effect on the water balance because seepage flows will be relatively small.

There is some potential for all seepage from the WRP not reporting to the SCP. A small proportion could infiltrate the underlying bedrock. The mine workings will underlie the WRP, and groundwater in the area will be drawn into the mine as part of a 'cone' of water level depression. Therefore, any seepage infiltrating from the WRP will be caught in this cone.

Yours truly,
CANADIAN ZINC CORPORATION

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VP, Environment and Permitting Affairs

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MEMORANDUM

DATE: August 8, 2011

TO: Nathen Richea, Paul Green, INAC Water Resources
CC:

FROM: John Brodie, P. Eng. Cassandra Hall, P. Geo

SUBJECT: Prairie Creek Mine – Tailings Management Issues

Canadian Zinc recently forwarded a July 7, 2011 memo from SNC Lavalin concerning backfilling of tailings into the proposed Prairie Creek Mine. This memo presents commentary on that memo. In this memo, and consistent with CDZ's approach, all evaluations are presented on a "mass basis". Some minor differences between this memo and earlier memos from BCL are due to use of the tailings density of 1.84 t/m3 (as suggested by CDZ's tailings engineer) and 1.89 t/m3 as was presented in the DAR.

The following evaluation is based upon the numbers in the SNC-Lavalin memo.

	specific gravity	tonnes	in-situ volume m3
Vein Ore	3.19	3,960,000	1,241,379
Strata-bound Ore	3.38	1,035,000	306,213
Total Ore		4,995,000	1,547,592

The excavated void from mined out ore zones is 1,547,592 m3. This is the void space which can be filled with tailings during operations.

The paste tailings engineer for Canadian Zinc (Mr. F Palkovits, with reference to GAL paste tailings report of Dec 2009), confirmed in his email of May 29, 2011, that the bulk dry density of the paste tailings is 1.84 tonnes/m3. (*Note: tailings backfill determinations must be made using dry density, not wet density. The wet density is always greater than the dry density because the*

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mass of water in the pore space.) Filling the available void space of 1,547,592 m3 with tailings at 1.84 tonnes/m3, means that 2,847,569 tonnes of tailings can be placed underground.

Referring again to the SNC-Lavalin memo, there is 4,995,000 tonnes of ore which will yield 1,285,000 tonnes of concentrate. This leaves 1,204,000 tonnes of DMS tailings and 2,506,000 tonnes of flotation tailings, which total to 3,710,000 tonnes of tailings.

The underground capacity for tailings is 2,847,569 tonnes, which is much less than the 3,710,000 tonnes that will be produced. The surplus of tailings must be stored on surface. A small portion of this might be placed in the development drifts at the end of mining.

A number of variations can be debated about the management of the DMS and flotation tailings. Two broad scenarios can be envisioned which describe the limits of tailings management.

1

In one scenario, only flotation tailings could be directed underground; in which it could all be contained in the mined out stopes. This would leave a small void space in the mine to be filled with DMS tailings and the remaining DMS tailings would go to the rock pile on surface.

2

The other scenario would be to place a blend of cemented DMS and flotation tailings in the mine in a way which gives the most efficient and least costly mining method. In the Dec 2009 GAL paste tailings report, this was identified as occurring with a mass ratio of flotation to DMS tailings of 2.8 : 1. In this case the void space for 2, 847,569 tonnes of blended tailings would accept 2,098,209 tonnes of flotation tailings and 749,360 tonnes of DMS tailings. In this case there would be 407,791 tonnes of flotation tailings on surface at the end of mining.

Conclusions

1. The void space in the mine (during operations) has capacity for 2, 847,569 tonnes of tailings.
2. The total mass of tailings to be produced is 3,710,000 tonnes (1,204,000 tonnes DMS and 2,506,000 tonnes flotation).

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3. The most efficient and cost effective mine operation will leave up to 408,000 tonnes of flotation tailings on surface (in the WSP) at the end of operations.
4. Operational up-set conditions and/or disposal of development waste rock in the stopes will increase the amount of tailings on surface. Both of these are likely to occur.

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Memorandum

To: AANDC **Pages:** 3

From: CZN

Date: August 22, 2011

Re: Response to Brodie Aug 9 Comments on Paste Backfill

Bulk Dry Density

In CZN's submission dated July 7, 2011 the tailings management plan was based on 3 different pastes to be used during backfill. Two of the paste mixes will not contain Dense Media Separated float rock (DMS). Therefore, Mr. Brodie's memo dated August 8, 2011 does not accurately reflect the planned tailings management plan. In addition, Mr. Brodie does not account for the void available for backfill represented by development headings.

The 3 types of paste are as follows:

- 6" slump paste using flotation tailings-only
- 10" slump paste using flotation tailings-only
- 6" slump paste using 50% DMS : 50% flotation tailings

Paste fill consistency is measured in terms of its slump characteristics, specifically by CSA testing method A23.2-5C, similar to that of the concrete industry. Slump is a measure of the deformation of a material when placed in a conical shape. The lower the slump, the thicker the material and the better a given material will hold its shape. 6" slump material has a higher density than 10" slump material.

The paste types will be used in the following scenarios:

The 6" slump flotation tailings-only paste will be used to fill as much of the void volume as possible below operating surfaces. This material will be used in areas of lower strength requirements.

The 10" slump flotation tailings-only paste will also be used to fill areas of lower strength requirements, but in areas where it is difficult to place the 6" slump material. The 10" slump material has a higher water component, allowing better flow into tight areas. Whenever possible, 6” slump material will be placed in preference to 10” slump material.

The 6” slump paste using 50% DMS:50% flotation tailings will be used as the running/operating surface for mobile equipment. This material will have the highest strength, and will have an average thickness of 1.5 m for each ‘lift’.

The most current design of the tailings backfill management plan was principally driven to achieve 100% tailings placement underground. Economics and efficiencies played a secondary role to this primary criterion.

This type of plant will have the flexibility to add water/slurry as is deemed necessary. The proportioning system can add in as much or as little water/slurry to produce the desired composition and slump of the tailings. If operational conditions warrant, this mixture can readily be altered to whatever desired effect.

Overall Tailings/DMS Ratio (by weight)

Attachment 1 illustrates the conservative and expected cases showing planned tailings and DMS tonnages and volumes to be placed underground.

In a memo dated Aug 8, 2011, Mr Brodie notes a paste tailings dry density of 1.84 t/m3, and a ratio of tailings to DMS of 2.8:1, as per the 2009 GAL paste tailings report. Attachment 1 shows that the overall weighted average dry density of the paste is approximately 1.88 t/m3. However, the ratio of tailings to DMS is now approximately 5:1 tailings to DMS.

DMS

Attachment 1 assumes DMS will have an SG of 2.8 and will bulk at a factor of 33% from its original state in the ground. It has been assumed that after all tailings are underground, the remaining void will be filled with DMS only with an 80% void fill of remaining space. This is conservative because, in reality, DMS would be added to the paste fill in increasing quantities to fill all voids, resulting in a higher paste density and greater overall proportion of DMS placed underground.

Contingencies and Other Factors

Further contingencies are implicit within the development voids backfill, as strength is not required in this paste and therefore no DMS need be used.

There is conservatism in the assumption of 35% 6” slump tailings-only paste and 35% 10” slump tailings-only paste being placed. In reality, we expect the proportion of 6” slump paste to be greater, and 10” slump paste to be less, meaning a higher overall paste density and greater excess void.

Potential also exists to lower the proportion of the 50% DMS:50% float tails paste used in stratabound mineralization mining (stratabound represents 1/5th of the current mineable resource). This mineralization is of a wider nature than that of the narrow vein, presenting the potential for increased flexibility within the backfill management plan. A mining method could be used requiring less strength in the paste than the cut and fill method. Potential also exists to increase the proportion of 6" slump tailings-only paste and decrease 10" slump tailings-only paste while backfilling to increase tailings deposition. As stratabound mineralization is only encountered mid-way through the mine plan, there would be suitable time to alter plans to increase tailings placement if the need arose.

Operational upset conditions will not affect paste backfilling in terms of the filling of void space. Paste components will be temporarily stored in the event of an upset, and backfilling would resume when conditions return to normal.

Waste rock will not be left underground. It will all be brought to surface, unless it is clear during the later stages of mine life that excess void will remain after the backfill of all float tails. CZN will include a commitment to this effect in its final submission to the Review Board.

Conclusions

As indicated in Attachment 1, all float tails will fit underground with excess development voids remaining. These excess development voids will be filled with DMS. CZN will commit to placing all float tails underground.

Attachment 1

Total flotation tailings produced	2,506,200							
Total DMS waste produced	1,203,800							
Table 1: Conservative Scenario								
For placement within stopes	Wet density	% solids	Dry density	Dry Density after consolidation	% of placed paste (by volume)	Tailings Tonnage	DMS Tonnage	Volume (m3)
6" slump - tailings only	2.12	81.3%	1.72	1.79	35%	922,400	-	514,600
10" slump - tailings only	2.07	79.6%	1.65	1.71	35%	881,800	-	514,600
50:50 DMS float and tailings	2.32	88.0%	2.04	2.12	30%	468,300	468,300	441,100
Voids available within stopes								1,547,600
Volume of paste deposited within stopes (95% fill)								1,470,200
Average/Total	2.17	83.0%	1.81	1.88	100%	2,272,500	468,300	
For placement within development voids								
10" slump - tailings only	2.07	79.6%	1.65	1.71	100%	233,700	-	142,000
Voids available within development								252,400
Volume of paste deposited within development								142,000
Leftover voids after fill								110,400
DMS remaining before final void fill							735,500	349,363
DMS remaining after final void fill (amount for waste dump)							549,600	261,060
Development rock to waste dump								276,500
Total DMS and development rock to waste dump								537,560
Table 2: Expected Scenario								
For placement within stopes	Wet density	% solids	Dry density	Dry Density after consolidation	% of placed paste (by volume)	Tailings Tonnage	DMS Tonnage	Volume (m3)
6" slump - tailings only	2.12	81.3%	1.72	1.79	35%	951,500	-	530,800
10" slump - tailings only	2.07	79.6%	1.65	1.71	35%	909,600	-	530,800
50:50 DMS float and tailings	2.32	88.0%	2.04	2.12	30%	483,000	483,000	455,000
Voids available within stopes								1,547,600
Volume of paste deposited within stopes (98% fill)								1,516,600
Average/Total	2.17	83.0%	1.81	1.88	100%	2,344,100	483,000	
For placement within development voids								
10" slump - tailings only	2.07	79.6%	1.65	1.71	100%	162,100	-	98,000
Voids available within development								252,400
Volume of paste deposited within development								98,000
Leftover voids after fill								154,400
DMS remaining before final void fill							720,800	342,380
DMS remaining after final void fill (amount for waste dump)							460,800	218,880
Development rock to waste dump								276,500
Total DMS and development rock to waste dump								495,380

pHase GEOCHEMISTRY

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August 26, 2011

Canadian Zinc Corporation
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RE: Results of a Sensitivity Analysis Conducted to Evaluate a Greater Proportion of DMS in the Waste Rock Pile.

As requested I have conducted a sensitivity analysis related to likely effects of a greater proportion of dense media separation rock (or DMS) stored within the waste rock pile (WRP) for the proposed Prairie Creek Project.

Two aspects have been addressed here: 1) whether predicted contact water chemistry from the WRP would differ as a result of a greater DMS proportion and 2) whether the DMS placed in the WRP would introduce a chemical signature similar to process water. Each is addressed below.

1) Source term predictions for the soil covered WRP have been updated to reflect two scenarios as provided in a memorandum from CZN to AANDC on August 22, 2011 (CZN, 2011). Specifically the scenarios were described as a conservative scenario (Table1 in Attachment 1 of CZN memo) and an expected scenario (Table 2 in Attachment 1 of CZN memo). The scenarios differed in the volume of DMS to be placed in the waste dump, as summarized in Table 1 below and compared to those volumes used in the original WRP seepage predictions.

Table 1. Summary of DMS and Rock Proportions in Scenarios Evaluated.

	Volume (m^3)
Original Base Case Predictions	
DMS remaining after final void fill (amount for waste dump)	163,200
Development rock to waste dump	276,500
Total DMS and development rock to waste dump	439,700
Table 1: Conservative Scenario	
DMS remaining after final void fill (amount for waste dump)	261,060
Development rock to waste dump	276,500
Total DMS and development rock to waste dump	537,560
Table 2: Expected Scenario	
DMS remaining after final void fill (amount for waste dump)	218,880
Development rock to waste dump	276,500
Total DMS and development rock to waste dump	495,380

Source term predictions were conducted as described previously in pHase 2010a and 2010b. Other than DMS proportions, adjustments for grain size, temperature and flushing effects were as previously described. Thermodynamic equilibrium of possible mineral phases was completed using the geochemical modeling package PHREEQC as completed previously and comparisons to the analog water quality database was completed as was done in early predictions.

The results for both scenarios were used to calculate a relative percent difference (RPD) for each parameter as follows:

$$RPD = \frac{(X1-X2) \times 100}{(X1+X2) / 2}$$

RPD calculations are often used when assessing duplicate water samples. A general rule of thumb is that the RPD values should be within +/- 20%, i.e. the duplicate sample should be within +/- 20% of the results from the original samples. In effect, if two samples are within that range, they are considered to have acceptable reproducibility.

For this assessment, the RPD has been used to evaluate the variability that may be expected with the differing proportion of DMS in the WRP as compared to the original predictions. Results are provided in Table 2 below. Using the RPD values as guidance to what may constitute measurable differences, the conservative and expected scenarios are both slightly better with respect to As, Cu, Se and U and worse with respect to Sb, Hg, P and Zn.

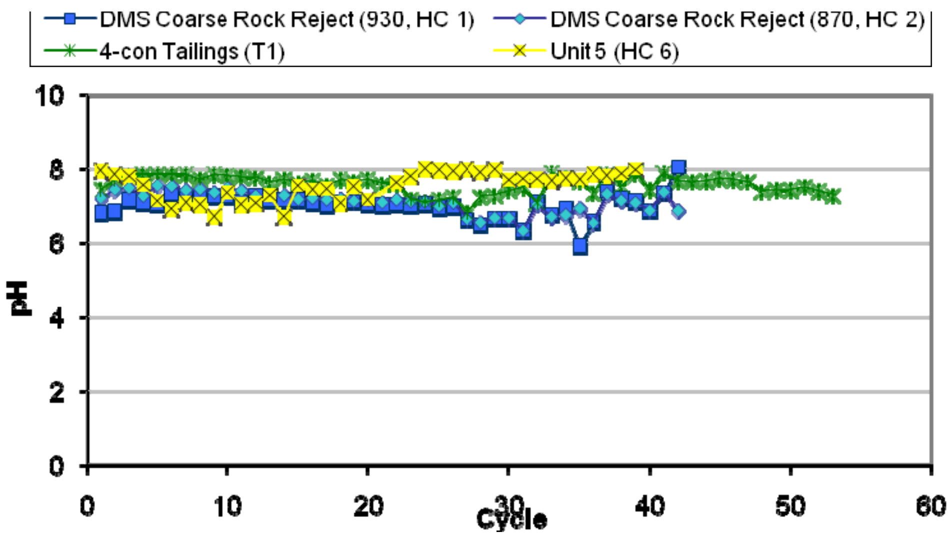
Differences however are still generally within the same range when presented as final predicted source terms which represent rounded values of the predicted concentrations to reflect the degree of certainty. In other words, within the accuracy of this type of prediction, the scenarios would be expected to produce generally the same water chemistry as the original predictions.

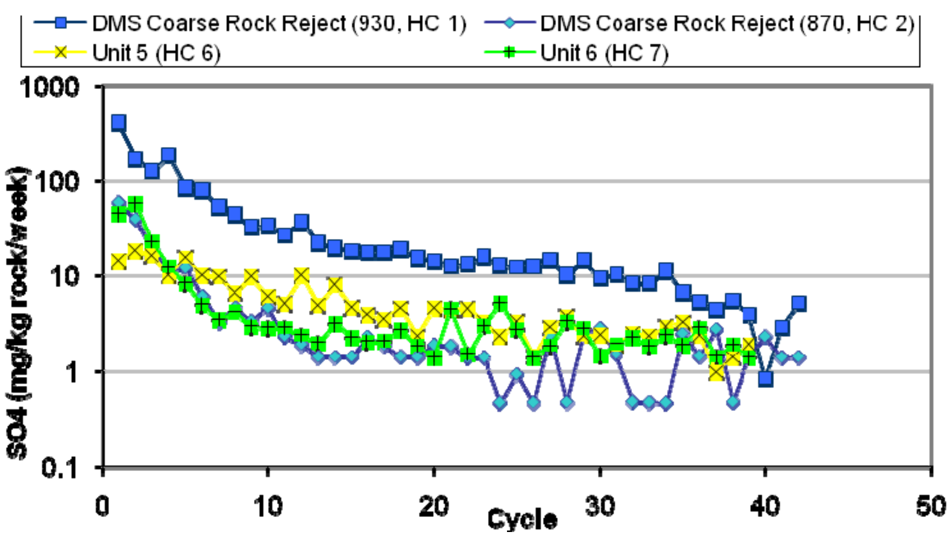
Table 2. Predicted Concentrations, RPDs and Final Source Term Values.

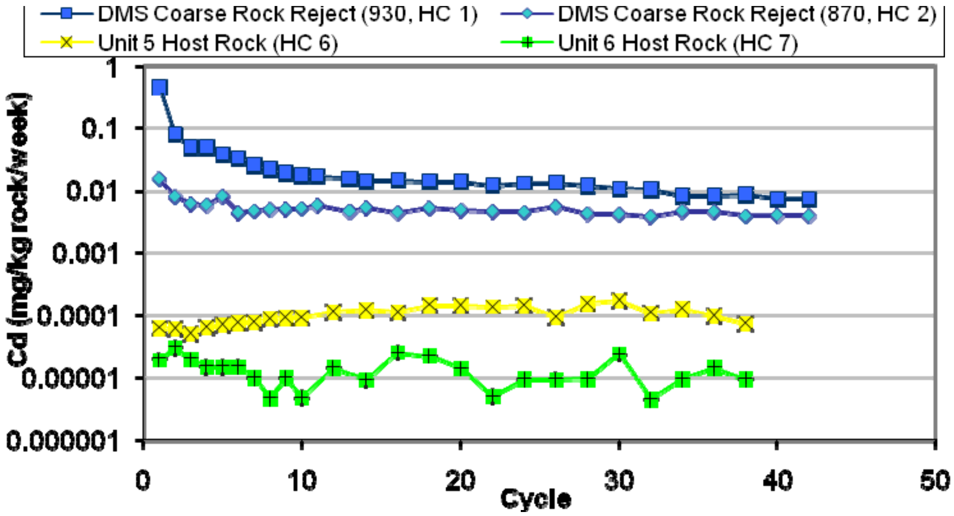
		Predicted Concentrations			Relative Percent Difference (RPD)		Final Predicted Source Term Concentrations		
		Original Base Case	Table 1: Conserv -ative Scenario	Table 2: Expected Scenario	Table 1: Conserv -ative Scenario	Table 2: Expected Scenario	Original Base Case	Table 1: Conserv -ative Scenario	Table 2: Expected Scenario
pH	s.u.	6.1	6.2	6.2	-2%	-2%	6 to 6.5	6 to 6.5	6 to 6.5
SO4	mg/L	1105	1050	1066	5%	4%	~1000 to 1500	~1,000 to 1,500	~1000 to 1500
Al	mg/L	0.14	0.13	0.13	7%	9%	<0.5	<0.5	<0.5
Sb	mg/L	0.61	1.0	1.0	-51%	-49%	~1	~1	~1
As	mg/L	0.059	0.047	0.046	21%	25%	<0.1	<0.1	<0.1
Cd	mg/L	0.162	0.17	0.16	-2%	2%	~0.2	~0.2	~0.2
Ca	mg/L	620	681	657	-9%	-6%	>500	>500	>500
Cu	mg/L	0.50	0.40	0.40	22%	22%	~0.5	~0.5	~0.5
Fe	mg/L	0.0094	0.0080	0.0076	16%	21%	<0.05	<0.05	<0.05
Pb	mg/L	0.061	0.058	0.056	5%	7%	~0.05	~0.05	~0.05
Mg	mg/L	323	354	341	-9%	-6%	~300	~350	~350
Mn	mg/L	1.4	1.2	1.0	16%	34%	~2	~1	~1
Hg	mg/L	0.056	0.16	0.14	-96%	-83%	~0.05	~0.1	~0.1
Mo	mg/L	0.36	0.35	0.34	3%	7%	<0.5	<0.5	<0.5
P	mg/L	9.3	18	15	-64%	-49%	~10	~20	~15
Se	mg/L	0.18	0.15	0.13	22%	32%	~0.2	<0.2	<0.2
U	mg/L	0.13	0.077	0.077	52%	52%	~0.1	~0.1	~0.1
Zn	mg/L	5.8	27	26	-129%	-127%	~6	~25	~25

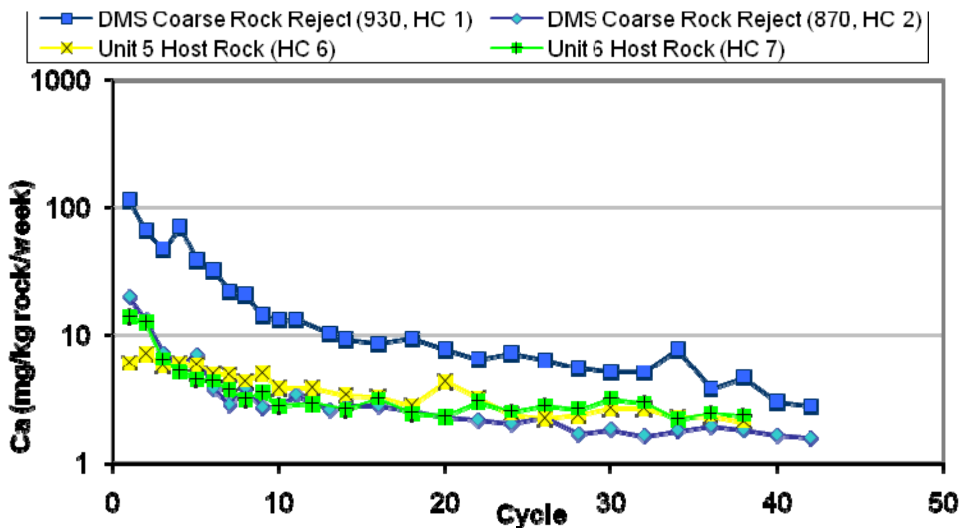
2) The second aspect that was requested was whether or not the DMS component in the WRP during operations would contribute a process water chemical signature to the seepage. The data available with which to assess this potential affect is the initial flush or leachate chemistry from the first few cycles of the humidity cell tests completed on both the DMS samples with a comparison to that from the development rock samples.

   Selected figures of metal release rates from the humidity cell program for these samples are provided below. Results indicate initial flushes of SO_4, Ca, Cd, Ca, Mn, P and Zn from the DMS compared to that expected from the development rock. Of these parameters, some of the flushes are only seen in the DMS produced from the 930 Level and likely represent soluble material that was present on the sample rather than process-specific effects. The only parameter that appears to have a clear initial flush in both DMS samples compared to the development rock samples and therefore might be related to process effects is P, and to a lesser extent Cd, Mn and Zn.






DMS Coarse Rock Reject (930, HC 1)
DMS Coarse Rock Reject (870, HC 2)
Unit 5 Host Rock (HC 6)
Unit 6 Host Rock (HC 7)
Cd (mg/kg rock/week)
1
0.1
0.01
0.001
0.0001
0.00001
0.000001
0
10
20
30
40
50
Cycle


DMS Coarse Rock Reject (930, HC 1)
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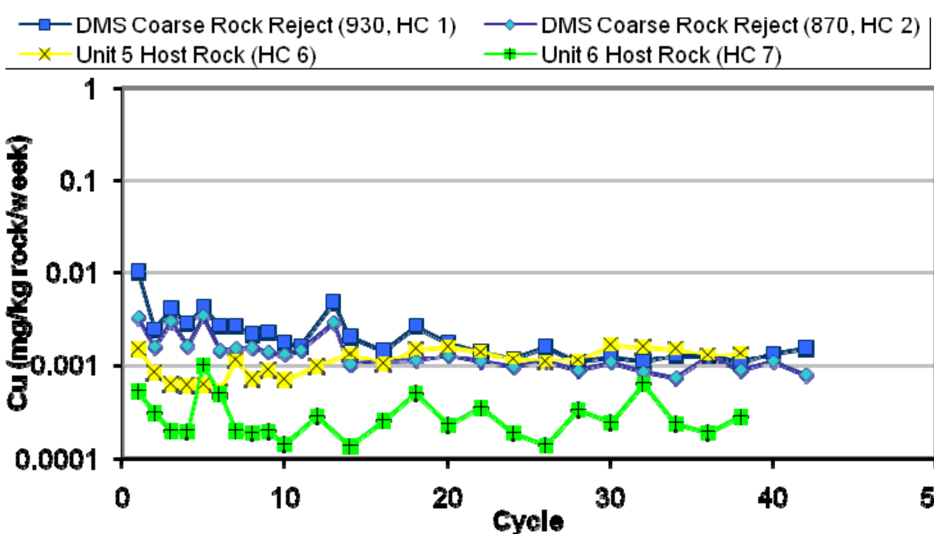
Unit 5 Host Rock (HC 6)
Unit 6 Host Rock (HC 7)
Ca (mg/kg rock/week)
1000
100
10
1
0
10
20
30
40
50
Cycle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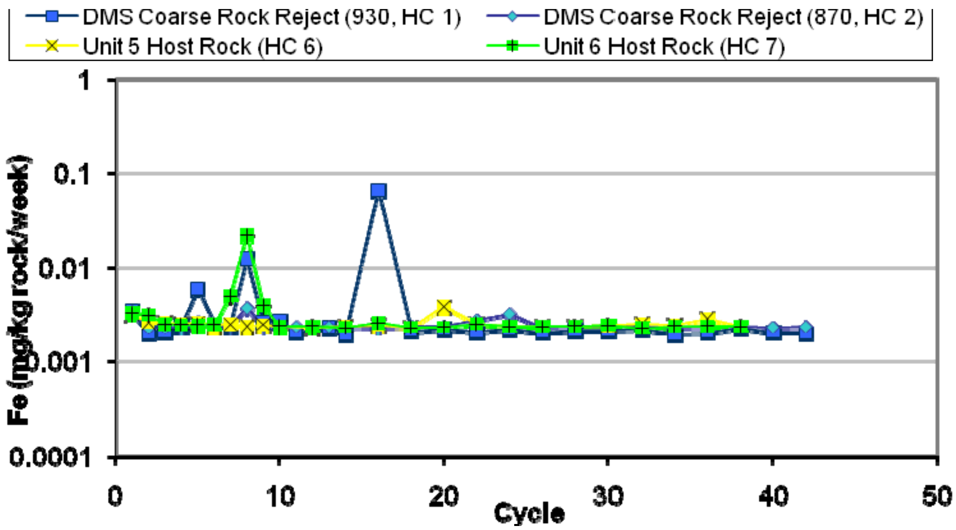
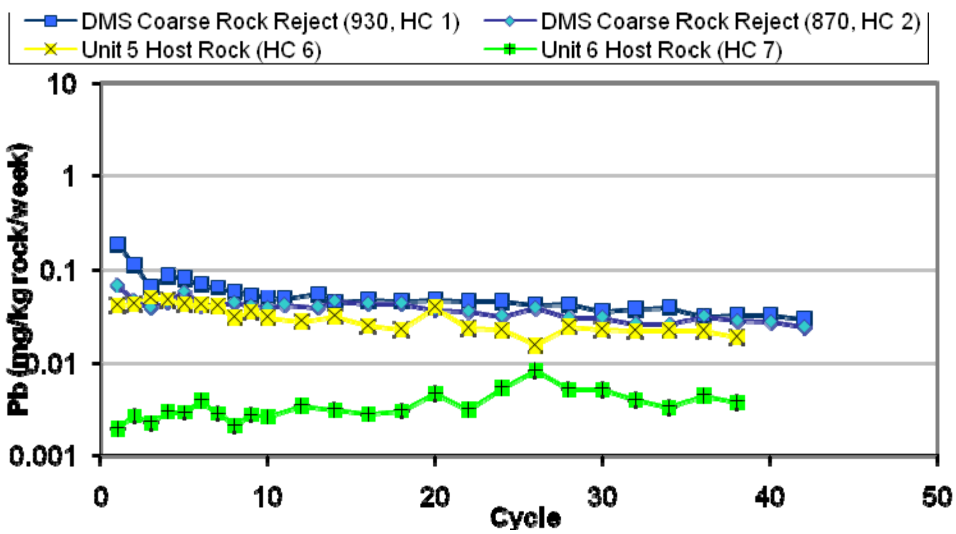
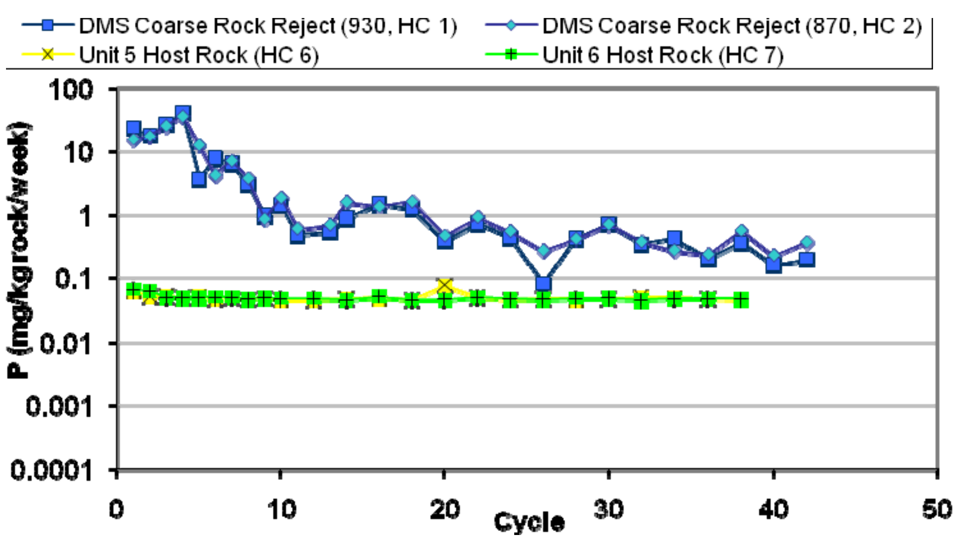
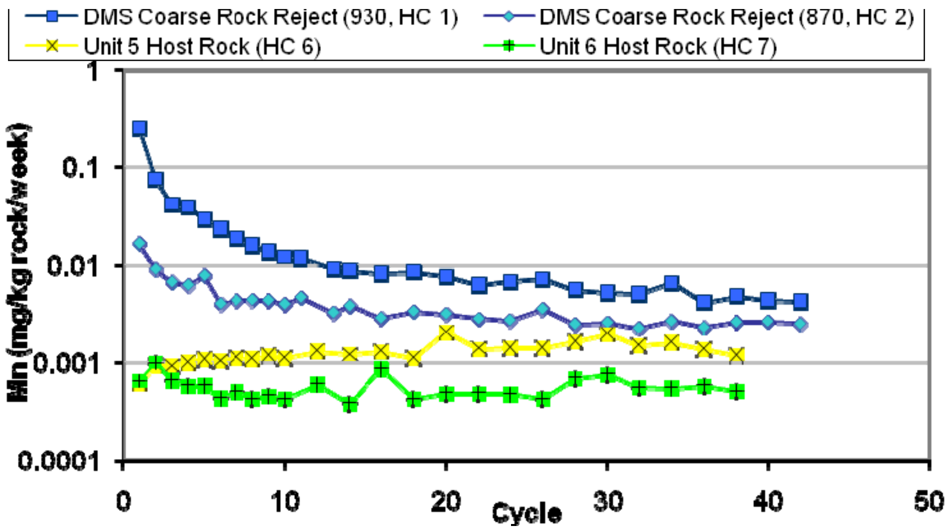
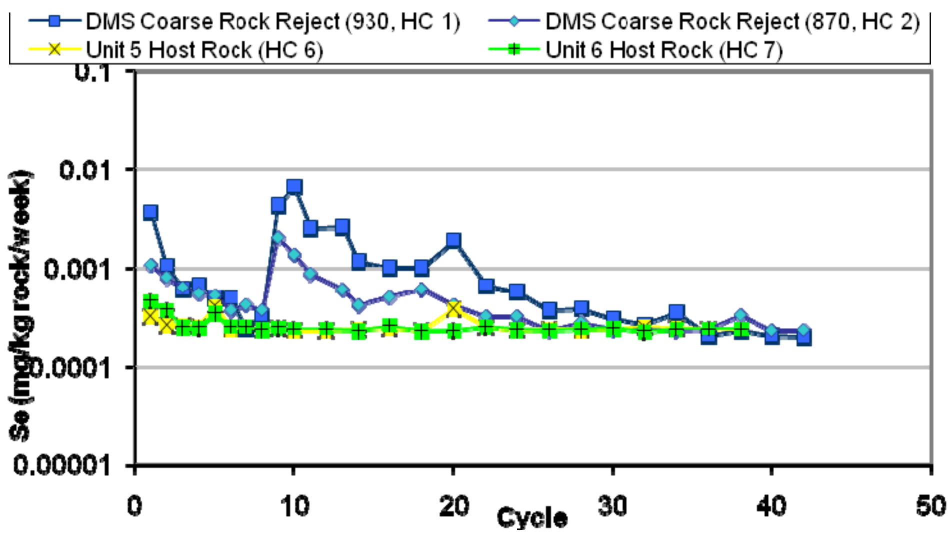
Cu (mg/kg rock/week)
1
0.1
0.01
0.001
0.0001
0
10
20
30
40
50
Cycle

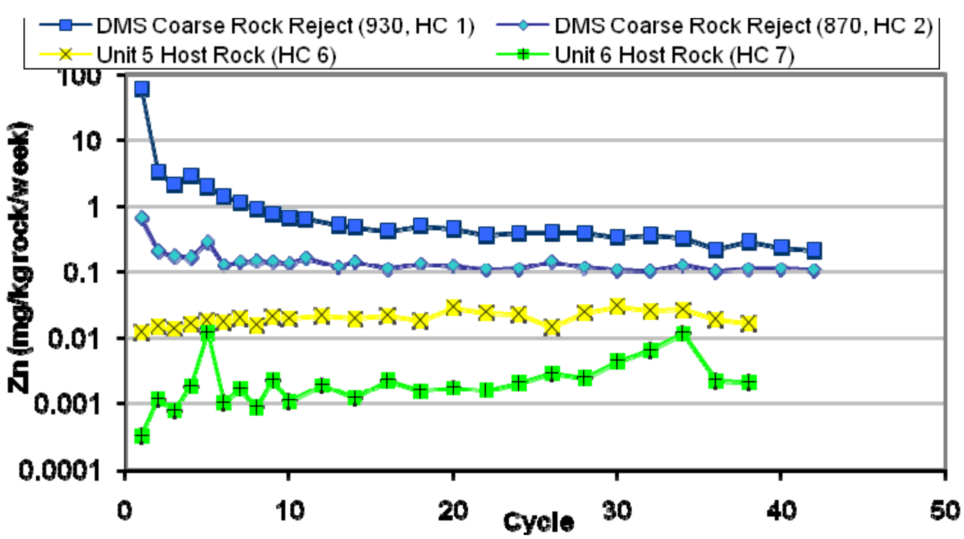

DMS Coarse Rock Reject (930, HC 1)
DMS Coarse Rock Reject (870, HC 2)
Unit 5 Host Rock (HC 6)
Unit 6 Host Rock (HC 7)
Fe (mg/kg rock/week)
1
0.1
0.01
0.001
0.0001
0
10
20
30
40
50
Cycle


DMS Coarse Rock Reject (930, HC 1)
DMS Coarse Rock Reject (870, HC 2)
Unit 5 Host Rock (HC 6)
Unit 6 Host Rock (HC 7)
Pb (mg/kg rock/week)
10
1
0.1
0.01
0.001
0
10
20
30
40
50
Cycle


DMS Coarse Rock Reject (930, HC 1)
DMS Coarse Rock Reject (870, HC 2)
Unit 5 Host Rock (HC 6)
Unit 6 Host Rock (HC 7)
P (mg/kg rock/week)
100
10
1
0.1
0.01
0.001
0.0001
0
10
20
30
40
50
Cycle


DMS Coarse Rock Reject (930, HC 1)
DMS Coarse Rock Reject (870, HC 2)
Unit 5 Host Rock (HC 6)
Unit 6 Host Rock (HC 7)
Mn (mg/kg rock/week)
1
0.1
0.01
0.001
0.0001
0
10
20
Cycle
30
40
50


DMS Coarse Rock Reject (930, HC 1)
DMS Coarse Rock Reject (870, HC 2)
Unit 5 Host Rock (HC 6)
Unit 6 Host Rock (HC 7)
Se (mg/kg rock/week)
0.1
0.01
0.001
0.0001
0.00001
0
10
20
Cycle
30
40
50


DMS Coarse Rock Reject (930, HC 1)
DMS Coarse Rock Reject (870, HC 2)
Unit 5 Host Rock (HC 6)
Unit 6 Host Rock (HC 7)
Zn (mg/kg rock/week)
100
10
1
0.1
0.01
0.001
0.0001
0
10
20
Cycle
30
40
50

Based on results of the humidity cell program therefore, there is not a clear indication that there will be a process related influence on the seepage chemistry during operations as a result of increased DMS proportion in the WRP.

I trust that the contents of this memo meet your current needs. If you need have any questions please don't hesitate to contact me.

Regards,
pHase Geochemistry Inc.

original signed

Shannon Shaw, M.Sc., P.Geo (BC)
Senior Geochemist

References:

Canadian Zinc Corporation (2011). Response to Brodie Aug 9 Comments on Paste Backfill. Memorandum to AANDC on August 22, 2011.

pHase Geochemistry Inc. (2010a). Source Term Water Quality Predictions, Prairie Creek Project, NWT Canada. Report prepared for Canadian Zinc Corporation, March 5, 2010.

pHase Geochemistry Inc. (2010b). Addendum to: Source Term Water Quality Predictions, Prairie Creek Project, NWT Canada. Report prepared for Canadian Zinc Corporation, September 5, 2010.