

June 30, 2006

RECEIVED

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Director – Air Quality  
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Division of Air and Water Quality  
555 Cordova St.  
Anchorage Alaska 99501

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DEC  
Division of Air Quality  
Director's Office

RE: Red Dog Fugitive Dust Update No. 5 – 2<sup>nd</sup> Quarter 2006

Dear Mr. Chapple:

Please find enclosed Teck Cominco Alaska's (TCAK), Red Dog Mine Fugitive Dust Quarterly Update Report as described in Section 6 of the Memorandum of Understanding (MOU) between the Alaska Department of Environmental Conservation (ADEC) and TCAK. The report covers the period of April through June 2006.

## 1. Studies

### Particle Fate Analysis

A preliminary report on the analysis and quantitative scanning electron microscopic (SEM) and mineral liberation analyzer (MLA) studies of the samples submitted to Trail Research last quarter was received during the first quarter of 2006. A review of the report indicated that the wrong type of leachate was used to determine soluble lead, zinc and cadmium from the tundra soils. Another sample was taken and will be shipped to Trail Research to repeat the leach test with a more appropriate leachate. Preliminary results were also received from the second lab doing humidity cell testing. Final reports are expected in the third quarter 2006.

### Tundra "Soil" Sampling

Because of delays in the finalization of the DMTS fugitive dust Risk Management Plan TCAK will be unable to provide a site assessment plan to be conducted during the 2006 field season. TCAK plans to develop the assessment plan as soon as the DMTS fugitive dust Risk Management Plan is approved and perhaps have it ready for the 2007 field season.

### Mine Area Ecological Risk Evaluation

An evaluation of potential ecological effects of fugitive dust in the mine area has been undertaken as part of the closure planning process. The evaluation of current and predicted post-closure conditions was conducted using food web models developed in the DMTS risk assessment. Draft results of the evaluation were presented at a closure planning workshop in early April, and will be presented again at a follow-up workshop in Anchorage in late June.

Work is in progress preparing an appendix to the closure plan describing the mine area ecological risk evaluation.

**2. Ambient and Fugitive Monitoring**

Total Suspended Particulate Ambient Air Monitoring

TCAK continues to monitor Total Suspended Particulates (TSP), airborne lead, and airborne zinc using Rupprecht & Patashnick 1400 AB TEOM ambient particulate monitors (TEOM) equipped with TSP Inlets and Automatic Cartridge Collection Units (ACCU). The monitoring results, by quarter, are provided below.

<b>Table-1</b>						
<b>Red Dog Mine</b>						
<b>Quarterly TSP Lead Concentration</b>						
<b>(R&amp;P 1440AB TEOM Data)</b>						
	<b>PAC TEOM Site</b>			<b>Tailings Dam TEOM Site</b>		
	<b>Average (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Minimum (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Maximum (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Average (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Minimum (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Maximum (<math>\mu\text{g}/\text{m}^3</math>)</b>
1 <sup>st</sup> Quarter 2005	0.7	0.07	2.4	0.3	0.07	0.8
2 <sup>nd</sup> Quarter 2005	0.6	0.02	2.4	0.2	0.02	0.5
3 <sup>rd</sup> Quarter 2005	0.3	0.01	2.0	0.1	0.01	0.6
4 <sup>th</sup> Quarter 2005	0.5	0.09	2.7	0.4	0.01	1.5
1 <sup>st</sup> Quarter 2006	0.9	0.06	6.1	0.4	0.01	1.3

Vegetation Monitoring

ABR Inc. of Fairbanks was awarded the contract for the study of the fugitive dust impacts on vegetation. They will also produce a vegetative community map. Field work began June 25, 2006.

**3. Engineered Controls**

Gyratory and Jaw Crusher Dump Pocket Baghouses

The gyratory crusher dump baghouse began testing on June 7, 2006 but has not been officially commissioned. The jaw crusher dump baghouse construction was begun this quarter.

Coarse Ore Stockpile Building (COSB) Baghouse

No change in status since last quarterly report.

Mine CSB/Truck Loading Facility Fugitive Dust Reduction Review

Testing of the prototype baghouse extended through the second quarter.

#### **4. Source Apportionment and Particle Deposition Modeling**

##### Source Contribution and Modeling Plan

SENES has completed an internal review of the detailed emissions estimates for each of the time frames (1994, 2000, 2003 and current). There are several assumptions that will have to be reviewed with Teck Cominco staff, to ensure the emission estimates are an appropriate reflection of each model time frame (for example, the extent of the exposed tailings). The supporting document that accompanies the calculations is currently undergoing review. The package of the emissions estimates and supporting document will be submitted to Teck Cominco next week so that a review of the emissions estimates and assumptions can take place.

Source coordinates for road sources have been developed. These will be used for source definition in the air dispersion modeling. The model input files for each time frame are in development. The data (raw meteorological data, detail terrain data, land use data etc.) are being processed for the development of the CALMET files.

#### **5. Measurement of Improvement**

Monitoring plans have not been developed. They are contingent on studies currently underway.

#### **6. Quarterly Reports and Biannual Meetings**

The biannual meeting was held on May 9, 2006 at the ADEC Anchorage Office.

If you have any questions, concerns, or require any additional information regarding this report, please contact Mr. Jim Kulas at 907-426-9129 / [jim.kulas@teckcominco.com](mailto:jim.kulas@teckcominco.com) or Mr. Wayne Hall at 907-426-9259 / [wayne.hall@teckcominco.com](mailto:wayne.hall@teckcominco.com).

Sincerely,  
Teck Cominco Alaska Incorporated



John B. Knapp  
General Manager