

March 31, 2005

Tom Chapple
Director – Air Quality
Alaska Department of Environmental Conservation
Division of Air and Water Quality
555 Cordova St.
Anchorage Alaska 99501

RE: Red Dog Fugitive Dust Update No. 4 – 1st 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 January through March 2006.

1. Studies

Particle Fate Analysis

Analysis and quantitative scanning electron microscopic (SEM) and mineral liberation analyzer (MLA) studies of the samples submitted to Trail Research last quarter were underway during the first quarter of 2006. Sample splits were submitted to a second lab for humidity cell testing.

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 2005 monitoring results, by quarter, are provided below.

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

TCAK committed in Section 2.1 of the MOU to conduct a study comparing the collection efficiency of a Wedding Hi-Vol and an R&P 1400AB TEOM. The attached report titled *Particle Collection Efficiency Difference of a Hi-Vol Particulate Collection System and an R&P 1400AB Particulate Collection System - March 2006* satisfies this commitment. The primary findings of the comparison study indicate that the TEOM collection efficiency is approximately 43% that of the Hi-Vol system. The relative differences are summarized below.

$$\begin{aligned} \text{TEOM TSP} &= 0.43 * \text{Hi-Vol TSP} \\ \text{TEOM Lead} &= 0.42 * \text{Hi-Vol Lead} \\ \text{TEOM Zinc} &= (0.42 * \text{Hi-Vol Zinc}) - 0.18 \end{aligned}$$

A comparison of the historic Hi-Vol results to the adjusted annual TEOM results, using the above factors, indicates a continued downward trend in TSP lead concentrations as seen in the following table. Additionally, a significant increase in production has occurred from 1994 to 2005, which should be taken in to consideration when reviewing the data.

Red Dog Mine Annual Average TSP-Lead Concentration			
Year	PAC Hi-Vol $\mu\text{g}/\text{m}^3$	PAC TEOM $\mu\text{g}/\text{m}^3$	Tailing Dam TEOM $\mu\text{g}/\text{m}^3$
1992	2.2	--	--
1993	1.4	--	--
1994	1.6	--	--
2004	--	--	0.7*
2005	--	1.2*	0.7*

* TEOM results adjusted for comparison to historic Hi-Vol data.

Section 2.1 of the MOU commits to the reporting of the 2005 Total Suspended Particulate, lead and zinc sampling conducted using the R&P 1400 AB monitors. The attached report titled *Red Dog Mine – Total Suspended Particulates, Lead and Zinc Concentrations January 1, 2005 to December 31, 2005 – March 2006* satisfies this commitment.

Vegetation Monitoring

Supplemental to the vegetation monitoring study, a second contract was let to map vegetation communities within the southern $\frac{3}{4}$ of the air permit boundary including a one mile buffer on the west boundary. This mapping will permit future monitoring of the more fugitive dust sensitive communities if warranted.

3. Engineered Controls

Gyratory and Jaw Crusher Dump Pocket Baghouses

Construction is currently underway but has experienced several delays related to poor crane mechanical availability and extreme winter weather conditions. Current focus is on structural, mechanical and component installation. The present estimate for completion of the project is late May.

Coarse Ore Stockpile Building (COSB) Baghouse

On March 23rd a minor permit application was submitted to ADEC titled *Coarse Ore Storage Building Baghouse*. TCAK anticipates a minor permit issuance in 2006 that will be very similar to the existing minor permit (No. AQ0290MSS02) for the gyratory and jaw crusher dump pocket baghouses. The intent of the COSB baghouse is to produce a slight negative pressure on the entire COSB structure.

Mine CSB/Truck Loading Facility Fugitive Dust Reduction Review

The prototype baghouse was installed in February. The operational testing of the baghouse performance is scheduled to run through June 2006. Following the completion of the testing program the data will be analyzed to determine whether the operation of a baghouse is technically feasible within the Mine CSB.

4. Source Apportionment and Particle Deposition Modeling

Source Contribution and Modeling Plan

The first pass at the emissions estimation has been conducted and is undergoing quality assurance review by the contractor. Also, the documentation for the emissions calculations is in progress. Following completion the emissions estimation will be reviewed internally by TCAK.

Additionally, preliminary work is underway setting up the dispersion model calculations (preparing the meteorological and terrain data etc.), but the model will not be run until the emission estimates have been fully reviewed and finalized.

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 or Mr. Wayne Hall at 907-426-9259 / wayne.hall@teckcominco.com.

Sincerely,
Teck Cominco Alaska Incorporated

John B. Knapp
General Manager