

2007-01  
CCGS *JP Tully*  
Dimethylsulfide (DMS) Report  
February 7, 2007 to February 27, 2007

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## **1. Sample Collection**

Samples were collected from all major stations (P4, P12, P16, P20, P26) for DMS.

### **1.1 DMS**

Thirteen water samples from various depths (200m, 175m, 100m, 75m, 50m, 40m, 30m, 25m, 20m, 15m, 10m, 5m, surface) were collected at each station in 250mL ground glass stoppered bottles. Samples were stored in the dark and removed one at a time before analysis.

## **2. Analysis**

### **2.1 DMS**

A sample was pre-filtered under gravity with GF/F filters prior to being loaded under vacuum into the 20mL calibration vessel. From there it was transferred to the stripper and purged with UHP Nitrogen for 10 minutes at ~100mL/min. The DMS was extracted from the water and absorbed onto a Tenax TA trap kept at -80°C. The trap was subsequently desorbed at 100°C (with a dewar containing boiling water) onto a Chromasorb 330 column which eluted to a Flame Photometric Detector (FPD). All samples were run immediately after being collected.

## **3. Calibration**

### **3.1 DMS**

A four level calibration table was used for calculating the concentrations of DMS. The standards were prepared in water and run under the same conditions as described above, for the samples. Normally a continuing calibration standard is run after all samples from a station have been run or every 12 hours, whichever comes first, to ensure the calibration curve is still within acceptable limits.

## **4. Quality Control**

### **4.1 DMS**

System blanks and duplicates were run approximately every 13 samples to ensure the system remained free of contamination and had acceptable reproducibility. All blanks were non-detectable and duplicates did not differ by more than 7% (well within the acceptable limits of 20%). Stripping efficiency was evaluated at the beginning of the cruise and was proven to be acceptable at over 95%.

## **5. Data & Results**

### **5.1 DMS**

This is the second cruise where DMS was detected at 200m during the mid-day cast. The phenomenon was first detected in 2006-15 at the same station and at the same time. For this reason one has to assume that the DMS is indeed being detected at never before depths. Future analysis at P26 should include sample collection at a depth lower than 200m to get a better representation of the data. Like the cruise last year no such contamination at P26 was noticed in the cast before (morning) or the one after (evening).

## **6. Conclusions**

### **6.1 DMS**

Except for the detectable DMS on deep depths for the one cast, the analysis was successful and predictable.