

## MEMORANDUM

**TO** Dawn MacNeil, STPA  
**FROM** Dianne Theriault  
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**DATE** 10<sup>th</sup> December, 2008

**FILE NO.** S-1244-08  
**SHIFT:** 0630 to 1730  
**CC:** Shawn Bernon, STPA  
Wilfred Kaiser, STPA  
Terry Smith, ALL-TECH  
**STPA NO.** COCW-0023

**SUBJECT: 9<sup>th</sup> December, 2008, Real-time Air Monitoring Results  
Sydney Tar Ponds Agency – Coke Ovens Vertical Cutoff Walls  
FINAL REPORT**

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Attached is a summary of Real-time particulate (as PM<sub>10</sub>) results for air monitoring performed on the 9<sup>th</sup> of December, 2008. Colin MacIsaac and Reg Peters of ALL-TECH Environmental Services Cape Breton Limited (ALL-TECH) performed all air monitoring activities.

Weather conditions on the day of sampling:  
- Mainly cloudy with sunny periods, flurries  
- Temperature: approximately -4°C  
- Wind Direction: West to Northwest

**Comments:** *ALL-TECH was on-Site at 0630 and sampling began as soon as there was site activity. Air monitoring was performed during EarthTech's construction activities.*

All downwind and upwind measurements of PM<sub>10</sub> were below the established Site Action Level for this parameter of 155 µg/m<sup>3</sup>.

All downwind and upwind measurements of Total Volatile Organic Compounds (TVOC) were below the established Site Action Level for this parameter of 0.66 ppm. Each measurement is the average of a 15 minute sample. A minimum of 2 samples were taken downwind and 1 sample upwind every hour. All measurements were found to be below the detection limit of the instrument. Levels above detection limit will be noted in the table below.

Due to operational criteria, during periods of precipitation (snow and rain) and high humidity, TVOC sampling is halted and resumes after the precipitation has ended.

This report has been prepared by Colin MacIsaac and reviewed by Dianne Theriault. If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,



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Dianne Theriault, B.Tech  
Environmental Technologist  
**ALL-TECH Environmental Services Cape Breton Ltd.**

Copied via e-mail:

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**Real-time Airborne PM<sub>10</sub> Concentration Results**  
**Sydney Tar Ponds Agency – Coke Ovens Vertical Cutoff Walls**  
**9<sup>th</sup> December, 2008**

<b>Sample No. &amp; Air Monitoring Location</b>	<b>Time of Day</b>	<b>PM<sub>10</sub> Action Level (µg/m<sup>3</sup>)</b>	<b>Average Result (µg/m<sup>3</sup>)</b>	<b>Wind Direction</b>	<b>Relative Position</b>	<b>Description of Activity</b>	<b>Observations that may affect sample</b>
1 70m South of Spar Road, Spar Extension intersection	0700	155	15	West	Upwind	Background	No observations seen to affect sampling integrity
2 100m Southwest of Lingan Road and Spar Road intersection	0700	155	20	West	Downwind	No activity observed on site	No observations seen to affect sampling integrity
3 100m Southwest of Lingan Road and Spar Road intersection	0725	155	17	West	Downwind	Machines moving material	No observations seen to affect sampling integrity
4 70m South of Spar Road, Spar Extension intersection	0800	155	6	West	Upwind	Background	No observations seen to affect sampling integrity
5 100m Southwest of Lingan Road and Spar Road intersection	0800	155	14	West	Downwind	Machines moving material	No observations seen to affect sampling integrity

<b>Sample No. &amp; Air Monitoring Location</b>	<b>Time of Day</b>	<b>PM<sub>10</sub> Action Level (µg/m<sup>3</sup>)</b>	<b>Average Result (µg/m<sup>3</sup>)</b>	<b>Wind Direction</b>	<b>Relative Position</b>	<b>Description of Activity</b>	<b>Observations that may affect sample</b>
6 100m Southwest of Lingan Road and Spar Road intersection	0830	155	9	West	Downwind	Machines moving material	No observations seen to affect sampling integrity
7 70m South of Spar Road, Spar Extension intersection	0900	155	11	West	Upwind	Background	No observations seen to affect sampling integrity
8 100m Southwest of Lingan Road and Spar Road intersection	0900	155	15	West	Downwind	Machines moving material	No observations seen to affect sampling integrity
9 100m Southwest of Lingan Road and Spar Road intersection	0940	155	11	West	Downwind	Machines moving material	No observations seen to affect sampling integrity
10 70m South of Spar Road, Spar Extension intersection	1000	155	10	West	Upwind	Background	No observations seen to affect sampling integrity
11 100m Southwest of Lingan Road and Spar Road intersection	1000	155	21	West	Downwind	Machines moving material	No observations seen to affect sampling integrity

<b>Sample No. &amp; Air Monitoring Location</b>	<b>Time of Day</b>	<b>PM<sub>10</sub> Action Level (µg/m<sup>3</sup>)</b>	<b>Average Result (µg/m<sup>3</sup>)</b>	<b>Wind Direction</b>	<b>Relative Position</b>	<b>Description of Activity</b>	<b>Observations that may affect sample</b>
12 100m Southwest of Lingan Road and Spar Road intersection	1030	155	18	West	Downwind	Machines moving material	No observations seen to affect sampling integrity
13 20m South of Spar Road, Spar Extension intersection	1100	155	10	Northwest	Upwind	Background	No observations seen to affect sampling integrity
14 80m Southwest of Lingan Road and Spar Road intersection	1100	155	12	Northwest	Downwind	Machines moving material	No observations seen to affect sampling integrity
15 80m Southwest of Lingan Road and Spar Road intersection	1120	155	19	Northwest	Downwind	Machines moving material	No observations seen to affect sampling integrity
16 20m South of Spar Road, Spar Extension intersection	1200	155	15	Northwest	Upwind	Background	No observations seen to affect sampling integrity
17 80m Southwest of Lingan Road and Spar Road intersection	1200	155	12	Northwest	Downwind	Machines moving material	No observations seen to affect sampling integrity

<b>Sample No. &amp; Air Monitoring Location</b>	<b>Time of Day</b>	<b>PM<sub>10</sub> Action Level (µg/m<sup>3</sup>)</b>	<b>Average Result (µg/m<sup>3</sup>)</b>	<b>Wind Direction</b>	<b>Relative Position</b>	<b>Description of Activity</b>	<b>Observations that may affect sample</b>
18 80m Southwest of Lingan Road and Spar Road intersection	1245	155	17	Northwest	Downwind	Machines moving material	No observations seen to affect sampling integrity
19 20m South of Spar Road, Spar Extension intersection	1300	155	14	Northwest	Upwind	Background	No observations seen to affect sampling integrity
20 80m Southwest of Lingan Road and Spar Road intersection	1300	155	93	Northwest	Downwind	Machines moving material	Dust from loading cement mixer
21 80m Southwest of Lingan Road and Spar Road intersection	1325	155	30	Northwest	Downwind	Machines moving material	Dust from loading cement mixer
22 20m South of Spar Road, Spar Extension intersection	1400	155	14	Northwest	Upwind	Background	No observations seen to affect sampling integrity
23 80m Southwest of Lingan Road and Spar Road intersection	1400	155	14	Northwest	Downwind	No activity observed	No observations seen to affect sampling integrity

Sample No. & Air Monitoring Location	Time of Day	PM <sub>10</sub> Action Level (µg/m <sup>3</sup> )	Average Result (µg/m <sup>3</sup> )	Wind Direction	Relative Position	Description of Activity	Observations that may affect sample
24 80m Southwest of Lingan Road and Spar Road intersection	1415	155	11	Northwest	Downwind	Machines moving material	No observations seen to affect sampling integrity
25 20m South of Spar Road, Spar Extension intersection	1500	155	16	Northwest	Upwind	Background	No observations seen to affect sampling integrity
26 80m Southwest of Lingan Road and Spar Road intersection	1500	155	10	Northwest	Downwind	Machines moving material	No observations seen to affect sampling integrity
27 80m Southwest of Lingan Road and Spar Road intersection	1540	155	9	Northwest	Downwind	Machines moving material	No observations seen to affect sampling integrity
28 20m South of Spar Road, Spar Extension intersection	1600	155	24	Northwest	Upwind	Background	No observations seen to affect sampling integrity
29 80m Southwest of Lingan Road and Spar Road intersection	1600	155	12	Northwest	Downwind	Machines moving material	No observations seen to affect sampling integrity
30 80m Southwest of Lingan Road and Spar Road intersection	1645	155	10	Northwest	Downwind	No activity observed on site	No observations seen to affect sampling integrity

**Notes:** Air sample duration for each monitoring event was 15 minutes.

### Comparison of Downwind Daily Results for Dust Budget

Location	Duration	Dust Budget Value ( $\mu\text{g}/\text{m}^3$ )	Dust Budget Exceedance Value ( $\mu\text{g}/\text{m}^3$ )
100m Southwest of Lingan Road and Spar Road intersection	0700 to 0759	18	990
100m Southwest of Lingan Road and Spar Road intersection	0800 to 0859	30	990
100m Southwest of Lingan Road and Spar Road intersection	0900 to 0959	43	990
100m Southwest of Lingan Road and Spar Road intersection	1000 to 1059	63	990
80m Southwest of Lingan Road and Spar Road intersection	1100 to 1159	79	990
80m Southwest of Lingan Road and Spar Road intersection	1200 to 1259	94	990
80m Southwest of Lingan Road and Spar Road intersection	1300 to 1359	156	990
80m Southwest of Lingan Road and Spar Road intersection	1400 to 1459	169	990



Location	Duration	Dust Budget Value ( $\mu\text{g}/\text{m}^3$ )	Dust Budget Exceedance Value ( $\mu\text{g}/\text{m}^3$ )
80m Southwest of Lingan Road and Spar Road intersection	1500 to 1559	178	990
80m Southwest of Lingan Road and Spar Road intersection	1600 to 1659	189	990

### VOC Monitoring

Monitoring Method	Yes	No
Sustained Odours Observed		•
P.I.D. Required	•	