

## MEMORANDUM

<b>TO</b>	Dawn MacNeil, STPA	<b>FILE NO.</b>	S-1332-07
<b>FROM</b>	Dianne Theriault	<b>SHIFT:</b>	0630 to 1830
<b>TEL</b>	(902) 539-3012	<b>CC:</b>	Shawn Bernon, STPA Wilfred Kaiser, STPA Terry Smith, ALL-TECH
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<b>DATE</b>	10 <sup>th</sup> June, 2009	<b>STPA NO.</b>	<b>COCW-0050</b>

**SUBJECT: 9<sup>th</sup> June, 2009 Real-time Air Monitoring Results  
Sydney Tar Ponds Agency – Vertical Cut-off 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 June, 2009. Keith Neville and Nigel MacLean of ALL-TECH Environmental Services Cape Breton Limited (ALL-TECH) performed all air monitoring activities.

Weather conditions on the day of sampling:

- Mainly cloudy
- Temperature: approximately 9°C
- Wind Direction: North

**Comments:** *ALL-TECH was on-Site at 0630 hours and sampling began as soon as there was site activity. Air monitoring was performed during AECOM'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 Nigel MacLean 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 – Vertical Cut-off Walls**  
**9<sup>th</sup> June, 2009**

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
1 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	0700	155	5	North	Upwind	Background	No observations seen to affect sampling integrity
2 75m Northeast of Salvation Army (N46°08.765') (W060°10.533')	0700	155	19	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
3 75m Northeast of Salvation Army (N46°08.765') (W060°10.533')	0730	155	22	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
4 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	0800	155	11	North	Upwind	Background	No observations seen to affect sampling integrity
5 75m Northeast of Salvation Army (N46°08.765') (W060°10.533')	0800	155	17	North	Downwind	Excavators and dump trucks operating	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
6 75m Northeast of Salvation Army (N46°08.765') (W060°10.533')	0845	155	70	North	Downwind	Excavators and dump trucks operating	Dust from trucks dumping material
7 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	0900	155	6	North	Upwind	Background	No observations seen to affect sampling integrity
8 75m Northeast of Salvation Army (N46°08.765') (W060°10.533')	0900	155	34	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
9 75m Northeast of Salvation Army (N46°08.765') (W060°10.533')	0915	155	13	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
10 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	1000	155	4	North	Upwind	Background	No observations seen to affect sampling integrity
11 75m Northeast of Salvation Army (N46°08.765') (W060°10.533')	1000	155	15	North	Downwind	Excavators and dump trucks operating	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
12 75m Northeast of Salvation Army (N46°08.765') (W060°10.533')	1020	155	13	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
13 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	1100	155	5	North	Upwind	Background	No observations seen to affect sampling integrity
14 75m Northeast of Salvation Army (N46°08.765') (W060°10.533')	1100	155	21	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
15 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1130	155	10	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
16 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	1200	155	6	North	Upwind	Background	No observations seen to affect sampling integrity
17 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1200	155	7	North	Downwind	Excavators and dump trucks operating	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
18 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1240	155	14	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
19 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	1300	155	9	North	Upwind	Background	No observations seen to affect sampling integrity
20 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1300	155	8	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
21 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1335	155	5	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
22 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	1400	155	6	North	Upwind	Background	No observations seen to affect sampling integrity
23 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1400	155	17	North	Downwind	Excavators and dump trucks operating	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 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1445	155	12	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
25 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	1500	155	9	North	Upwind	Background	No observations seen to affect sampling integrity
26 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1500	155	10	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
27 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1525	155	10	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
28 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	1600	155	19	North	Upwind	Background	No observations seen to affect sampling integrity
29 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1600	155	11	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
30 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1630	155	8	North	Downwind	Excavators and dump trucks operating	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
31 55m East of Lingan Rd. and Fredrick St. intersection (N46°09.104') (W060°10.564')	1700	155	8	North	Upwind	Background	No observations seen to affect sampling integrity
32 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1700	155	7	North	Downwind	Excavators and dump trucks operating	No observations seen to affect sampling integrity
33 150m Southeast of Salvation Army (N46°08.678') (W060°10.419')	1745	155	6	North	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 ( $\mu\text{g}/\text{m}^3$ )
75m Northeast of Salvation Army	0700 to 0759	21	990
75m Northeast of Salvation Army	0800 to 0859	65	990
75m Northeast of Salvation Army	0900 to 0959	89	990
75m Northeast of Salvation Army	1000 to 1059	103	990
75m Northeast / 150m Southeast of Salvation Army	1100 to 1159	119	990
150m Northeast of Salvation Army	1200 to 1259	130	990
150m Southeast of Salvation Army	1300 to 1359	137	990
150m Southeast of Salvation Army	1400 to 1459	149	990
150m Southeast of Salvation Army	1500 to 1559	159	990
150m Southeast of Salvation Army	1600 to 1659	169	990
150m Southeast of Salvation Army	1700 to 1759	176	990

### VOC Monitoring

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