

## MEMORANDUM

|             |                                |                 |                       |
|-------------|--------------------------------|-----------------|-----------------------|
| <b>TO</b>   | Dawn MacNeil, STPA             | <b>FILE NO.</b> | S-1207-16             |
| <b>FROM</b> | Dianne Theriault               | <b>SHIFT:</b>   | 0630 to 1815          |
| <b>TEL</b>  | (902) 539-3012                 | <b>CC:</b>      | Shawn Bernon, STPA    |
| <b>FAX</b>  | (902) 539-3381                 |                 | Wilfred Kaiser, STPA  |
| <b>DATE</b> | 24 <sup>th</sup> October, 2008 |                 | Terry Smith, ALL-TECH |
|             |                                | <b>STPA NO.</b> | <b>PS-0087</b>        |

**SUBJECT: 23<sup>rd</sup> October, 2008, Real-time Air Monitoring Results  
Sydney Tar Ponds Agency – South Pond Pilot Study  
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 23<sup>rd</sup> of October, 2008. Reg Peters and Tyler Rowe of ALL-TECH Environmental Services Cape Breton Limited (ALL-TECH), performed all air monitoring activities.

Weather conditions on the day of sampling:

- Sunny with cloudy periods
- Temperature: approximately 7°C
- Wind Direction: East to Northeast

**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 Tyler Rowe 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 – South Pond Pilot Study**  
**23<sup>rd</sup> October, 2008**

| 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<br>60m East of South Pond main gate.           | 0700        | 155  | 5                                   | East           | Upwind            | Background                   | No observations seen to affect sampling integrity |
| 2<br>Railway property, 40m South of Ferry Street | 0700        | 155  | 8                                   | East           | Downwind          | No activity observed on site | No observations seen to effect sampling integrity |
| 3<br>Railway property, 40m South of Ferry Street | 0740        | 155  | 5                                   | East           | Downwind          | No activity observed on site | No observations seen to effect sampling integrity |
| 4<br>60m East of South Pond main gate.           | 0800        | 155  | 1                                   | East           | Upwind            | Background                   | No observations seen to affect sampling integrity |
| 5<br>Railway property, 40m South of Ferry Street | 0800        | 155  | 4                                   | East           | Downwind          | No activity observed on site | No observations seen to effect sampling integrity |
| 6<br>Railway property, 40m South of Ferry Street | 0845        | 155  | 3                                   | East           | Downwind          | Excavator operating          | No observations seen to effect sampling integrity |
| 7<br>60m East of South Pond main gate.           | 0900        | 155  | 1                                   | East           | Upwind            | Background                   | 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>        |
|--|--------------------|--|--|-----------------------|--------------------------|--------------------------------|---|
| 8<br>Railway property, 40m South of Ferry Street           | 0900               | 155  | 3  | East                  | Downwind                 | Excavator operating            | No observations seen to effect sampling integrity |
| 9<br>Railway property, 40m South of Ferry Street           | 0945               | 155  | 1  | East                  | Downwind                 | Excavator operating            | No observations seen to effect sampling integrity |
| 10<br>60m East of South Pond main gate.                    | 1000               | 155  | 0  | East                  | Upwind                   | Background                     | No observations seen to affect sampling integrity |
| 11<br>Railway property, 40m South of Ferry Street          | 1000               | 155  | 1  | East                  | Downwind                 | Excavator operating            | No observations seen to effect sampling integrity |
| 12<br>120m Northeast of Intercolonial Street fixed station | 1035               | 155  | 5  | Northeast             | Downwind                 | Excavator operating            | No observations seen to effect sampling integrity |
| 13<br>Inglis Street, 15m North of Spar Road.               | 1100               | 155  | 5  | Northeast             | Upwind                   | Background                     | No observations seen to affect sampling integrity |
| 14<br>120m Northeast of Intercolonial Street fixed station | 1100               | 155  | 2  | Northeast             | Downwind                 | Excavator operating            | No observations seen to effect 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               |
|---|-------------|--|-------------------------------------|----------------|-------------------|------------------------------|---|
| 15<br>120m<br>Northeast of Intercolonial Street fixed station | 1140        | 155  | 5                                   | Northeast      | Downwind          | Excavator operating          | No observations seen to effect sampling integrity |
| 16<br>Inglis Street,<br>15m North of Spar Road.               | 1200        | 155  | 5                                   | Northeast      | Upwind            | Background                   | No observations seen to affect sampling integrity |
| 17<br>120m<br>Northeast of Intercolonial Street fixed station | 1200        | 155  | 6                                   | Northeast      | Downwind          | No activity observed on site | No observations seen to effect sampling integrity |
| 18<br>120m<br>Northeast of Intercolonial Street fixed station | 1230        | 155  | 6                                   | Northeast      | Downwind          | Excavator operating          | No observations seen to effect sampling integrity |
| 19<br>Inglis Street,<br>15m North of Spar Road.               | 1300        | 155  | 5                                   | Northeast      | Upwind            | Background                   | No observations seen to affect sampling integrity |
| 20<br>120m<br>Northeast of Intercolonial Street fixed station | 1300        | 155  | 6                                   | Northeast      | Downwind          | Excavator operating          | No observations seen to effect sampling integrity |
| 21<br>120m<br>Northeast of Intercolonial Street fixed station | 1315        | 155  | 7                                   | Northeast      | Downwind          | Excavator operating          | No observations seen to effect 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               |
|--|-------------|--|-------------------------------------|----------------|-------------------|-------------------------|---|
| 22<br>Inglis Street,<br>15m North of<br>Spar Road.                     | 1400        | 155  | 6                                   | Northeast      | Upwind            | Background              | No observations seen to affect sampling integrity |
| 23<br>120m<br>Northeast of<br>Intercolonial<br>Street fixed<br>station | 1400        | 155  | 6                                   | Northeast      | Downwind          | Excavator operating     | No observations seen to effect sampling integrity |
| 24<br>120m<br>Northeast of<br>Intercolonial<br>Street fixed<br>station | 1420        | 155  | 7                                   | Northeast      | Downwind          | Excavator operating     | No observations seen to effect sampling integrity |
| 25<br>Inglis Street,<br>15m North of<br>Spar Road.                     | 1500        | 155  | 6                                   | Northeast      | Upwind            | Background              | No observations seen to affect sampling integrity |
| 26<br>120m<br>Northeast of<br>Intercolonial<br>Street fixed<br>station | 1500        | 155  | 7                                   | Northeast      | Downwind          | Excavator operating     | No observations seen to effect sampling integrity |
| 27<br>120m<br>Northeast of<br>Intercolonial<br>Street fixed<br>station | 1540        | 155  | 7                                   | Northeast      | Downwind          | Excavator operating     | No observations seen to effect sampling integrity |
| 28<br>Inglis Street,<br>15m North of<br>Spar Road.                     | 1600        | 155  | 7                                   | Northeast      | Upwind            | Background              | 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               |
|---|-------------|--|-------------------------------------|----------------|-------------------|-------------------------|---|
| 29<br>120m<br>Northeast of Intercolonial Street fixed station | 1600        | 155  | 8                                   | Northeast      | Downwind          | Excavator operating     | No observations seen to effect sampling integrity |
| 30<br>120m<br>Northeast of Intercolonial Street fixed station | 1645        | 155  | 7                                   | Northeast      | Downwind          | Excavator operating     | No observations seen to effect sampling integrity |
| 31<br>Inglis Street,<br>15m North of Spar Road.               | 1700        | 155  | 7                                   | Northeast      | Upwind            | Background              | No observations seen to affect sampling integrity |
| 32<br>120m<br>Northeast of Intercolonial Street fixed station | 1700        | 155  | 7                                   | Northeast      | Downwind          | Excavator operating     | No observations seen to effect sampling integrity |
| 33<br>120m<br>Northeast of Intercolonial Street fixed station | 1730        | 155  | 7                                   | Northeast      | Downwind          | Excavator operating     | No observations seen to effect 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<br>( $\mu\text{g}/\text{m}^3$ ) | Dust Budget Exceedance Value ( $\mu\text{g}/\text{m}^3$ ) |
|---|-----------------|---|---|
| Railway property,<br>40m South of Ferry<br>Street   | 0700 to<br>0759 | 7   | 990   |
| Railway property,<br>40m South of Ferry<br>Street   | 0800 to<br>0859 | 11  | 990   |
| Railway property,<br>40m South of Ferry<br>Street   | 0900 to<br>0959 | 13  | 990   |
| Railway property,<br>40m South of Ferry<br>Street / 120m<br>Northeast of<br>Intercolonial Street<br>fixed station | 1000 to<br>1059 | 16  | 990   |
| 120m Northeast of<br>Intercolonial Street<br>fixed station  | 1100 to<br>1159 | 20  | 990   |
| 120m Northeast of<br>Intercolonial Street<br>fixed station  | 1200 to<br>1259 | 26  | 990   |
| 120m Northeast of<br>Intercolonial Street<br>fixed station  | 1300 to<br>1359 | 33  | 990   |
| 120m Northeast of<br>Intercolonial Street<br>fixed station  | 1400 to<br>1459 | 40  | 990   |
| 120m Northeast of<br>Intercolonial Street<br>fixed station  | 1500 to<br>1559 | 47  | 990   |
| 120m Northeast of<br>Intercolonial Street<br>fixed station  | 1600 to<br>1659 | 55  | 990   |



| <b>Location</b>                                      | <b>Duration</b> | <b>Dust Budget Value (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>Dust Budget Exceedance Value (<math>\mu\text{g}/\text{m}^3</math>)</b> |
|--|-----------------|--|---|
| 120m Northeast of Intercolonial Street fixed station | 1700 to 1759    | 62   | 990   |

### VOC Monitoring

| <b>Monitoring Method</b>  | <b>Yes</b> | <b>No</b> |
|---------------------------|------------|-----------|
| Sustained Odours Observed |            | •         |
| P.I.D. Required           | •          |           |