

## MEMORANDUM

|             |                                 |                 |                       |
|-------------|---------------------------------|-----------------|-----------------------|
| <b>TO</b>   | Dawn MacNeil, STPA              | <b>FILE NO.</b> | S-1074-17             |
| <b>FROM</b> | Grant Harrigan                  | <b>SHIFT:</b>   | 0630 to 1945          |
| <b>TEL</b>  | (902) 539-3012                  | <b>CC:</b>      | Shawn Bernon, STPA    |
| <b>FAX</b>  | (902) 539-3381                  |                 | Wilfred Kaiser, STPA  |
| <b>DATE</b> | 22 <sup>nd</sup> February, 2008 |                 | Terry Smith, ALL-TECH |
|             |                                 | <b>STPA NO.</b> | <b>CP-0074</b>        |

**SUBJECT: 21<sup>st</sup> February 2008, Real-time Air Monitoring Results  
Sydney Tar Ponds Agency – Cooling Pond  
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 21<sup>st</sup> of February 2008. Tyler Rowe and Reggie Peters, of ALL-TECH Environmental Services Cape Breton Limited (ALL-TECH), performed all air monitoring activities.

Weather conditions on the day of sampling:

- Sunny, scattered clouds
- Temperature: -7°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 well below the established Site Action Level for this parameter of 155 µg/m<sup>3</sup>.

Levels above detection limit will be noted in the table below. All downwind and upwind measurements of Total Volatile Organic Compounds (TVOC) were well 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.

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

This report has been prepared by Tyler Rowe and reviewed by Grant Harrigan. If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,



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Grant Harrigan, 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 – Cooling Pond**  
**21<sup>st</sup> February, 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<br>10m North of Intercolonial Street fixed station | 0700               | 155  | 7  | West                  | Upwind                   | Background                           | No observations seen to effect sampling integrity |
| 2<br>30m Southwest of STPA office                    | 0700               | 155  | 6  | West                  | Downwind                 | No activity                          | No observations seen to effect sampling integrity |
| 3<br>30m Southwest of STPA office                    | 0715               | 155  | 6  | West                  | Downwind                 | No activity                          | No observations seen to effect sampling integrity |
| 4<br>10m North of Intercolonial Street fixed station | 0800               | 155  | 5  | West                  | Upwind                   | Background                           | No observations seen to effect sampling integrity |
| 5<br>30m Southwest of STPA office                    | 0800               | 155  | 8  | West                  | Downwind                 | Excavators operating, trucks dumping | No observations seen to effect sampling integrity |
| 6<br>30m Southwest of STPA office                    | 0815               | 155  | 8  | West                  | Downwind                 | Excavators operating, trucks dumping | No observations seen to effect sampling integrity |
| 7<br>10m North of Intercolonial Street fixed station | 0900               | 155  | 3  | West                  | Upwind                   | Background                           | 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               |
|---|-------------|--|-------------------------------------|----------------|-------------------|--------------------------------------|---|
| 8<br>30m Southwest of STPA office                     | 0900        | 155  | 8                                   | West           | Downwind          | Excavators operating, trucks dumping | No observations seen to effect sampling integrity |
| 9<br>30m Southwest of STPA office                     | 0915        | 155  | 18                                  | West           | Downwind          | Excavators operating, trucks dumping | No observations seen to effect sampling integrity |
| 10<br>10m North of Intercolonial Street fixed station | 1000        | 155  | 3                                   | West           | Upwind            | Background                           | No observations seen to effect sampling integrity |
| 11<br>40m Southwest of STPA office                    | 1000        | 155  | 12                                  | West           | Downwind          | Excavators operating                 | No observations seen to effect sampling integrity |
| 12<br>40m Southwest of STPA office                    | 1015        | 155  | 13                                  | West           | Downwind          | Excavators operating                 | No observations seen to effect sampling integrity |
| 13<br>10m North of Intercolonial Street fixed station | 1100        | 155  | 2                                   | West           | Upwind            | Background                           | No observations seen to effect sampling integrity |
| 14<br>40m Southwest of STPA office                    | 1100        | 155  | 13                                  | West           | Downwind          | Excavators operating                 | No observations seen to effect sampling integrity |
| 15<br>40m Southwest of STPA office                    | 1116        | 155  | 9                                   | West           | Downwind          | Excavators 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               |
|--|-------------|--|-------------------------------------|----------------|-------------------|-------------------------|---|
| 16<br>100m North of Intercolonial Street fixed station | 1200        | 155  | 1                                   | West           | Upwind            | Background              | No observations seen to effect sampling integrity |
| 17<br>40m Southwest of STPA office                     | 1200        | 155  | 10                                  | West           | Downwind          | No activity             | No observations seen to effect sampling integrity |
| 18<br>40m Southwest of STPA office                     | 1215        | 155  | 19                                  | West           | Downwind          | No activity             | No observations seen to effect sampling integrity |
| 19<br>100m North of Intercolonial Street fixed station | 1300        | 155  | 1                                   | West           | Upwind            | Background              | No observations seen to effect sampling integrity |
| 20<br>40m Southwest of STPA office                     | 1300        | 155  | 21                                  | West           | Downwind          | Excavators operating    | No observations seen to effect sampling integrity |
| 21<br>40m Southwest of STPA office                     | 1316        | 155  | 60                                  | West           | Downwind          | Excavators operating    | Visible dust from site                            |
| 22<br>150m North of Intercolonial Street fixed station | 1400        | 155  | 6                                   | Northwest      | Upwind            | Background              | No observations seen to effect sampling integrity |
| 23<br>90m Southwest of STPA office                     | 1400        | 155  | 32                                  | Northwest      | Downwind          | Excavators 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               |
|---|-------------|--|-------------------------------------|----------------|-------------------|-------------------------|---|
| 24<br>90m Southwest of STPA office                    | 1415        | 155  | 28                                  | Northwest      | Downwind          | Excavators operating    | No observations seen to effect sampling integrity |
| 25<br>10m North of Intercolonial Street fixed station | 1500        | 155  | 5                                   | Northwest      | Upwind            | Background              | No observations seen to effect sampling integrity |
| 26<br>90m Southwest of STPA office                    | 1500        | 155  | 11                                  | Northwest      | Downwind          | Excavators operating    | No observations seen to effect sampling integrity |
| 27<br>90m Southwest of STPA office                    | 1515        | 155  | 9                                   | Northwest      | Downwind          | Excavators operating    | No observations seen to effect sampling integrity |
| 28<br>10m North of Intercolonial Street fixed station | 1600        | 155  | 4                                   | Northwest      | Upwind            | Background              | No observations seen to effect sampling integrity |
| 29<br>90m Southwest of STPA office                    | 1600        | 155  | 10                                  | Northwest      | Downwind          | Excavators operating    | No observations seen to effect sampling integrity |
| 30<br>90m Southwest of STPA office                    | 1615        | 155  | 6                                   | Northwest      | Downwind          | Excavators operating    | No observations seen to effect sampling integrity |
| 31<br>10m North of Intercolonial Street fixed station | 1700        | 155  | 5                                   | Northwest      | Upwind            | Background              | 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               |
|---|-------------|--|-------------------------------------|----------------|-------------------|-------------------------|---|
| 32<br>90m Southwest of STPA office                    | 1700        | 155  | 10                                  | Northwest      | Downwind          | No activity             | No observations seen to effect sampling integrity |
| 33<br>110m Southwest of STPA office                   | 1718        | 155  | 9                                   | Northwest      | Downwind          | Excavators operating    | No observations seen to effect sampling integrity |
| 34<br>10m North of Intercolonial Street fixed station | 1800        | 155  | 1                                   | Northwest      | Upwind            | Background              | No observations seen to effect sampling integrity |
| 35<br>110m Southwest of STPA office                   | 1800        | 155  | 38                                  | Northwest      | Downwind          | Excavators operating    | No observations seen to effect sampling integrity |
| 36<br>110m Southwest of STPA office                   | 1815        | 155  | 10                                  | Northwest      | Downwind          | Excavators operating    | No observations seen to effect sampling integrity |
| 37<br>10m North of Intercolonial Street fixed station | 1900        | 155  | 2                                   | Northwest      | Upwind            | Background              | No observations seen to effect sampling integrity |
| 38<br>110m Southwest of STPA office                   | 1900        | 155  | 6                                   | Northwest      | Downwind          | No activity             | 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 ( $\mu\text{g}/\text{m}^3$ ) |
|-------------------------------------|--------------|---|---|
| 30m Southwest of STPA office        | 0700 to 0730 | 6   | 990   |
| 30m Southwest of STPA office        | 0800 to 0830 | 14  | 990   |
| 30m Southwest of STPA office        | 0900 to 0930 | 28  | 990   |
| 40m Southwest of STPA office        | 1000 to 1030 | 41  | 990   |
| 40m Southwest of STPA office        | 1100 to 1131 | 52  | 990   |
| 40m Southwest of STPA office        | 1200 to 1230 | 67  | 990   |
| 40m Southwest of STPA office        | 1300 to 1331 | 108   | 990   |
| 90m Southwest of STPA office        | 1400 to 1430 | 138   | 990   |
| 90m Southwest of STPA office        | 1500 to 1530 | 148   | 990   |
| 90m Southwest of STPA office        | 1600 to 1630 | 156   | 990   |
| 90m / 110m Southwest of STPA office | 1700 to 1733 | 166   | 990   |
| 110m Southwest of STPA office       | 1800 to 1830 | 190   | 990   |
| 110m Southwest of STPA office       | 1900 to 1915 | 196   | 990   |



### VOC Monitoring

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