

MEMORANDUM

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|-------------|----------------------------|-----------------|-----------------------|
| TO | Dawn MacNeil, STPA | FILE NO. | S-1312-14 |
| FROM | Dianne Theriault | SHIFT: | 0630 to 1830 |
| TEL | (902) 539-3012 | CC: | Shawn Bernon, STPA |
| FAX | (902) 539-3381 | | Wilfred Kaiser, STPA |
| DATE | 13 th May, 2009 | | Terry Smith, ALL-TECH |
| | | STPA NO. | CO2-PM-0045 |

**SUBJECT: 12th May, 2009, Real-time Air Monitoring Results
Sydney Tar Ponds Agency – Tar Cell, Pug Mill
FINAL REPORT**

Attached is a summary of Real-time particulate (as PM₁₀) results for air monitoring performed on the 12th of May, 2009. Reg Peters and Dwayne Timmons of ALL-TECH Environmental Services Cape Breton Limited (ALL-TECH) performed all air monitoring activities.

Weather conditions on the day of sampling:

- Mainly sunny
- Temperature: approximately 8°C
- Wind Direction: Northwest to Southwest to Northeast to North to Northeast

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

All downwind and upwind measurements of PM₁₀ were below the established Site Action Level for this parameter of 155 µg/m³.

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 Dwayne Timmons and reviewed by Dianne Theriault. If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,



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

Copied via e-mail:

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Real-time Airborne PM₁₀ Concentration Results
Sydney Tar Ponds Agency – Tar Cell, Pug Mill
12th May, 2009

| Sample No. & Air Monitoring Location | Time of Day | PM₁₀ Action Level (µg/m³) | Average Result (µg/m³) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample |
|---|--------------------|--|--|-----------------------|--------------------------|--------------------------------|---|
| 1 150m Northwest of old incinerator | 0700 | 155 | 13 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 2 120m Southeast of Logistec gate | 0700 | 155 | 14 | Northwest | Downwind | No activity observed on site | No observations seen to affect sampling integrity |
| 3 120m Southeast of Logistec gate | 0735 | 155 | 22 | Northwest | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 4 150m Northwest of old incinerator | 0800 | 155 | 15 | Northwest | Upwind | Background | No observations seen to affect sampling integrity |
| 5 120m Southeast of Logistec gate | 0800 | 155 | 25 | Northwest | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 6 120m Southeast of Logistec gate | 0825 | 155 | 11 | Northwest | Downwind | Equipment operating | No observations seen to affect sampling integrity |

| Sample No. & Air Monitoring Location | Time of Day | PM ₁₀ Action Level (µg/m ³) | Average Result (µg/m ³) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample |
|---|-------------|--|-------------------------------------|----------------|-------------------|-------------------------|---|
| 7 100m Northwest of old incinerator | 0900 | 155 | 12 | Southwest | Upwind | Background | No observations seen to affect sampling integrity |
| 8 40m South of Logistec gate | 0900 | 155 | 9 | Southwest | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 9 40m South of Logistec gate | 0915 | 155 | 12 | Southwest | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 10 100m Northeast of pug mill | 1000 | 155 | 10 | Northeast | Upwind | Background | No observations seen to affect sampling integrity |
| 11 150m Southeast of old incinerator | 1000 | 155 | 7 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 12 150m Southeast of old incinerator | 1020 | 155 | 8 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 13 100m Northeast of pug mill | 1100 | 155 | 12 | Northeast | Upwind | Background | No observations seen to affect sampling integrity |

| Sample No. & Air Monitoring Location | Time of Day | PM ₁₀ Action Level (µg/m ³) | Average Result (µg/m ³) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample |
|--|-------------|--|-------------------------------------|----------------|-------------------|------------------------------|---|
| 14 150m Southeast of old incinerator | 1100 | 155 | 10 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 15 150m Southeast of old incinerator | 1125 | 155 | 11 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 16 20m South of Dominion St. and Matilda St. intersection | 1200 | 155 | 12 | North | Upwind | Background | No observations seen to affect sampling integrity |
| 17 250m Southeast of old incinerator | 1200 | 155 | 11 | North | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 18 250m Southeast of old incinerator | 1220 | 155 | 15 | North | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 19 30m South of Dominion St. and Matilda St. intersection | 1300 | 155 | 11 | Northeast | Upwind | Background | No observations seen to affect sampling integrity |
| 20 220m South of old incinerator | 1300 | 155 | 12 | Northeast | Downwind | No activity observed on site | No observations seen to affect sampling integrity |

| Sample No. & Air Monitoring Location | Time of Day | PM ₁₀ Action Level (µg/m ³) | Average Result (µg/m ³) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample |
|--|-------------|--|-------------------------------------|----------------|-------------------|-------------------------|---|
| 21 220m South of old incinerator | 1340 | 155 | 10 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 22 30m South of Dominion St. and Matilda St. intersection | 1400 | 155 | 10 | Northeast | Upwind | Background | No observations seen to affect sampling integrity |
| 23 220m South of old incinerator | 1400 | 155 | 7 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 24 220m South of old incinerator | 1440 | 155 | 6 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 25 30m South of Dominion St. and Matilda St. intersection | 1500 | 155 | 8 | Northeast | Upwind | Background | No observations seen to affect sampling integrity |
| 26 220m South of old incinerator | 1500 | 155 | 6 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 27 220m South of old incinerator | 1535 | 155 | 6 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |

| Sample No. & Air Monitoring Location | Time of Day | PM ₁₀ Action Level (µg/m ³) | Average Result (µg/m ³) | Wind Direction | Relative Position | Description of Activity | Observations that may affect sample |
|--|-------------|--|-------------------------------------|----------------|-------------------|------------------------------|---|
| 28 30m South of Dominion St. and Matilda St. intersection | 1600 | 155 | 9 | Northeast | Upwind | Background | No observations seen to affect sampling integrity |
| 29 220m South of old incinerator | 1600 | 155 | 6 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 30 220m South of old incinerator | 1630 | 155 | 8 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 31 30m South of Dominion St. and Matilda St. intersection | 1700 | 155 | 8 | Northeast | Upwind | Background | No observations seen to affect sampling integrity |
| 32 220m South of old incinerator | 1700 | 155 | 9 | Northeast | Downwind | Equipment operating | No observations seen to affect sampling integrity |
| 33 220m South of old incinerator | 1745 | 155 | 11 | Northeast | 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 ($\mu\text{g}/\text{m}^3$) |
|-----------------------------------|--------------|---|---|
| 120m Southeast of Logistec gate | 0700 to 0759 | 18 | 990 |
| 120m Southeast of Logistec gate | 0800 to 0859 | 36 | 990 |
| 40m South of Logistec gate | 0900 to 0959 | 47 | 990 |
| 150m Southeast of old incinerator | 1000 to 1059 | 55 | 990 |
| 150m Southeast of old incinerator | 1100 to 1159 | 66 | 990 |
| 250m Southeast of old incinerator | 1200 to 1259 | 79 | 990 |
| 220m South of old incinerator | 1300 to 1359 | 90 | 990 |
| 220m South of old incinerator | 1400 to 1459 | 97 | 990 |
| 220m South of old incinerator | 1500 to 1559 | 103 | 990 |
| 220m South of old incinerator | 1600 to 1659 | 110 | 990 |
| 220m South of old incinerator | 1700 to 1759 | 120 | 990 |

VOC Monitoring

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