



City of Cleveland
Frank G. Jackson, Mayor

Department of Public Health
Division of Air Quality
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Cleveland, Ohio 44114-1839
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www.clevelandhealth.org

**SERVING OHIO EPA AS AGENCY 13
FOR CUYAHOGA COUNTY**

**CERTIFIED MAIL: 7002 2030 0001 1807 9914
RETURN RECEIPT REQUESTED**

December 3, 2009

Ralph Kyanko
Kokosing Materials Inc.
P.O. Box 334
Fredericktown, Ohio, 43019

**FACILITY ID: 01-42-00-0403
RECEIPT OF CORRECTIVE ACTION PLAN: AIR POLLUTION NUISANCE**

Dear Mr. Ralph Kyanko:

On November 2, 2009, Cleveland Division of Air Quality (CDAQ) issued a Notice of Violation requesting Kokosing Materials Inc., submit a corrective action plan which states how the air pollution nuisance will be abated. CDAQ is in receipt of a letter dated November 18, 2009, suggesting a meeting in approximately 30 days to discuss the consulting firm's findings and recommendations. At this time CDAQ does not consider it necessary to meet, as we are requesting a written corrective action plan outlining the steps that will be taken to abate the air pollution nuisance. CDAQ requests this written corrective action plan be submitted within 45 days of receipt of this letter.

Failure to do so may result in referral to Ohio EPA or U.S. EPA for further enforcement action. Fulfillment of your commitments included in the corrective action plan and/or any modifications contained within this letter does not constitute a waiver of CDAQ's ability to refer this matter to Ohio EPA or U.S. EPA for further enforcement action.

CDAQ issues this letter with Ohio EPA's concurrence and does not excuse any violations of local, state and federal laws or regulations regarding air pollution control. Violations of air pollution control laws may be pursued in local court or referred to Ohio EPA or U.S. EPA for further enforcement action. Should you have any questions, please call Bryan Sokolowski at (216) 420-7663. All correspondence with CDAQ must include the Ohio EPA facility identification number for Kokosing Materials Inc.: 01-42-00-0403.

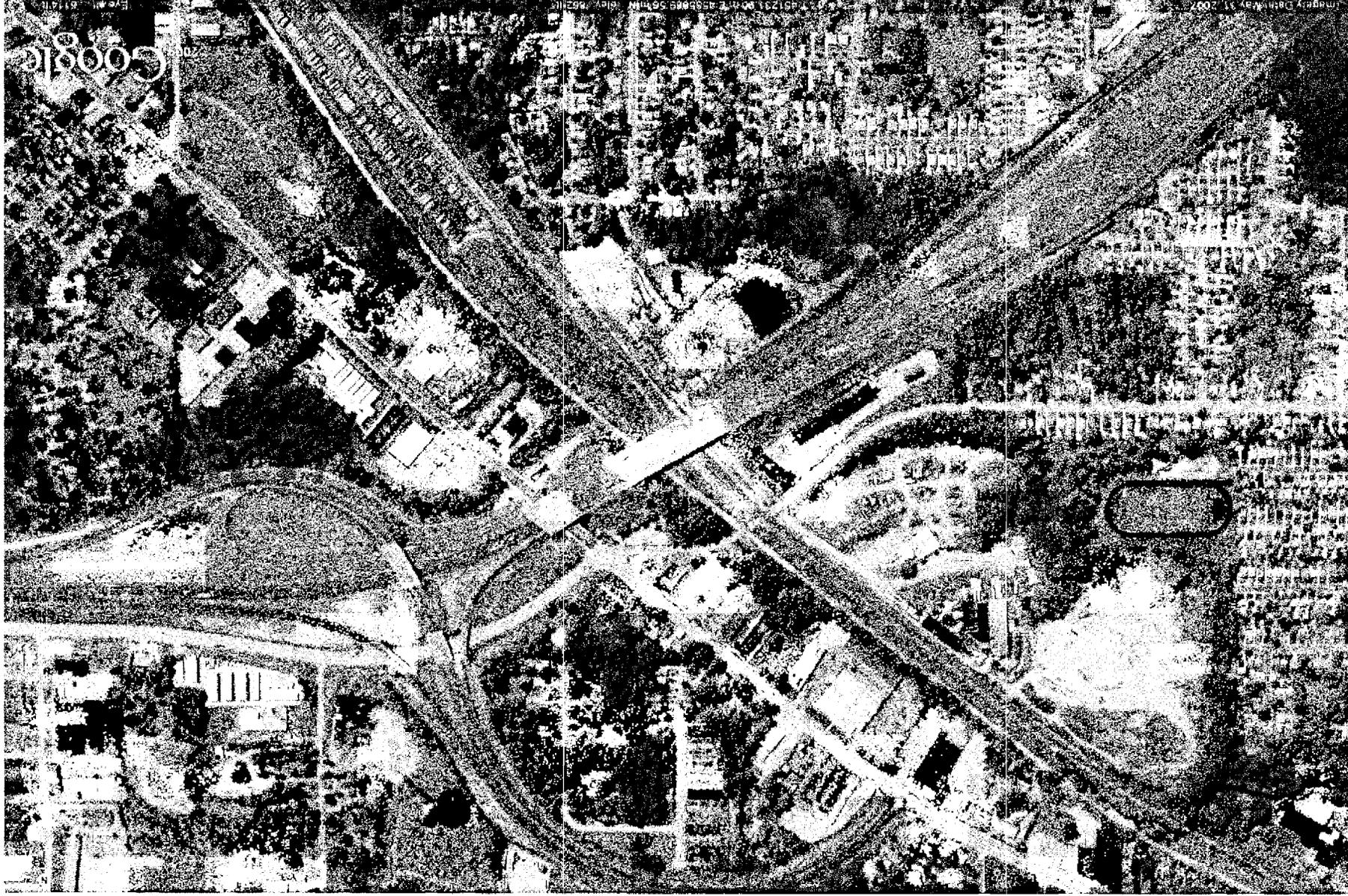
Sincerely,

George Baker
Chief of Enforcement, CDAQ

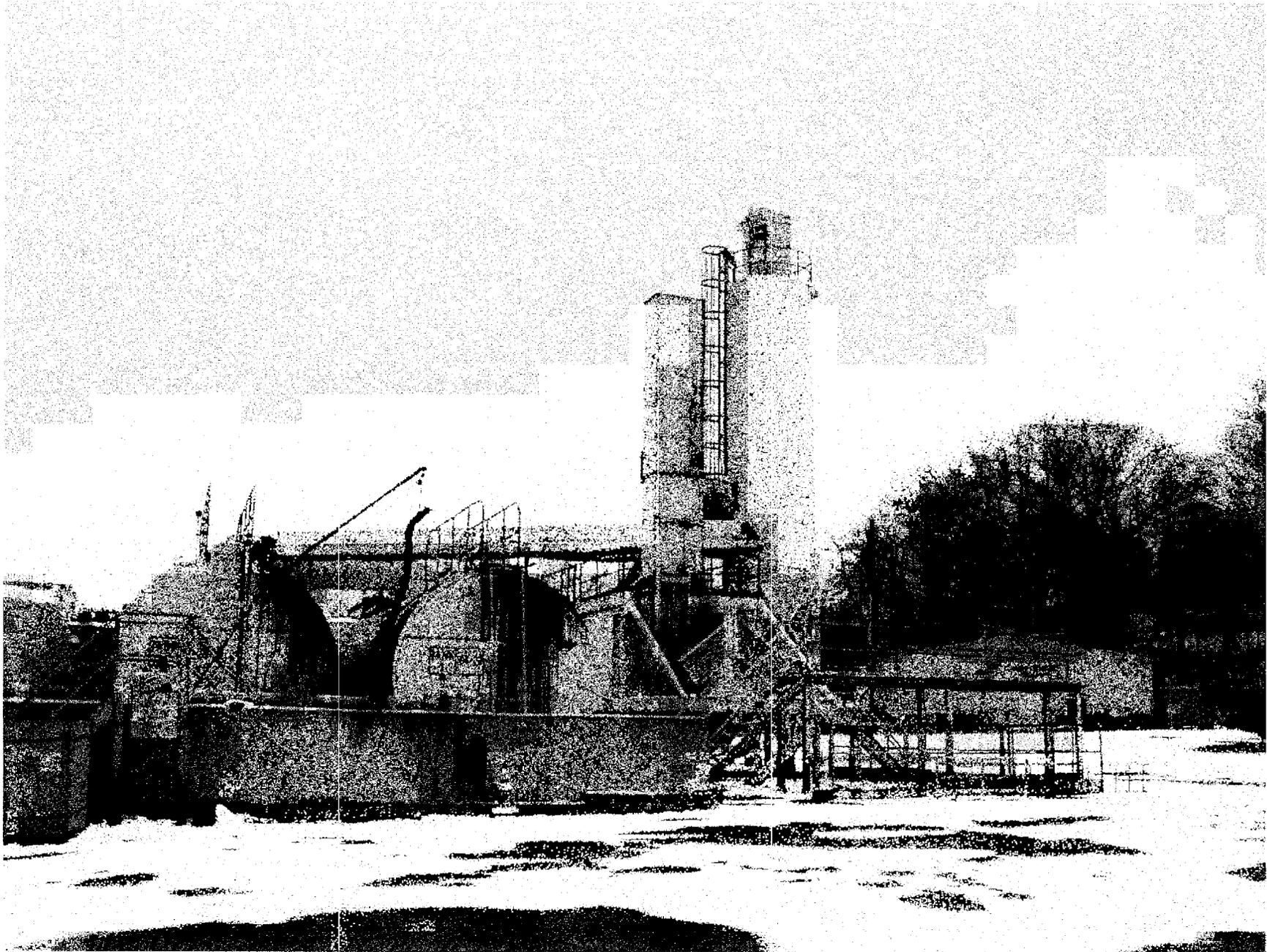
GB/BS

cc: John Paulian, Ohio EPA Central Office
Lisa Holscher, U.S. EPA Region V
Facility File and L:\Data\Facilities\0142000403\2009-10-13 RCAP.docx

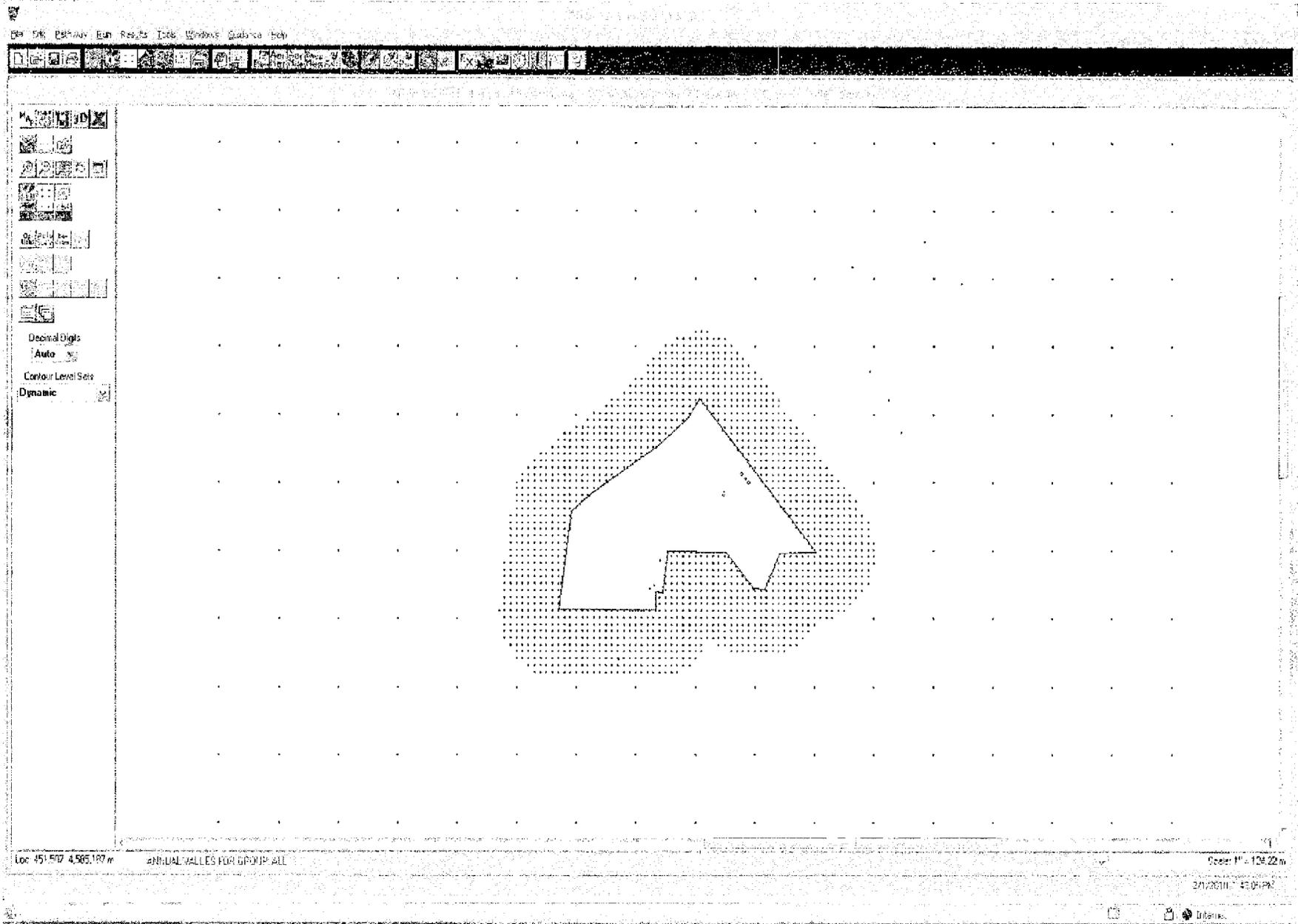
1. Site Overview







3. Receptor Grid



Kokosing Materials AQ Modeling Presentation to Ohio EPA - 2/24/2010

4. Results from AQ Modeling (emission rate = 1.0 lb/hr)

| Stack Height (ft) | Predicted Maximum Off-Site Concentrations* at 1.0 lb/hr Emission Rate ($\mu\text{g}/\text{m}^3$) | | | | | | | |
|-------------------|--|--------------|-------|--------------|-------|--------------|--------|--------------|
| | 1 hr | % of Current | 3 hr | % of Current | 24 hr | % of Current | Annual | % of Current |
| Current (38.5) | 19.51 | 100% | 16.22 | 100% | 4.82 | 100% | 0.19 | 100% |
| 40 | 18.59 | 95% | 14.73 | 91% | 4.57 | 95% | 0.15 | 77% |
| 45 | 14.56 | 75% | 9.14 | 56% | 3.00 | 62% | 0.07 | 36% |
| 50 | 3.51 | 18% | 2.72 | 17% | 0.60 | 13% | 0.06 | 33% |
| 55 | 2.80 | 14% | 2.14 | 13% | 0.51 | 11% | 0.06 | 30% |
| 60 | 2.53 | 13% | 1.68 | 10% | 0.44 | 9% | 0.05 | 28% |
| 65 | 2.29 | 12% | 1.29 | 8% | 0.38 | 8% | 0.05 | 26% |
| 70 | 2.03 | 10% | 1.06 | 7% | 0.33 | 7% | 0.05 | 24% |

* Note: The maximum predicted concentrations presented in this table are not necessarily representative of the actual air quality conditions. These results should be interpreted with an understanding of the model assumptions and limitations.

5. Emission Estimates

Estimated Maximum Toxic Air Pollutant Emissions:

| | |
|--|---------|
| Throughput Rate (ton asphalt/hr) | 365 |
| Maximum Heat Input (mmBtu/hr) | 120 |
| Heat Value of Natural Gas (Btu/scf) | 1,020 |
| Heat Value of No. 2 Fuel Oil (Btu/gal) | 140,000 |

| "Toxic" Air Pollutants (OAC rule 3745-114-01) | "Worst Case" Max Emissions* (lb/hr) |
|--|--|
| Organics | |
| Acetaldehyde | 4.75E-01 |
| Acrolein | 9.49E-03 |
| Benzene | 1.42E-01 |
| Ethylbenzene | 8.76E-02 |
| Formaldehyde | 1.13E+00 |
| Hexane | 3.36E-01 |
| Hydrogen Chloride | 2.35E-01 |
| Isooctane (2,2,4-trimethylpentane) | 1.46E-02 |
| Methyl Chloroform | 1.75E-02 |
| Naphthalene | 2.37E-01 |
| PCBs | 4.44E-05 |
| Propionaldehyde | 4.75E-02 |
| Quinone | 5.84E-02 |
| Toluene | 1.06E+00 |
| Xylene | 7.30E-02 |
| Metals | |
| Antimony | 6.57E-05 |
| Arsenic | 4.44E-06 |
| Barium | 2.12E-03 |
| Beryllium | 1.41E-06 |
| Cadmium | 1.78E-06 |
| Chromium | 8.89E-06 |
| Cobalt | 1.80E-04 |
| Copper | 1.13E-03 |
| Hexavalent Chromium | 8.89E-06 |
| Lead | 8.89E-05 |
| Manganese | 5.83E-02 |
| Mercury | 8.89E-07 |
| Molybdenum | 1.29E-04 |
| Nickel | 2.30E-02 |
| Phosphorus | 1.02E-02 |
| Silver | 1.75E-04 |
| Selenium | 1.80E-03 |
| Vanadium | 2.71E-04 |
| Zinc | 2.23E-02 |

*Note: The "Worst Case" emission rate is the permit limit for each "air toxic" for which the draft permit has a limit. None of the "Worst Case" emission rates are representative of actual emissions.

Estimated Maximum Criteria Air Pollutant Emissions:

| | |
|--|---------|
| Throughput Rate (ton asphalt/hr) | 365 |
| Maximum Heat Input (mmBtu/hr) | 120 |
| Heat Value of Natural Gas (Btu/scf) | 1,020 |
| Heat Value of No. 2 Fuel Oil (Btu/gal) | 140,000 |

| "Criteria" Air Pollutants | "Worst Case" Max Emissions* (lb/hr) |
|-------------------------------------|--|
| Carbon Monoxide (CO) | 81.6 |
| Nitrogen Oxides (NO _x) | 34.5 |
| Nitrogen Dioxide (NO ₂) | 34.5 |
| Sulfur Dioxide (SO ₂) | 135.0 |
| PM (filterable) | 7.81 |
| PM (condensable) | N/A |
| PM (total) | 12.19 |
| PM ₁₀ (filterable) | 1.71 |
| PM ₁₀ (condensable) | N/A |
| PM ₁₀ (total) | 8.50 |
| PM _{2.5} (filterable) | 1.71 |
| PM _{2.5} (condensable) | N/A |
| PM _{2.5} (total) | 8.50 |
| Lead (Pb) | 8.89E-05 |

*Note: None of the "Worst Case" emission rates are representative of actual emissions. The maximum hourly emission rate for SO₂ is the limit included in the Draft PTIO issued by Ohio EPA for periods when the asphalt plant is fired by used oil and using slag. This is not representative of the historical operation of the plant. Actual SO₂ emissions are significantly less than 135.0 lb/hr under normal operating conditions.

Kokosing Materials AQ Modeling Presentation to Ohio EPA - 2/24/2010

6. Predicted Maximum Off-Site Impact versus Air Quality Standards

Air Toxic Pollutants:

| "Toxic" Air Pollutants (OAC rule 3745-114-01) | "Worst Case" Max Emissions* (lb/hr) | Maximum Predicted 1-hr Off-Site Concentration (ug/m ³) | | | | | TLV (ug/m ³) | MAGLC ** (ug/m ³) |
|--|--|---|----------|----------|----------|----------|-----------------------------|-------------------------------------|
| | | Stack Height (ft) | | | | | | |
| | | 50 | 55 | 60 | 65 | 70 | | |
| Organics | | | | | | | | |
| Acetaldehyde | 4.75E-01 | 1.67 | 1.33 | 1.20 | 1.09 | 0.96 | 45,000 | 1,071 |
| Acrolein | 9.49E-03 | 0.03 | 0.03 | 0.02 | 0.02 | 0.02 | 169.0 | 4.0 |
| Benzene | 1.42E-01 | 0.50 | 0.40 | 0.36 | 0.33 | 0.29 | 1,600 | 38 |
| Ethylbenzene | 8.76E-02 | 0.31 | 0.25 | 0.22 | 0.20 | 0.18 | 434,000 | 10,333 |
| Formaldehyde | 1.13E+00 | 3.97 | 3.17 | 2.86 | 2.59 | 2.29 | 370 | 8.8 |
| Hexane | 3.36E-01 | 1.18 | 0.94 | 0.85 | 0.77 | 0.68 | 176,000 | 4,190 |
| Hydrogen Chloride | 2.35E-01 | 0.83 | 0.66 | 0.59 | 0.54 | 0.48 | 7,500 | 179 |
| Isooctane (2,2,4-trimethylpentane) | 1.46E-02 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | | N/A |
| Methyl Chloroform | 1.75E-02 | 0.06 | 0.05 | 0.04 | 0.04 | 0.04 | 1,910,000 | 45,476 |
| Naphthalene | 2.37E-01 | 0.83 | 0.66 | 0.60 | 0.54 | 0.48 | 52,000 | 1,238 |
| PCBs | 4.44E-05 | 0.0002 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | | N/A |
| Propionaldehyde | 4.75E-02 | 0.17 | 0.13 | 0.12 | 0.11 | 0.10 | 47,526 | 1,132 |
| Quinone | 5.84E-02 | 0.21 | 0.16 | 0.15 | 0.13 | 0.12 | 440 | 10.5 |
| Toluene | 1.06E+00 | 3.72 | 2.96 | 2.68 | 2.43 | 2.14 | 188,000 | 4,476 |
| Xylene | 7.30E-02 | 0.26 | 0.20 | 0.18 | 0.17 | 0.15 | 434,000 | 10,333 |
| Metals | | | | | | | | |
| Antimony | 6.57E-05 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0001 | 500 | 11.9 |
| Arsenic | 4.44E-06 | 0.00002 | 0.00001 | 0.00001 | 0.00001 | 0.00001 | 10 | 0.2 |
| Barium | 2.12E-03 | 0.01 | 0.01 | 0.005 | 0.005 | 0.004 | 500 | 11.9 |
| Beryllium | 1.41E-06 | 0.000005 | 0.000004 | 0.000004 | 0.000003 | 0.000003 | 0.05 | 0.001 |
| Cadmium | 1.78E-06 | 0.00001 | 0.000005 | 0.000005 | 0.000004 | 0.000004 | 2 | 0.05 |
| Chromium | 8.89E-06 | 0.00003 | 0.00002 | 0.00002 | 0.00002 | 0.00002 | 500 | 11.90 |
| Cobalt | 1.80E-04 | 0.001 | 0.0005 | 0.0005 | 0.0004 | 0.0004 | 20 | 0.5 |
| Copper | 1.13E-03 | 0.004 | 0.003 | 0.003 | 0.003 | 0.002 | 200 | 4.8 |
| Hexavalent Chromium | 8.89E-06 | 0.00003 | 0.00002 | 0.00002 | 0.00002 | 0.00002 | 10 | 0.24 |
| Lead | 8.89E-05 | 0.0003 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 50 | 1.2 |
| Manganese | 5.83E-02 | 0.20 | 0.16 | 0.15 | 0.13 | 0.12 | 200 | 4.8 |
| Mercury | 8.89E-07 | 0.000003 | 0.000002 | 0.000002 | 0.000002 | 0.000002 | 25 | 0.60 |
| Molybdenum | 1.29E-04 | 0.0005 | 0.0004 | 0.0003 | 0.0003 | 0.0003 | 10,000 | 238.1 |
| Nickel | 2.30E-02 | 0.08 | 0.06 | 0.06 | 0.05 | 0.05 | 1,500 | 35.7 |
| Phosphorus | 1.02E-02 | 0.04 | 0.03 | 0.03 | 0.02 | 0.02 | | N/A |
| Silver | 1.75E-04 | 0.001 | 0.0005 | 0.0004 | 0.0004 | 0.0004 | 10 | 0.24 |
| Selenium | 1.80E-03 | 0.01 | 0.005 | 0.005 | 0.004 | 0.004 | 200 | 4.8 |
| Vanadium | 2.71E-04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | N/A |
| Zinc | 2.23E-02 | 0.08 | 0.06 | 0.06 | 0.05 | 0.05 | | N/A |

*Note: The "Worst Case" emission rate is the permit limit for each "air toxic" for which the draft permit has a limit. None of the "Worst Case" emission rates are representative of actual emissions.

**Note: The MAGLC presented in this table assumes 8,760 hrs of operation annually. The actual annual operating hours are much less.

Kokosing Materials AQ Modeling Presentation to Ohio EPA - 2/24/2010

Criteria Air Pollutants:

| Pollutant | Averaging Period | "Worst Case" Maximum Emissions* (lb/hr) | NAAQS (ug/m ³) | Maximum Predicted Off-Site Concentration (ug/m ³) | | | | |
|--|-----------------------------|---|----------------------------|---|-----------|------------|------------|------------|
| | | | | Stack Height (ft) | | | | |
| | | | | 50 | 55 | 60 | 65 | 70 |
| CO | 1-hr | 81.6 | 40,000 | 287 | 228 | 207 | 187 | 165 |
| CO | 8-hr (2nd High) | 81.6 | 10,000 | 100 | 78 | 70 | 64 | 59 |
| NO ₂ (NO ₂ =NO _x) | Annual | 34.5 | 100 | 2.1 | 1.9 | 1.8 | 1.7 | 1.6 |
| NO ₂ (NO ₂ =NO _x) | 1-hr (4th High) | 34.5 | 190 | 103 | 78 | 70 | 65 | 60 |
| NO ₂ (NO ₂ =75% of NO _x) | Annual | 25.9 | 100 | 1.6 | 1.5 | 1.4 | 1.3 | 1.2 |
| NO ₂ (NO ₂ =75% of NO _x) | 1-hr (4th High) | 25.9 | 190 | 77 | 59 | 52 | 49 | 45 |
| SO ₂ | 3-hr (2nd High) | 135.0 | 1,300 | 367 | 289 | 226 | 174 | 144 |
| SO ₂ | 24-hr (2nd high) | 135.0 | 365 | 81 | 69 | 59 | 51 | 45 |
| SO ₂ | Annual | 135.0 | 80 | 8.4 | 7.6 | 7.1 | 6.6 | 6.2 |
| SO ₂ (Proposed)** | 1-hr (4th High) | 135.0 | 130 | 403 | 306 | 273 | 256 | 235 |
| SO ₂ (Proposed)** | 1-hr (4th High) | 135.0 | 260 | 403 | 306 | 273 | 256 | 235 |
| SO ₂ (Proposed)** | 1-hr (4th High) | 135.0 | 390 | 403 | 306 | 273 | 256 | 235 |
| PM ₁₀ (filterable) | 24-hr | 1.71 | 150 | 1.0 | 0.9 | 0.7 | 0.6 | 0.6 |
| PM ₁₀ (total) | 24-hr | 8.50 | 150 | 5.1 | 4.3 | 3.7 | 3.2 | 2.8 |
| PM ₁₀ (total) | Annual | 8.50 | N/A | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 |
| PM _{2.5} (filterable) | 24-hr | 1.71 | 35 | 1.0 | 0.9 | 0.7 | 0.6 | 0.6 |
| PM _{2.5} (total) | 24-hr | 8.50 | 35 | 5.1 | 4.3 | 3.7 | 3.2 | 2.8 |
| PM _{2.5} (filterable) | Annual | 1.71 | 15 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| PM _{2.5} (total) | Annual | 8.50 | 15 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 |
| Pb | 3-month Average (estimated) | 0.000089 | 0.15 | 4.0591E-05 | 3.234E-05 | 2.9260E-05 | 2.6496E-05 | 2.3411E-05 |

*Note: None of the "Worst Case" emission rates are representative of actual emissions.

The maximum hourly emission rate for SO₂ is the limit included in the Draft PTIO issued by Ohio EPA for periods when the asphalt plant is fired by used oil and using slag. This is not representative of the historical operation of the plant. Actual SO₂ emissions are significantly less than 135.0 lb/hr under normal operating conditions.

**Note: The proposed 1-hr SO₂ NAAQS is expressed in ppb. The values in the NAAQS column in this table are estimated based on 50 ppb = 130 ug/m³. US EPA has solicited comments regarding setting a 1-hr SO₂ NAAQS at 50, 100 or up to 150 ppm.

7. Summary

- The maximum off-site air quality impact is dramatically reduced when the stack height is increased from 38.5 ft to 50 ft.
- A stack height of 50 ft results in predicted off-site concentrations that are substantially less than the MAGLC.
- A stack height of 50 ft results in predicted off-site concentrations that are substantially less than the NAAQS.
- The air quality impacts summarized above are based on assumptions regarding “worst case” emission rates that far exceed the actual emission rates associated with the operation of the Kokosing facility.

For example:

- The actual hourly operating rate will most often be less than 365 tons per hour of asphalt production.
- The plant never operates at maximum capacity for 24 hours per day (the maximum predicted 24-hr average off-site impacts are based on the assumption that the plant operates at maximum capacity for 24 hours per day every day of the year).
- The plant never operates with the worst case fuel for 8,760 hours per year (if the plant operates at the maximum rate of 365 tons of asphalt mix produced per hour, the annual production limit of 800,000 tons can be reached with fewer than 2,100 hours of operation annually).
- The “worst case” emission rates assume the plant will be using slag and simultaneously operating with used oil. The facility does not expect to use slag for more than 5% of the total actual operating hours.