

Derenzo and Associates, Inc.

Environmental Consultants

Statement of Qualifications

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STATEMENT OF QUALIFICATIONS

1.0 INTRODUCTION

Derenzo and Associates, Inc. (Derenzo and Associates) is an environmental consulting company that offers comprehensive air quality services including air permitting, source testing, ambient air monitoring, and engineering and regulatory analyses. Environmental consulting services are provided to a wide variety of manufacturing, waste management and energy production companies.

The company has offices in Livonia and Lansing, Michigan, which allow for easy access to many clients in the Great Lakes region. While many of our clients are located within the State of Michigan, environmental analysis, permitting and testing services have been provided companies located throughout the United States and internationally.

Derenzo and Associates was founded in 1989 and has grown to become a recognized provider of quality environmental consulting services. The staff at Derenzo and Associates has over 70 years of combined experience in the air quality field. We are committed to servicing the client and providing expertise and knowledge to meet the requirements of promulgated and proposed regulations, enforcement actions, and complex air pollutant specifications. Our management philosophy is to work closely with clients in order to develop proactive strategies that effectively address these regulatory and air pollutant measurement requirements.

2.0 ENGINEERING SERVICES

Derenzo and Associates provides the following comprehensive permitting and technical analysis services:

- New Source Review and Prevention of Significant Deterioration Permitting
- Regulatory Compliance Analyses
- Clean Air Act Amendments Title V Permitting
- Air Pollution Control Technology Analyses (RACT, MACT, BACT, LAER)
- Emission Inventory Development
- Compliance Assurance Monitoring (CAM)
- Compliance Negotiations for Consent Orders and Permit Conditions

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- Emission and Ventilation Control System Analyses
- Air Pollution Dispersion Modeling
- Accidental Chemical Release Assessments
- Emission Reduction Credit Analyses (availability and sources of sellers for buyers)
- Expert Testimony

2.1 Air Permitting

New Source Review (federal and state) and Prevention of Significant Deterioration air permit applications often require the completion of complex analyses to satisfy the engineering review requirements of regulatory agencies. The primary components of these permit applications include the development of new or modified process regulated air pollutant emission rates, evaluations of appropriate emission control technologies and demonstrations that the proposed emissions will result in acceptable air quality impacts. U.S. Environmental Protection Agency (USEPA) on-line data base searches and vendor contacts are required to be performed to evaluate documented regulatory requirements, and obtain available information on historical and recent determinations that have been made to specify controls for various types of emission processes.

Part 70 (Title V) of the Clean Air Act Amendments (CAAA) of 1990 requires that all applicable sources obtain renewable operating permits (ROP) from state agencies with approved authority. Development and evaluation of detailed regulated pollutant emissions inventories is critical in determining the applicability of the ROP requirement. Numerous components of the emission inventory, an identification of all regulations that affect (or may not affect) the emission source, methods whereby compliance will be regularly demonstrated and emission configuration and process descriptions serve as a basis for assembling the ROP application.

2.2 Compliance

Compliance components of the regulatory process require that emission sources operate within the limits of all applicable rules and regulations. Auditing procedures are used to determine the compliance status of process operations and emissions through facility inspections, records reviews of existing permits and analysis of applicable regulations. Non-compliance determinations by the regulatory agency can result in corrective actions through the implementation of consent orders. Numerous operating, emission, permit and enforcement conditions are generally utilized within the consent order that require detailed technical and regulatory evaluation and discussion with the regulatory agency prior to its acceptance.

2.3 Air Pollution Dispersion Modeling

Computer mathematical modeling techniques are required in most permit analyses to demonstrate that emissions from proposed (and existing) sources of air pollutants do not exceed National Ambient Air Quality Standards (NAAQS), PSD increments, and environmentally acceptable toxic air contaminant concentrations and hazardous air pollutant release situations. USEPA guideline models and supporting analyses are used to determine ambient air impact concentrations that result from the emission sources being evaluated. USEPA guideline models regularly utilized in air quality analyses range from simple applications of SCREEN3 to very complex Industrial Source Complex (ISC) 3 evaluations. As a result of the regulatory provisions of Title III of the 1990 CAAA, accidental releases of HAPs from a variety of applicable processes have been evaluated with appropriate analysis techniques such as SLAB.

3.0 FIELD SERVICES

Derenzo and Associates provides the following comprehensive testing and measurement services:

- Source Testing
- RATA Measurements
- Air Quality Monitoring
- Meteorological Parameter Measurements
- Visible Emission Measurements

3.1 Source Testing

The testing of emissions for criteria pollutants, toxic air contaminants and hazardous air pollutants from process equipment is a critical component of compliance determinations and emission factor development activities. These testing requirements may involve detailed interaction with regulatory agencies to obtain test method and measurement approvals. USEPA Test Methods 1-10, 17, 18, 23, 25, 25A, 25C, 26, 29, 202, 210A, MM5, VOST, TO-1/TO-14, 204F and modifications to NIOSH/OSHA have been used in the sampling of stationary source emissions.

3.2 Ambient Air Monitoring/Sampling

Regulatory agencies often require ambient air measurements of emissions impacts to establish the range and duration of air pollutant concentrations to which the public may be exposed. Multiple ambient air monitoring programs have been implemented and are operated to measure meteorological parameters, and particulates and gaseous pollutants.

4.0 REPRESENTATIVE PROJECT SUMMARIES

General summaries presented in the following text are provided to illustrate the types of air permitting and emission testing projects that have been completed by Derenzo and Associates.

4.1 Engineering Services

Emission Inventory Development

Maximum potential hourly and annual regulated air pollutant emission rates have been determined for all applicable processes (e.g., point, area, fugitive) at numerous types of sources (i.e., automotive parts manufactures, jet engine manufacture, fiberglass insulation manufacture, municipal solid waste landfills, hazardous waste treatment facilities). Where emission controls are used with federally enforceable permit limitations, appropriate pollutant control efficiencies were considered. Where no federally enforceable permit restrictions have been specified, potential emissions were based on maximum processing capacity of the equipment with continuous operating schedule. Air pollutant emission rate calculations were based on:

- USEPA AP-42, and other recognized air pollutant emission factors (e.g., Factor Information and Retrieval Data System),
- Material balance,
- Inventory records,
- Emission control removal destruction efficiencies (vendor-guaranteed capture and destruction or collection efficiencies),
- Existing or similar emission source permit limits,
- Site specific or similar test data, or the results of new or other tests (where available or determined to be necessary), and/or
- Enforceable emission limits specified in permits.

The stationary source regulated air pollutant potential emission inventories for each of the facilities were used to determine the applicability of a federal Renewable Operating Permit (ROP).

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Part 70 (Title V) Operating Permits Applications

Services have been provided manufacturing, printing and energy production operations (i.e., automobile parts coating facilities, fiberglass manufacturing plants, landfills and electricity generating facilities) to develop renewable operating permit applications pursuant to the regulatory requirements of numerous states. The development of Michigan ROP applications has included the following activities:

- Completion and review of source emission inventories.
- Assembly of emission configuration data.
- Evaluation of operating flexibility requirements.
- Compliance reviews and assessments.
- Preparation of application documents (in hardcopy and electronic format) for submittal to the regulatory agency (process descriptions, regulatory review components, compliance certification, emission inventory components, monitoring and record keeping methodologies and requirements, supporting calculations).

Prevention of Significant Deterioration Permitting

Services have been provided manufacturing, mining, energy production and petroleum refinery operations (i.e., process boilers, process heaters, limestone mining and processing, electricity generating engines and turbines, and automotive parts and general manufacturing processes) to develop permit applications for the installation of new and modified emissions sources that are located in criteria pollutant attainment areas. In attainment areas, federal PSD regulations have the potential to be applicable with state regulations. The development of PSD permit applications has included the following activities:

- Regulated air pollutant potential emission rate calculations to determine if the proposed installation will be a major source (or major modification). Netting out procedures have been used in some projects to keep proposed emission increases from being significant to avoid PSD requirements.
- Best Available Control Technology (BACT) analyses to demonstrate acceptable criteria pollutant control measures and emission limits.
- Detailed air pollutant dispersion modeling to evaluate NAAQS compliance and PSD increment consumption.

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New Source Review Permitting

Services have been provided an automobile manufacturer to develop a permit application for the installation of a new plastic part truck grill coating processes located in an ozone nonattainment area. The uncontrolled coating processes increased potential volatile organic compound (VOC) emissions from an existing major offset source by approximately 700 tons per year. In ozone nonattainment areas, New Source Review regulations are applicable with state regulations to evaluate emissions of VOC. The development of NSR permit applications have included the following activities:

- Analysis of reductions in actual VOC emissions from terminated and altered manufacturing operations to keep net VOC emission increases from being significant (netting out procedures).
- Engineering analyses to demonstrate that the coating booth exhaust air could be recirculated with 10 percent of the recirculated air directed to an emission control system. The control of higher VOC concentrations in a smaller air volume is more cost effective which increased the viability of the project due to limit project dollars.
- BACT/LAER analyses to demonstrate acceptable VOC control measures
- Engineering analyses to demonstrate that the VOC emissions from coating processes could be directed to a nearby boiler for destruction rather than installing a new costly add on incinerator to satisfy BACT requirements.
- Emission reduction credit (ERC) analyses to determine available sources of ERC and market prices.

Air Pollution Dispersion Modeling

Services have been provided manufacturing, mining, energy production and petroleum refinery operations (i.e., process boilers, process heaters, limestone mining and processing, electricity generating engines and turbines, automotive parts manufacturing and coating processes, hazardous waste treatment facilities) to evaluate criteria pollutant and toxic air contaminant impact concentrations that are produced by source emissions. These air quality demonstrations have included the following activities:

- Detailed air pollution dispersion modeling analyses to determine the amount of PSD air quality increment that was available for, and consumed by, planned significant emission increases. Increment consumption analysis is often required by regulatory agencies even if the planned emission increase is not significant.
- NAAQS analyses to determine the acceptability of new significant and insignificant emissions increases with existing attainment and nonattainment area background sources.

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- Toxic air contaminant analyses (as required by state regulations) to demonstrate that individual non-criteria pollutant emission increases would meet acceptable public exposure limits.
- Chemical release analyses to evaluate the air quality impacts produced by these materials on the surrounding environmental.

4.2 Field Services

Source Testing

- Automobile body painting processes; *NO_x, isocyanates, VOC, particulates.*
- Automobile parts (leaf and coil springs) manufacturing emission controls; *particulates, CO, hydrocarbons, NO_x, control efficiency.*
- Automobile parts (engine bearing) manufacturing; *particulate lead.*
- Automobile parts (pistons) electroplating; *condensable and particulate tin.*
- Automobile parts (cork gaskets) manufacturing; *total hydrocarbons as propane.*
- Automobile parts (fiberglass hoodliners/headliners) manufacturing; *ammonia, phenol, formaldehyde, methylamine, hydrocarbons.*
- Automobile parts (seats) manufacturing; *VOC, VOC capture efficiency, particulates, tracer gas.*
- Automobile parts coating processes; *particulates, VOC, VOC destruction efficiency.*
- Cement kilns with liquid hazardous waste fuel; *dioxins/furans, metals, Hg, NO_x, SO₂, CO, speciated VOC, semi-VOC.*
- Chrome plating processes; *total and hexavalent chrome.*
- Fiberglass manufacturing processes (raw material charging, molten glass); *particulates, NO_x.*
- Food supplement manufacturing processes; *particulates.*
- Food production (cereals) baking ovens; *particulates.*
- Foundry processes; *particulates.*

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- Float glass manufacturing plant; *NO_x, SO₂, CO, particulates.*
- Hazardous waste treatment process emission controls; *particulates, hydrocarbons.*
- Hot mix asphalt plants; *particulates, CO, total HC, ; NO_x, SO₂, acrolein, benzene, xylene, toluene, metals, opacity, odor.*
- Internal combustion engines (natural gas, landfill gas, diesel fuel); *PM, NO_x, SO₂, CO, hydrocarbons, NMOC.*
- Iron production from ore (slag pits); *H₂S.*
- Medical waste incinerators; *particulates, hydrogen chloride.*
- Nonmetallic mineral processing facilities; *visible emissions (opacity).*
- Paper manufacturing; *chloride, chloride dioxide, chloroform.*
- Petroleum refinery (catalytic reactor, separators, off-gassing) processes; *SO₂, NO_x, CO.*
- Pressure ink application (roll coat) process; *VOC capture efficiency, VOC destruction efficiency .*
- Printing process (web coating) emission controls; *VOC capture efficiency, VOC destruction efficiency.*
- Salt processing; *particulates.*
- Sewage sludge incinerators; *heavy metals, hydrocarbons.*
- Stainless steel production from reclaimed metals (electric arc furnace); *NO_x, particulates.*
- Thermal soil remediation unit afterburners; *particulates, NO_x, CO, hydrocarbons.*
- Thin film separators (hazardous waste processing); *hydrocarbons.*
- Turbine engines (natural gas, diesel fuel); *NO_x, SO₂, CO, O₂, CO₂.*

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Ambient Air Monitoring

- Municipal incinerator ash monofill (two facilities); *TSP, PM₁₀, metals*
- Scrap metal shredding and recycling plant; *TSP, PM₁₀, metals, PCB*
- Automobile assembly plant; *multiple organic compounds, formaldehyde, acetone*
- Automobile parts manufacturing plant; *PM₁₀, metals, multiple organic compounds*
- Hazardous waste treatment facility (two facilities); *TSP, PM₁₀, metals, multiple organic compounds, PCB*
- Large building demolition projects; *TSP, metals, real-time dust/aerosols*
- Remediation activities (superfund soils, landfill soils); *PM₁₀, metals, multiple organic compounds*
- Waste recycling and reduction facility; *PM₁₀*
- Publicly Owned Treatment Works in New York (POTW); *multiple organic compounds*

Air Monitoring Stations

- Two portable ambient air pollutant-monitoring trailers have been fabricated, assembled and provided a customer in Brazil for use in assessing the impacts of air pollutant emissions (i.e., PM₁₀, NO_x, SO₂, CO, O₃) from an industrial location within the country. Installed with the air pollutant monitoring equipment are sensors to measure various meteorological parameters.
- Seven portable ambient air pollutant-monitoring trailers have been fabricated, assembled and provided customers in Mexico for use in assessing the impacts of air pollutant emissions (i.e., PM₁₀, NO_x, SO₂, CO, Hydrocarbons, HCl) from industrial locations within the country. Installed with the air pollutant monitoring equipment are sensors to measure various meteorological parameters.

5.0 REPRESENTATIVE CLIENTS

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|--------------------------------|-----------------------------|
| ANCAST | KERR CORP. |
| ADEPT PLASTIC FINISHING | LIDLAW GROUP |
| ALPENA POWER GENERATION | LAND AND LAKES, CO. |
| ANGELO IAFRATE CONSTRUCTION CO | LANDFILL ENERGY SYSTEMS |
| BIERLEIN | LENAWEE CO. ROAD COMMISSION |
| BRANCH CO. ROAD COMMISSION | MACSTEEL |
| CYGNET AUTOMATED CLEANING | MCM MANAGEMENT |
| DEPOR INDUSTRIES | MEAD JOHNSON |
| DTE BIOMASS ENERGY | MICHIGAN TECH. UNIVERSITY |
| DOW AGROSCIENCES | OMNISOURCE CORP. |
| DOW CORNING | PAMAR ENTERPRISES |
| DYNECOL, INC. | PARTS FINISHING GROUP |
| EDWARD C. LEVY | PLASTATECH ENGINEERING |
| ENERGY DEVELOPMENTS, INC. | POLLARD BANKNOTE |
| ENERGY SYSTEMS GROUP | REPUBLIC WASTE SERVICES |
| THE ENVIRONMENTAL QUALITY CO. | SACRAMENTO COUNTY |
| ERVIN AMASTEEL | SEVERSTAL NORTH AMERICA |
| FEDERAL MOGUL | SEXTON ENERGY |
| FERROUS PROCESSING & TRADING | STELMI AMERICA |
| FITZGERALD FINISHING CO. | SUN GRO HORTICULTURE |
| GOODRICH PAVING | TOYOTA ENGINEERING & MFG |
| GREAT LAKES AGGREGATES | U.S. ENERGY BIOGAS CORP |
| HURON VALLEY-SINAI HOSPITAL | WASTE MANAGEMENT |
| INNOVATIVE ENERGY SYSTEMS | WILLIAM BEAUMONT HOSPITAL |
| JABIL CIRCUIT, INC. | Z TECHNOLOGIES |

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6.0 REFERENCES

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