

# ***Microbac Laboratories, Inc.***

**Microbac**<sup>®</sup>

**Chicagoland  
Division**

**Statement  
of  
Qualifications**

**[www.microbac.com](http://www.microbac.com)**



*STATEMENT OF QUALIFICATIONS*

2007-2008

**Table of Contents**



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	Page
<b>Message From Robert Crookston, Managing Director</b>	3
<b>Company Description</b>	4
<b>Mission Statement</b>	4
<b>Quality Policy</b>	5
<b>Quality Assurance Program</b>	6
<b>Accreditations/Approvals/Certifications</b>	13
<b>Project Management Philosophy</b>	14
<b>Capabilities</b>	15
<b>Safety</b>	18
<b>Facility &amp; Equipment</b>	21
<b>Testing &amp; Reporting Capabilities</b>	28
<b>Project Experience</b>	33
<b>Resumes of Management Team</b>	37
<b>Microbac Laboratories' National Network Map &amp; Directory</b>	46

*STATEMENT OF QUALIFICATIONS*

2007-2008



*Message From  
Robert S. Crookston,  
Managing Director*

On behalf of the **Chicagoland Division of Microbac Laboratories, Inc.**, I would like to thank you for giving us this opportunity to present our qualifications. In addition to our analytical capabilities and top notch QA systems, our team is dedicated to meeting your needs. We strive each day to provide you, our customer, unparalleled analytical and customer support.

*“Quality People  
Make the Difference”*

I am very proud of our laboratory, our quality systems and our operations. However, I am most proud of our team of people who serve you. We have assembled a group of outstanding individuals who have the knowledge and experience to support your projects in a professional, efficient and customer-focused manner.

The Chicagoland Division has many services to offer. We can support your Environmental, Food, Microbiology and Field Sampling needs from our Merrillville and Indianapolis locations. We can also support a wide variety of additional testing by tapping the resources of the entire national network of **Microbac Laboratories**. Working in concert, utilizing the full resources of Microbac Laboratories, our people will exceed your expectations.

A Statement of Qualifications can present the technical aspects of our operations. However, it is your interaction with our people that will make the difference. We invite you to experience that difference.

We look forward to the opportunity to support your analytical needs.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## Company Description

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Soon after arriving in the United States, A. Warne Boyce founded **Microbac Laboratories** in 1969 with the purchase of a dairy products lab located in Pittsburgh, Pennsylvania.

In the years since, Microbac has grown into one of the world's most diversified independent commercial testing and analytical networks. Today, Microbac operates a national network of 25 locations capable of supporting a wide range of analytical needs. Along the network, Microbac can support environmental sampling and testing, food chemistry, nutritional labeling, cosmetics, drug screening, nutraceuticals/vitamins, microbiology analysis, pharmaceuticals, industrial hygiene, and physical and failure analysis testing.



The **Chicagoland Division** was established in 1991 and was acquired by Microbac in March 2004. The lab offers comprehensive sampling and analytical services for the environmental, food and microbiology markets.

## Mission Statement

**Microbac Laboratories, Inc.** provides scientific information, expertise, partnering, and solutions to clients needing testing, measurement, and personalized services.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## *Quality Policy*

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**Microbac Laboratories, Inc.** is dedicated to supplying our customers with high quality, cost effective analytical and value added services. In support of this goal, **Microbac Laboratories** will:

Provide our clients with the highest standard of service and data quality in accordance with good professional and analytical practices, documented standard operating procedures and compliance with all requirements of applicable state, national and international certification programs.

Continually improve all aspects of our business, including our commitment to safety, the environment, data quality, service to our clients and cost effectiveness.

Focus on client satisfaction through employee involvement, leadership and personal responsibility.

This Quality Policy is fully endorsed by the members of the management team. This Quality Policy is communicated to, understood by, and implemented by all personnel.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## Quality Assurance Program

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**Microbac Laboratories – Chicagoland** is committed to providing excellence in analytical chemistry. **Microbac Laboratories** recognizes that the needs of our clients must be met in order to be successful in the market. The data generated in the laboratory is utilized by our clients in many and varied applications. The data produced has a high intrinsic value over and above the cost of providing the information to our client. Because this information is important to our clients, it is necessary that it be produced under the guidelines of a program that will ensure that it has the necessary quality, i.e., that it has a degree of accuracy commensurate with its intended use. This section of the manual will provide an overview of the quality assurance program under which **Microbac Laboratories** operates. Detailed information concerning the program can be found in the facility Quality Assurance Plan and method specific Standard Operating Procedures. This information is available upon request.

### Quality Assurance Objectives

The overall objective of our quality assurance program, as directed by management is to generate defensible data that will meet the data quality objectives of the data user. To accomplish this, our quality systems:

- Establish procedures that will ensure that data generated in the laboratory are within acceptable limits of precision and accuracy for the intended purpose.
- Establish and maintain clear acceptance criteria for quality control analyses.
- Establish procedures to document that these quality control measures are, in fact, being carried out.
- Establish procedures to ensure the accountability of the data, i.e., that the results reported do apply to the sample as submitted.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## **Quality Assurance Program**

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- Establish procedures to ensure that any result reported to a client is traceable.
- Establish procedures for investigation of out of control data, and documentation of resolution.

### **Quality Assurance Program Administration**

The administration of our quality assurance program is the responsibility of the Quality Assurance Director in cooperation with the Managing Director and Laboratory Supervisors.

Microbac Laboratories operates under a set of quality systems addressed and detailed in our Quality Assurance Plan (QAP). These systems were established in accordance with various Federal, State, and other accreditation/certification programs. Our quality systems are comprised of two main concepts: Quality Assurance (QA) and Quality Control (QC). QA refers to those activities whose purpose is to provide the producer or user of a product or service the assurance that it meets defined standards of quality with a stated level of confidence. QC refers to those activities whose purpose is to control the quality of a product or service so that it meets the needs of users.

Quality assurance processes begin long before sample containers are prepared and samples are collected, and continues on after the data is archived. The goal of our quality assurance program is to create and maintain an unequivocal sample history.

The requirements in our Quality Assurance Plan apply to all samples received. The plan is reviewed annually and whenever deemed necessary. Our QAP addresses the following systems:

- Document Control
- Error Correction

*STATEMENT OF QUALIFICATIONS*

2007-2008

## **Quality Assurance Program**

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- Standard and Reagent Traceability
- Standard Operating Procedures for Administrative, as well as Analytical Procedures
- Project Assessment and Management
- Analytical Quality Control (e.g. instrument controls such as calibration and verification, batch controls, and matrix controls)
- Sample Receipt & Login
- Equipment, Supplies, and Services
- Proficiency Testing
- Corrective Action
- Complaints
- Confidentiality
- Audits
- Training
- Ethics
- Data Reduction, Validation and Reporting

In order to document the quality assurance program, a set of standard operating procedures (SOPs) are utilized by each department and are available to all laboratory personnel. Detailed SOPs describing Microbac's operations include:



Sample Handling

Sample Log-In

Sample Storage and Disposal

Chain-of-Custody Documentation

Analytical Testing Procedures

*STATEMENT OF QUALIFICATIONS*

2007-2008

## **Quality Assurance Program**

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Validation and Authorization of Analytical Procedures  
Analytical Methods for Non-Standard Analyses / Tests  
Subcontracting  
Laboratory Notebooks  
Reagent Quality, Receipt, Preparation and Storage  
Instrument and Equipment Calibration  
Instrument and Equipment Maintenance  
Data Entry and Verification (multi-level technical review)  
Data Storage and Security  
Quality Control Records  
Investigation and Corrective Action  
Personnel Training Records  
Quality Assurance Audits  
Validation of Computer Calculations

### **Analysis of Quality Control Samples**

Each analytical method includes quality control requirements to ensure that the data produced is of known quality. A number of quality control measures are utilized depending on the type of chemistry, sample matrix or data quality objective.

### **Sample Batch**

A sample batch is a group of samples that is carried through an applicable preparation technique and/or analysis, while at the same time, using the same reagents and conditions.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## **Quality Assurance Program**

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### **Calibration**

Instruments and support equipment are calibrated in accordance with the referenced analytical methods.

### **Surrogates (SURR)**

Surrogates are used to evaluate accuracy, method performance, and extraction efficiency in Organic procedures.

### **Internal Standards (IS)**

Internal standards are used to correct sample results affected by column injection losses, purging losses, or viscosity effects.

### **Retention Time Windows**

Retention time windows are used in GC, GC/MS, and HPLC analysis for qualitative identification of single peak analytes.

### **Manual Integration**

Manual integration may be performed to accurately calculate the concentration of a compound in GC, GC/MS, and HPLC methods when it is deemed that, in the analyst's professional opinion, the automated integration was not properly performed. Manual integration is used only when absolutely necessary.

### **Calibration Verification**

A second source standard containing all target analytes is analyzed immediately after each initial curve and on a continuing frequency to verify the validity of the calibration.

### **Method Blank**

The method blank is processed through all applicable preparation steps and is used to document non-contamination of the entire analytical process.

### **Laboratory Control Sample**

The LCS is prepared with analyte-free water or applicable solid matrix and contains the analytes of interest.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## **Quality Assurance Program**

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### **Matrix Spike / Matrix Spike Duplicate**

A matrix spike and matrix spike duplicate are separate aliquots of sample spiked with known concentrations of analyte.

The MS/MSD are matrix-specific quality control samples and are used to assess the bias for accuracy and precision of a method in a given sample matrix.

### **Duplicates**

Applicable to analyses where MS/MSD are not, duplicate samples are analyzed using identical recovery techniques and treated in an identical manner.

The DUP is a matrix-specific quality control sample and is used to assess the bias of a method due to a given sample matrix.

### **Proficiency Testing**

Proficiency testing (PT) samples are used to evaluate the analytical performance and the resulting quality of the data produced. These performance samples are analyzed in addition to routine quality control checks. Performance samples are intended to reflect, as closely as possible, the laboratory performance under normal operating conditions.

Proficiency samples and check samples are submitted to the laboratory by a variety of outside organizations. The concentration of certain analytes is known to the outside organization but not to the laboratory.

The proficiency sample testing programs are typically part of an accreditation process, client QA program or internal Microbac quality program. The Laboratory analyzes the proficiency samples in the same manner as typical analysis. The results are compared to designed limits established by the PT provider as an indication of the overall competence of the labor to perform the analysis.

The **Microbac Laboratories - Chicagoland** laboratory participates in a minimum of two separate PT studies each year for the wastewater, RCRA solids parameters, and drinking water parameters. These are

*STATEMENT OF QUALIFICATIONS*

2007-2008

## **Quality Assurance Program**

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single-blind studies that are scheduled approximately six months apart. PT studies are also performed for a variety of the microbiological procedures performed in the lab.

In addition to the routinely analyzed and scheduled PT samples, unscheduled PT samples may be submitted into the lab for analysis. These blind PT samples may be derived from a client QA program or at the discretion of the QA Director.

### **Training Requirements**

**Microbac Laboratories** management takes the view that employee training is the primary avenue to ensure quality data and services. Training is provided for all personnel involved in making technical decisions, providing service or producing data. Training is accomplished by requiring the personnel involved with each procedure to fully understand the Standard Operating Procedure (SOP) and to become familiar with the theory, as well as the application of the method or process. Training progress reports are kept for each employee and are used as documented evidence of an employee's abilities.

Providing a safe environment in which to work is of prime importance at **Microbac Laboratories**. This is accomplished by properly training employees in regard to safety procedures including the Worker Right-to-Know Program. A safety officer and safety committee is established that is responsible for all safety-related activities.

*STATEMENT OF QUALIFICATIONS*

2007-2008

# Accreditations/ Approvals/Certifications

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**Microbac Laboratories, Inc.** is dedicated to producing data of a known and high quality. This position is demonstrated through participation in numerous accreditation or certification programs. Microbac has earned the following accreditations, approvals and certifications:

- Illinois Environmental Protection Agency for the analysis of wastewater and solid waste in accordance with the requirements of the **National Environmental Laboratory Accreditation Program [NELAP]** (accreditation #100435)
- Illinois Department of Public Health for the microbiological analysis of drinking water (registry #175458)
- Indiana Department of Environmental Management (IDEM) approved support laboratory for solid waste and wastewater analyses (BAA-0203)
- Indiana State Department of Health for the chemical analysis of drinking water (lab #C-45-02)
- Indiana State Department of Health for the microbiological analysis of drinking water (lab #M-45-08)
- Kentucky Environmental and Public Protection Cabinet for the analysis of samples applicable to the Kentucky Underground Storage Tank program (lab #0061)
- North Carolina Department of the Environment and Natural Resources for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations (certificate #597)
- Wisconsin Department of Natural Resources for the chemical analysis of wastewater and solid waste (lab #998036710)

*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Project Management Philosophy***

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### **Project Management Concept**

One of the most critical aspects of our work is client communication. To ensure that the service we provide will meet and exceed our client's expectation, the project management concept is utilized at **Microbac Laboratories**. Each client works with an experienced project manager. The Project Manager will act as a liaison between the client and the laboratory staff in order to ensure that all project requirements are met. The Project Manager will act as a single point of contact for the client and will be involved in the following activities:

- Coordinating project specifications (State, Federal, and other regulatory requirements)
- Coordinating bottle delivery and sample pickups
- Communicating any special project specifications to the laboratory staff
- Providing on-going status reports to the client of sample status
- Reviewing and issuing of the analytical reports in the format specified by the client (PDF via email, EDDs, hardcopy reports, regulatory forms, etc.)
- Providing follow-up communication with the client to ensure that all project requirements were met



In summary, the **Microbac Laboratories Project Manager** is dedicated to meeting and exceeding the client's needs in a consistent, trouble-free manner.

**STATEMENT OF QUALIFICATIONS**

2007-2008

**CAPABILITIES**

The **Microbac Laboratories - Chicagoland** laboratory offers a comprehensive program of field sampling, testing and analysis. Our analytical services support a variety of regulatory programs including: National Pollution Discharge Elimination System (NPDES), Resource Conservation and Recovery Act (RCRA), Superfund Amendments and Reauthorization Act (SARA), Toxic Substance Control Act (TSCA), Occupational Safety and Health Act (OSHA), Hazard Analysis of Critical Control Points (HAACP) and various regulatory consent orders.

**Laboratory**

In support of regulatory programs, **Microbac Laboratories – Chicagoland** is capable of analyzing a wide variety of environmental matrices, food products and microbial materials using the latest in analytical equipment and techniques. Some of the routine services provided by the laboratory are:

**Organics**

TCLP Organics

Semivolatiles

PCB/Pesticides

GC/GCMS/HPLC

Herbicides

Volatiles

**Metals**

TCLP Metals

Total Metals

ICP/ICPMS

Graphite Furnace AA

Low Level Mercury

Cold Vapor Mercury

Hexavalent Chromium

**General/Physical Testing**

BTU, Sulfur, Chlorine

Wet Chemistry

Cations / Anions, TOX

Biological / Chemical Demand

Oil &amp; Grease, Organic Carbon

Solids, Suspended, Volatile, etc.

**Characteristics**

Toxicity

Reactivity

Ignitability

Corrosivity

*STATEMENT OF QUALIFICATIONS*

2007-2008

# CAPABILITIES

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## **Biological**

Total / Fecal Coliform / *E. coli*

Aerobic / Anaerobic Plate Count

Yeast & Mold / Spoilage Organisms

*Salmonella* / *Listeria*

*Legionella* / Staph

## **Field Services**

**Microbac Laboratories** has the ability to provide the field services necessary to ensure our clients needs are met. We strive to develop a thorough understanding of the issues that face our customers. Our approach is simply “Provide a level of service that will exceed client expectations.”

Our Field Services program is designed to assist in any of the following categories:

### **NPDES Permit / Industrial Discharge**



**Microbac Laboratories** can provide for manual and automated sampling to meet specific permit requirements. Flow monitoring and flow evaluations are also available via the use of manual or automated means. Routine sampling and equipment maintenance can be provided along with the required field chemistry analysis.

### **Solid / Hazardous Waste**

**Microbac Laboratories** can provide for waste sampling of piles, drums, vessels, and tanks containing sludges, soils, sediment, liquids, and other matrices utilizing statistical

*STATEMENT OF QUALIFICATIONS*

2007-2008

# CAPABILITIES



sampling methods with specialized sampling equipment. **Microbac Laboratories** can provide for sampling under routine conditions and for special investigations.

## Storm Water Sampling

**Microbac Laboratories** can provide manual and automated options for stormwater sampling. Our field services utilizes the latest in sampling, flow and rain measurement equipment along with the latest software to facilitate complete storm reporting, including sample and flow charting details.

## Ground Water Sampling



**Microbac Laboratories** provides for manual and automated groundwater well sampling options to meet site specific needs. **Microbac Laboratories** will provide for the necessary equipment to purge, sample and perform field parameter analysis.

## Flow Studies

**Microbac Laboratories** provides for flow studies designed to meet clients needs. Using manual or automated equipment, our field staff can provide for open channel, flume, weir, pipe and surface flow measurements including complete reporting and charting.

## Food Safety - HACCP



**Microbac Laboratories** can provide for sampling to meet specific requirements of the food industry. **Microbac Laboratories'** services include shelf life studies, microbial challenge studies, HACCP plan validation and verification, foodborne illness investigations, and vendor quality audits.

## Food Service Sanitation Inspections

**Microbac Laboratories'** sanitation inspections include detailed visual observations, as well as microbiological examinations of food contact surfaces and randomly selected food samples.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## Safety



At **Microbac Laboratories**, we understand our company's responsibility to providing safe conditions for our employees and visitors. Accidents resulting in personal injury and damage to property and equipment represent needless suffering and waste.

It is the policy of Microbac to take all practical steps to safeguard our employees and visitors against injury and accidents. The safety of employees is a prime consideration in the operation of our company.

To foster a safe environment, **Microbac Chicagoland** has developed an extensive Chemical Hygiene Plan (CHP) that complies with the OSHA standard 1910.1450 and details a documented program based on awareness, training and audits that involve all employees.

**As is stated in our CHP, "No client is so important and no job so urgent that we cannot take time to perform our work safely. Employees and visitors are expected to follow safety rules and use the protective equipment provided at all times."**

Through joint cooperation of employees and management, observance of this policy provides for safe working conditions. This cooperation is mutually beneficial to all.

Safety considerations are vital in the performance of the lab. It is the responsibility of each employee to conduct his/her duties within the lab in a manner that ensures compliance with the CHP.

As part of our responsibility, Microbac operates in a manner fully realizing that our activities may have an impact on the world outside of the walls of the laboratory. We believe that in order to fully integrate with the community, we must exhibit certain characteristics and, as such, we strive to:

- ⇒ enhance the public image of this analytical laboratory, its management, and its employees by exhibiting safety awareness and concern for our employees and visitors.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## Safety



- ⇒ be a good member of our community by providing safe and hygienic working facilities and by minimizing any potential threat to our neighborhood and the community at large.
  
- ⇒ maintain compliance with regulatory and ethical standards imposed by governmental or professional agencies.

To ensure feedback, oversight and support for the CHP, **Microbac Laboratories, Inc.** has created a Safety Committee. This Committee is comprised of the Safety Officer and various Microbac staff members. The Safety Committee meets on a regular basis to provide a forum to discuss safety concerns, share information, and allow the Safety Officer to disseminate policy and practical ideas.

The CHP provides guidance for the activities within the lab and, therefore, specific measures are implemented such as:

### Employee Information and Training

The company will provide employees with information and training to ensure that they are apprised of the chemicals and hazards that are present in their work area. All new employees are given initial safety training conducted by the Safety Officer or a designee.



#### Employee training includes:

- Hazardous chemical awareness
- The physical and health hazards of chemicals
- The measures employees can take to protect themselves from hazards
- Details of the **Microbac Laboratories, Inc. Safety Plan**
- The location, availability and proper use of protective apparel and personal protective equipment
- The location, availability and proper use of emergency equipment

**STATEMENT OF QUALIFICATIONS**

2007-2008

# Safety



## Audits

Safety Audits are integral to ensuring compliance to the CHP. Topics covered in the various sections of the safety audit checklist include:

- General Storeroom and Laboratory Safety
- Material Handling in Storeroom and Laboratory
- First Aid Supplies and Medical Services
- Fire Protection and Emergency Equipment
- Personal Protective Equipment and Safety Equipment
- Spill Equipment / Supplies

## Facility Requirements

Documented in the CHP are specific requirements for facility and materials handling, including:

- Design
- Maintenance
- Usage
- Ventilation / Hoods
- Chemical Storage
- Chemical Labeling / MSDS
- Container labeling

## Other Safety Considerations

Also documented in the CHP are general guidelines and procedures for the following laboratory functions:



- Fire Prevention
- Eyewash Safety showers
- First Aid
- Spill Control
- Waste Handling
- Housekeeping
- Environmental Monitoring
- General Safety Practices
- Chemical Procurement and Inventory Control
- Electrical Safety
- Compressed Gas Safety

*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Facility and Equipment***

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### **Facility**

The Chicagoland facility is located at 250 West 84<sup>th</sup> Drive, Merrillville, Indiana, 46410. The 12,000 square foot building (see diagram on next page) was designed to optimize production flow, safety, and quality control while at the same time not invalidate or adversely affect the test results. Environmental conditions are controlled with a HVAC system and cleanliness to ensure the proper functioning of computers and instruments as to maintain the integrity needed to supply acceptable calibration and test data. Separate and adequate areas are provided for sample preparation, analysis, reagent storage, as well as general storage and office areas.

The air-handling system(s) for the laboratory was specifically designed to protect personnel and sensitive instruments, as well as ensure that samples are not contaminated. An assortment of fume hoods are utilized to minimize contamination and protect the staff. In addition, sample preparation and instrumental analyses are performed in separate rooms, with particular attention to isolation of organic vapors from analytical areas. Good housekeeping measures are taken to ensure that the laboratory facility is maintained in a clean and orderly condition. These include, but are not limited to, putting samples away when finished, wiping the counter tops clean after use, cleaning the surface of equipment as needed, and weekly janitorial service.

When performing analytical procedures in the field, care is taken to provide adequate conditions for analytical testing. These steps include using laboratory pure water generated at the main lab, approved test kits, and quality control elements similar to those employed while performing an analytical procedure at the main facility.

Individual refrigerators, including a walk-in style cooler, are available for the separated storage of samples from standards, standards from reagents, and to eliminate a problem of cross contamination between sample types. These storage areas allow for the storage of samples according to the conditions specified in the reference methods.

STATEMENT OF QUALIFICATIONS

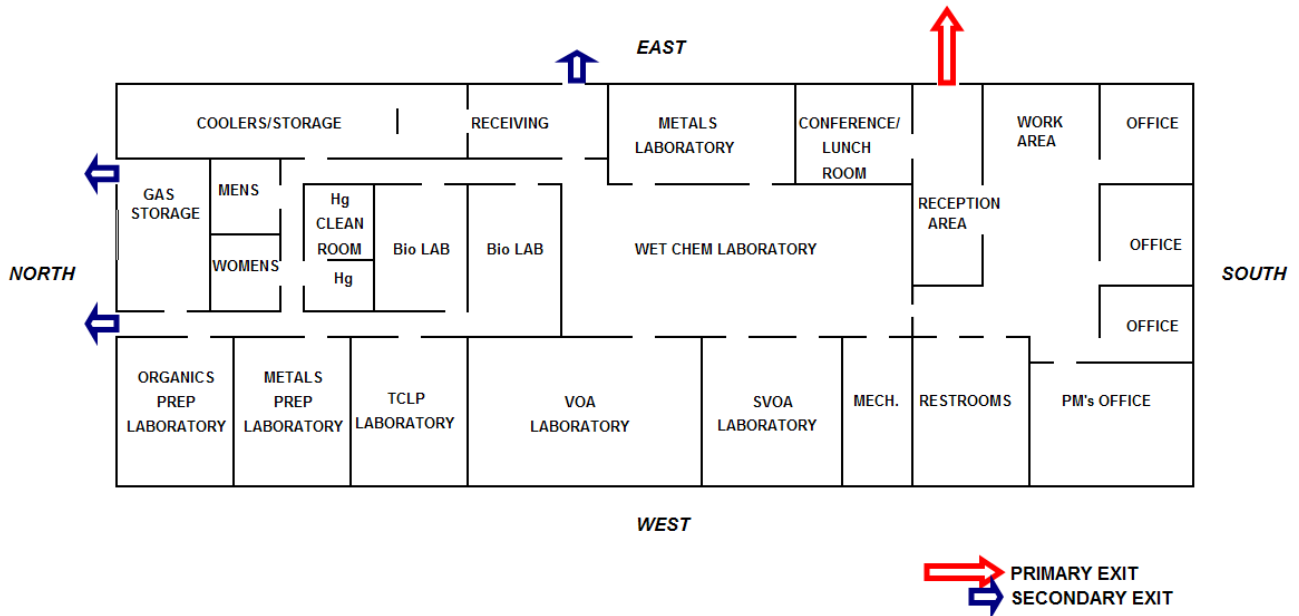
2007-2008

# Facility and Equipment



The Chicagoland facility is a secured facility with restricted entry. The reception and sample receiving entrances are staffed during normal business hours. All other entrances remain locked. Visitors, clients, and maintenance personnel requiring access beyond the reception and sample receiving entrances are required to sign-in and sign-out of a visitor logbook that is maintained in the reception area. All doors to the facility are locked after normal working hours.

## Chicagoland Division Laboratory



*STATEMENT OF QUALIFICATIONS*

2007-2008

## **Facility and Equipment**



### **Major Equipment**

**Microbac Laboratories** will continually evaluate equipment needs and equipment advances in an effort to meet project and regulatory requirements.

### **Major Equipment List Microbac Laboratories , Chicagoland**

#### **Organics**

HP5890 Series II GC  
HP5971 Mass Selective Detector  
Tekmar 3000 Concentrator  
Solatek 72 Autosampler  
HP5890 Series I GC  
HP5971 Mass Selective Detector  
Tekmar 3000 Concentrator  
Solatek 72 Autosampler  
HP5890 Series I GC  
HP5972 Mass Selective Detector  
Tekmar 3000 Concentrator  
Tekmar 2016 ALS  
HP5890 Series II GC  
HP5970 Mass Selective Detector  
Tekmar 2000 Concentrator  
Tekmar 2016 ALS  
HP5890 Series II GC  
HP5971 Mass Selective Detector  
Tekmar 3100 Concentrator  
Solatek 72 Auto Sampler  
HP5890 Series II GC  
HP5972 Mass Selective Detector  
HP7673 ALS  
HP5890 Series II GC  
HP5972 Mass Selective Detector  
HP7673 ALS  
HP6890 + GC  
HP5973 Mass Selective Detector



*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Facility and Equipment***

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### **Major Equipment List Microbac Laboratories , Chicagoland**

#### **Organics**

HP7683 ALS  
HP5890 Series II GC  
HP5972 Mass Selective Detector  
HP7673 ALS  
HP5890 Series II GC  
2 Electron Capture Detectors  
HP7673 ALS  
HP5890 Series II GC  
2 Electron Capture Detectors  
HP7673 ALS  
HP5890 Series II GC  
Flame Ionization Detector  
HP7973 ALS  
HP5890 Series I GC  
Flame Ionization Detector  
HP7973 ALS  
HP HPLC Series 1050  
HP1050 UV Detector/HP1046A Fluorescence Detector  
2 Zymark TurboVap II Concentrators  
2 Fisher 550 Probe Sonicators  
International Centra-HN Centrifuge  
Continuous LLE Glassware  
Denver XL-500 Top Loading Balance  
Ohaus Navigator N12120 Top Loading Balance  
Frigidaire Freezer  
White Westinghouse Refrigerator/Freezer  
2 Whirlpool Estate Refrigerator/Freezers  
General Electric Freezer  
Hotpoint CTA12CLF Refrigerator /Freezer  
Whirlpool Refrigerator/Freezer  
Fisher Isotemp 506G Drying Oven

*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Facility and Equipment***



### **Major Equipment List Microbac Laboratories , Chicagoland**

#### **Inorganics (Metals)**

TJA IRIS Advantage ICP-AES  
Thermo TRACE ICP-AES  
CETAC M-6000A Mercury Analyzer  
CETAC M-7500 Mercury Analyzer  
Perkin-Elmer Elan 9000 ICP-MS  
Varian 220Z GFAAS  
Environmental Express EE54 Block Digestion Unit  
Environmental Express EE54 Block Digestion Unit  
3, 8-place TCLP/ZHE Tumbler Units  
12-place TCLP/ZHE Tumbler Unit  
Box-style TCLP Tumbler Unit  
AND HR-120 Analytical Balance  
Mettler BB-300 Top Loader Balance

#### **Wet Chemistry**

2 Lachat QuikChem 8000 Flow Injection Analyzers  
YSI Model 5100  
Orion Model 122 Conductivity Meter  
Fisher Scientific Accumet 25 pH Meter  
Orion 720A Ion Meter  
2 Mettler AE-100 Analytical Balances  
Denver XL-1800 Top Loading Balance  
Mettler AE-100 Analytical Balance  
2 6-place SPE Units (for HEM by 1664)  
3 Pensky-Martens Closed Cup Flashpoint Testers  
2 Barnant Thermocouple Thermometers #600-1040  
Thermolyne 1400 Muffle Furnace  
Thermolyne 6000 Muffle Furnace  
Fisher 655-F Drying Oven  
Precision 45EG Drying Oven  
Fisher Isotemp 750F Drying Oven  
2 Fisher Scientific Model 307 BOD Incubators  
Bioscience COD Reactor  
Hach Model 45600 COD Reactor  
Lachat BD-46 Block Digestor



*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Facility and Equipment***



### **Major Equipment List Microbac Laboratories , Chicagoland**

#### **Wet Chemistry**

Midi Distillation Unit  
Thermo UV-Vis Spectrophotometer  
Kontes Midi Distillation Unit  
Barnstead/Thermolyne 2200 Hot Plate  
2 Barnstead/Thermolyne Mirak Hot Plates  
General Electric Refrigerator / Freezer  
Cannon Constant Temperature Bath  
Parr Oxygen Bomb Calorimeter 1341EB  
Miscellaneous distillation glassware, stir plates and other labware

#### **Microbiology**

Equatherm Incubator  
Hach 16E Incubator  
Fisher IsoTemp 655D Incubator  
Napco Water Jacketed Incubator  
Blue M 200A Incubator  
Scientific Products 13100 Water Bath  
2 Precision 253 Water Baths  
Frigidaire FPCI-152T-7 Refrigerator/Freezer  
Kelvinator MRT18BRBW1 Refrigerator/Freezer  
White-Westinghouse MRT18BRBW2 Refrigerator/Freezer  
2 Market Forge Sterilmatic Autoclaves  
Denver XL-500 Top Loading Balance  
Mettler P1000 Top Loading Balance  
2 Millipore 3-place Filtration Units  
Blak-Ray UVL-56 UV Lamp  
New Brunswick C-110 Dark Field Colony Counter  
Fisher Micromaster Microscope  
Fisher Stereomaster II SPT-ITH Microscope  
Leitz Laborflux D Microscope  
XSP 10 Series Microscope



*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Facility and Equipment***



### **Major Equipment List Microbac Laboratories , Chicagoland**

#### **Miscellaneous**

2 NIST Traceable Mass Sets  
ERTCO NIST Traceable Thermometer -20 to 110oC in 1oC increments  
ERTCO NIST Traceable Thermometer 0 to 205oC in 0.2oC increments  
ERTCO NIST Traceable Thermometer 25 to 55oC in 0.1oC increments  
Raytek Raynger ST Noncontact Thermometer  
TAFCO 9X12' Walk-in Cooler  
7 TRUE Model GDM-72 Reach-in Coolers  
Hot Point CTA14CTB Refrigerator / Freezer  
General Electric TB12MCC Refrigerator / Freezer  
2 Culligan Water Treatment System (includes Soft-Minder Twin Water Conditioner (salt softening), Organic removal (carbon treatment), 5 micron particulate removal, Series E Reverse Osmosis, mixed-bed ion removal, and 0.05 micron particulate removal)



#### **Field Services**

Various ISCO 6700 Wastewater Samplers  
Various ISCO 3700 Wastewater Samplers  
Various ISCO 2900 Wastewater Samplers  
Orion 210 pH Meter  
Orion 230 pH Meter  
Orion 290A Ion Meter  
Hach Model 2100P Turbidimeter  
Hach Chlorine Test Kits (58700-00)  
Miscellaneous Stainless Steel and Teflon sample collection and mixing equipment  
2 Soil augers (1 open and 1 closed)  
Ekman Bottom Grab (dredge) Sampler  
Columbia Weather Systems Capricorn 2000 Weather Station

*STATEMENT OF QUALIFICATIONS*

2007-2008

# Testing & Reporting Capabilities

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## Testing Routines

### Standard Testing

Standard testing includes performing analyses using well established methods, or methods which have been validated for the matrix being analyzed. Whenever possible, “official” or “standard” methods are used. Official methods are those required for compliance with government regulations, such as the methods mandated by the EPA for drinking water, wastewater, solid waste, and air. Standard methods are those established by standard-setting organizations, such as the American Public Health Association (APHA), the American Water Works Association (AWWA), the Water Pollution Control Federation (WPCF), the American Society for Testing and Materials (ASTM) or the Association of Official Analytical Chemists (AOAC). These methods have been subjected to rigorous validation studies and inter-laboratory collaborative testing, and are considered very reliable.

Occasionally, a client will request that we test samples by a method furnished by the client, which is neither official nor standard. We will comply with the client’s request with the provision that we cannot guarantee accuracy or reproducibility of results unless a validation study is conducted. In other cases, we have developed our own in-house methods of analysis. A validation study is required before the method is authorized for use in standard testing. We have a formal documented procedure by which permission is granted to our laboratory personnel to use a new or modified method in this type of testing. Permission to use alternate methods may only be granted by the Laboratory Manager, Laboratory Supervisor or Technical Director.

STATEMENT OF QUALIFICATIONS

2007-2008

# Testing & Reporting Capabilities



## Reporting of Results

When all analyses are completed and reviewed by the laboratory staff, the report is reviewed and approved by the Project Manager. A copy of the report is mailed to the client.

At a minimum, the report will contain:

- Signature Page
- Workorder Summary
- Narrative (If required due to non-routine items)
- Results
- Quality Assurance Data
- Footer Information
- Cooler Inspection Form
- Chain of Custody

## Quality Control Reporting

All data reported by **Microbac Laboratories** is reviewed by the laboratory and project management prior to release. All batch and sample specific quality control data is made available via the Omega LIMS. In addition to the standard reporting parameters, **Microbac Laboratories** can provide specialized quality control reports to meet a variety of regulatory and project specific needs. Quality control report options include:

- Level II (Summary Data)
- Level III (Summary and Raw Data)
- Level IV (Complete Data Packaging)
- Level IV CLP (Complete Data Packaging including CLP Forms)

STATEMENT OF QUALIFICATIONS

2007-2008

# Testing & Reporting Capabilities



## Reporting Turnaround Time

We recognize that one of the most important aspects of the services we offer is “**turnaround time**”. Under most circumstances, turnaround time indicates the time which elapses between the receipt of a sample at the laboratory and the report of the final results. However, in reality, the true turnaround time begins when the sample is taken. **Microbac Laboratories** works to coordinate sampling events and sample pick-up at times that are convenient for our client. Our normal turnaround time is about 5 – 7 business days. For most projects, arrangements can be made to accelerate the turnaround as required by project needs.

When expedited turnaround time is required, please discuss your needs with your Project Manager. Every effort will be made to expedite results. We understand how important timely data is to the decision process. We will work to ensure that every possible option is explored to ensure that the data required is available. Rapid turnaround time can be facilitated by personal delivery of samples to the laboratory or pick-up of samples by our personnel. Reporting of results by telephone, overnight delivery, facsimile or electronic deliverable (EDD) can also be utilized to expedite results. Requests for expedited results will be honored whenever possible. All data reported via non-hard copy methods will be confirmed by formal mailed reports.

## Special Testing



This type of work includes analyses for which standard methods are not available, or are available for a matrix other than the samples being considered. This type of work is only performed if we are convinced, on the basis of our best professional judgment, that our resources and expertise are sufficient to assure a reasonable probability of success.

## Work-Flow Routing

Special Testing analyses are generally brought to the attention of the laboratory by either the client or our project manager. The Laboratory Supervisor or Laboratory Director will make the decision whether to attempt the analyses. If the decision is made to proceed, the workflow will follow the general outline used for standard testing.

*STATEMENT OF QUALIFICATIONS*

2007-2008

# Testing & Reporting Capabilities

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## Reporting of Results

Results are reported in a manner similar to that of our standard testing. If the methods used are markedly different from those used in standard tests, a narrative explaining the methods is prepared. Any difficulties and/or special techniques or precautions are also reported, as well as any interpretive information that may be necessary to understand the results.

## Information Management (LIMS)

**Microbac Laboratories** has integrated the Omega LIMS (Laboratory Information Management System) into every aspect of our operation. The Omega Software Package has been customized to allow for rapid access to project information, QC Data and client information. The networked system is fully integrated and can allow for project quotation, scheduling for bottle/supply shipments, sample log-in, direct data acquisition from laboratory instrumentation, data computations, status reports, final reports and complete data deliverables.

Each function of the LIMS is fully integrated to allow a seamless information flow from project development, to the analyst, to the report, while ensuring data quality and consistent formatting and security.

With the support of an in-house Information Systems Manager, **Microbac Laboratories** can accommodate individualized reporting formats and Electronic Data Deliverables.

## STATEMENT OF QUALIFICATIONS

2007-2008

# Testing & Reporting Capabilities



## EDDs (Electronic Data Deliverables)

**Microbac Laboratories, Inc.** can create EDDs of all types so our clients do not have to manually enter data into their databases. **Microbac Laboratories** has an IT group that is dedicated to providing data in electronic formats that our clients specify. This data can be generated into simple excel tables or more complex customized files that can be downloaded directly into our client's databases. Below are just a few examples of the EDDs that we offer:

- Standard Excel Files
- Access database files
- ASCII
- EQUIS
- GISkey
- Specific State Required EDDs (IDEM, IEPA, etc.)
- "Hits Only" format
- CrossTab format

In addition to providing EDDs, Microbac also offers the option to have all signed analytical reports and data packages delivered in CD-ROM rather than on paper.

WO	Sample ID	Client ID	Test	TestNo	Analyte	Results	RLimit	Units	Matrix
ME0406064	03B	Outfall 012	Total ICP Metals	E200.7_r3_83	Aluminum	0.19	0.1	mg/L	Aqueous
ME0406064	03B	Outfall 012	Total Cadmium by GFAA	E213.2_r3_83	Cadmium	ND	0.0005	mg/L	Aqueous
ME0406064	03A	Outfall 012	CHLORIDE	M4500-Cl_B_19Ed	Chloride	34	1	mg/L	Aqueous
ME0406064	03B	Outfall 012	Total ICP Metals	E200.7_r3_83	Chromium	ND	0.003	mg/L	Aqueous
ME0406064	03B	Outfall 012	Total ICP Metals	E200.7_r3_83	Copper	ND	0.005	mg/L	Aqueous
ME0406064	03B	Outfall 012	Total ICP Metals	E200.7_r3_83	Iron	0.55	0.05	mg/L	Aqueous
ME0406064	03B	Outfall 012	Total Lead by GFAA	E239.2_r3_83	Lead	ND	0.005	mg/L	Aqueous
ME0406064	03B	Outfall 012	Total ICP Metals	E200.7_r3_83	Nickel	0.012	0.01	mg/L	Aqueous
ME0406064	03A	Outfall 012	TOTAL SUSPENDED SOLIDS	E160.2_r3_83	TSS	2.2	1	mg/L	Aqueous
ME0406064	03B	Outfall 012	Total ICP Metals	E200.7_r3_83	Zinc	ND	0.02	mg/L	Aqueous
ME0406064	01A	Outfall 012	OIL & GREASE (Solid Phase Est	E1664A	Oil & Grease (HEM)	ND	5	mg/L	Aqueous

*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Project Experience***

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**Microbac Laboratories** has accumulated a wide variety of project experience with the manufacturing, environmental and food industries.

***In East Chicago, Indiana, Microbac Laboratories*** has provided the analytical support for a USEPA Region V mandated site investigation. The project was conducted in accordance with the requirements of an approved ***Quality Assurance Project Plan***.

Microbac provided daily sample pickup and expedited turnaround on critical results. Extended Data Deliverables and EPA Level IV Data Packaging were an essential part of this project.

***In Rochester, Indiana,*** under the direction of an internationally recognized environmental engineering firm, **Microbac Laboratories** provided the analytical services necessary to complete Phase II of a large scale remedial project. **Microbac Laboratories** tasks included coordinating the sample preparation and deliveries to this remote site. EPA Level III QA/QC reporting was required. Certain critical results were expedited for 24-hour turnaround times. Data was electronically delivered.

***In Michigan City, Indiana, Microbac Laboratories*** conducted the analysis required by the USEPA Region V - Emergency Response Task Force. **Microbac Laboratories** provided the expedited turnaround times necessary for the characterization of numerous “unknown” wastestreams at an abandoned oil recycling facility. EPA Level IV Data Packages were required for this project.

***In the Joliet, Illinois area, Microbac Laboratories*** was the primary environmental facility involved in one of the very first United States Government Arsenal cleanups. The Chicagoland laboratory coordinated activities with the engineer/consultant selected by the Real Estate Investment Trust (REIT) development company. Activities included daily sample pickups, bottle order delivery, 24-hour turnaround time and EDDs. An analysis was made on explosives using EPA Test Method 8330.

***In Illinois, Microbac Laboratories*** assisted one of the world’s largest petrochemical and polymer companies with the development and writing of a critical Fuels Exclusion Permit Request. This request was submitted

STATEMENT OF QUALIFICATIONS

2007-2008

## Project Experience

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to the Illinois Environmental Protection Agency and allowed the facility the ability to remain open and profitable. The Chicagoland laboratory continues to assist this company and its facilities with their NPDES permits.

**In Detroit, Michigan, Microbac Laboratories** supported a Federal Emergency Response Contractor in conducting the analytical testing necessary for the characterization and disposal of multiple hazardous waste streams. The Chicagoland laboratory provided expedited turnaround times for the analysis and generated the extended data packaging requested (EPA Level IV Data Packaging). Electronic Data Deliverables (EDDs) were instrumental in transferring the analytical reports to the on site coordinators.

**Microbac Laboratories'** staff also has experience providing routine and non-routine solid waste sampling in support of waste profile analysis at a variety of industrial facilities throughout the Northwest Indiana and Chicagoland area. **Microbac Laboratories'** staff has also worked with various industries to establish written Waste Sampling and Analysis Plans as part of routine and non-routine sampling protocols.

### NPDES

**Microbac Laboratories** works with a variety of industrial and municipal clients in support of sampling and analysis to meet NPDES permit requirements. In addition to routine sampling and analysis, Microbac has partnered with our clients to support the full realm of NPDES needs. Additional services supplied by Microbac include system installations, equipment maintenance, advanced data management, summary compliance reports.

Microbac supports the NPDES needs of an integrated steel mill by supplying daily inspection, maintenance and sampling of multiple outfalls. The Merrillville laboratory performs all of the analysis. The resulting data is electronically uploaded to a permit verification software created by Microbac to quickly identify any exceedances or trends in the data. The final data is uploaded to the facility reporting software for report preparation and signature by plant staff.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## *Project Experience*

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Microbac supports the NPDES needs of a finishing steel mill by facilitating a complete data management system. Microbac personnel provide for inspections and field support while plant personnel provide for the analytical at an “in-house” laboratory. Microbac receives all data as produced by the in-house lab and prepares a daily executive summary. This summary is distributed to the management staff of the mill as a review of regulatory compliance. Microbac maintains all of the data in electronic format and produces the necessary monthly NPDES regulatory reports.

**Microbac Laboratories’** staff has assisted various industries to establish written sampling plans to meet the requirements of local and state regulators. Among the plans prepared by Microbac are Waste Analysis Plans (WAP) detailing the production, sampling, analysis, transport and disposal of waste streams from manufacturing facilities. WAP generally support a facility RCRA plan. Microbac has also prepared Self Monitoring and Data Reporting Quality Assurance plans (SMDRQAP) that detail the NPDES compliance plan for a facility. Both types of documents are utilized by the environmental management staff as training tools, regulatory audit support and procedural manual.

**Microbac Laboratories** has assisted one of the world’s largest petrochemical and polymer companies with the analytical testing required to meet NPDES requirements at multiple facilities. **Microbac Laboratories’** tasks include weekly pickups and delivery of sampling materials, expedited data, including Electronic Data Deliverables (EDDs), data summary spreadsheets and coordination of special projects.

### **Regulatory**

**Microbac Laboratories** has participated as a support laboratory in a wide variety of projects directed by the Indiana Department of Environmental Management. All data is reported directly to IDEM with complete Level IV data packages.

**Microbac Laboratories** has supported the EPA Region V TSCA office on a variety of projects involving PCB analysis for regulatory compliance and investigation. All data is reported directly to Region V with complete CLP-like Level IV data packages.

STATEMENT OF QUALIFICATIONS

2007-2008

## Project Experience

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### Food Safety & Sanitation

**Microbac Laboratories** has a wide variety of project experience in the areas of food safety and sanitation.

*In the Chicagoland region, Microbac Laboratories* provides routine analytical monitoring of high-risk foods and production areas for a large, widespread, multi-state food retailer. Microbac's data is used to direct the corporation's food sanitation program. There is a strong advisory and educational component provided to the client to enhance their food safety.

*In south Chicago, Microbac Laboratories* provides third-party auditing, and analytical testing of product-contact surfaces for compliance with USDA regulations. The audit functions help highlight areas of deficiency which may compromise product safety.

*In northwest Indiana, Microbac Laboratories* conducts routine analysis of environmental monitoring samples to support the manufacturer's HACCP program. Microbac also provides product-specification analysis for microbial and food chemistry parameters to assure compliance with the purchaser's requirements.

*In Chicago, Illinois, Microbac Laboratories* furnished nutritional labels to a major ethnic food producer. The nutritional labels included analysis for the 2006 trans fat labeling requirement.

*In northwest Chicago, Microbac Laboratories* performed environmental surface swabs for the analysis of salmonella and Enterobacteriaceae to support proper plant sanitation and the plant's HACCP program.

Microbac Laboratories, Inc.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## **Resumes of Management Team**

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### **ROBERT S. CROOKSTON, CHMM Managing Director**

**EDUCATION:**

B.S., Biology *Cum Laude*, The University of Akron, Akron, Ohio 1989

**PROFESSIONAL EXPERIENCE:**

Mr. Crookston, as Managing Director, has responsibility for day-to-day operations at the Merrillville laboratory. He is responsible for all analyses, quality assurance, method development, reports, project management, information systems, and human resources.

Mr. Crookston has extensive environmental analytical chemistry experience, including many years as Laboratory Director. He has experience in numerous analytical and field sampling projects for clientele in the steelmaking, electric utility, waste disposal, chemical and automotive industries.

1999            Technical Director-Core Laboratories, Valparaiso, Indiana

Responsible for development and implementation of Quality Management Plan, Quality Assurance Plan and Technical specifications. Provided consultation to clientele in areas of regulatory compliance. Interacted with State and Federal compliance officers. Assisted laboratory personnel with production, quality and procedural issues.

1990-1999    Laboratory Director-Environmental Control Laboratories, Strongsville, OH

Responsible for coordination of all production, quality and safety activities of a full service environmental testing laboratory. Responsible for development and implementation of company policies, Quality Management Plan, Safety and Hygiene Plan and Technical specifications. Provided consultation to clientele in areas of regulatory compliance. Interacted with State and Federal compliance officers.

Microbac Laboratories, Inc.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Resumes of Management Team***

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**Robert S. Crookston** - continued

1989-1990    Laboratory Technician, Envirite Corporation, Canton, Ohio  
Responsible for De-Listing analysis of inorganic sludge.

1988-1989    Laboratory Tester, Ohio Edison, Akron, Ohio  
Responsible for performing Environmental, Boiler and Metallurgical Chemistries

1986-1988    Laboratory Technician, Virginia Electric Power Company, Richmond VA  
Responsible for performing Environmental and Boiler Chemistries

Certified Hazardous Materials Manager Master Level (Cert # 12230)  
40 Hour OSHA Hazardous Materials Certified  
Confined Space Certified

Microbac Laboratories, Inc.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## **Resumes of Management Team**

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### **RONALD J. MISIUNAS** **Client Services Manager**

**EDUCATION:**

B.S., Biology - University of Illinois (Champaign-Urbana, IL)

A.A.S., Biology - South Suburban College (South Holland, IL)

**PROFESSIONAL EXPERIENCE:**

Mr. Misiunas accepted the position of Client Services Manager in February of 2002. He is responsible for all aspects of Client Services, including project management, report generation, and overall customer service. Mr. Misiunas has extensive experience in the environmental testing industry. In addition to several years of project management experience, Mr. Misiunas also has a strong technical background that comes from working and managing both the organic and inorganic areas of the environmental laboratory. Mr. Misiunas also has significant experience in the following areas;

- State programs such as the Illinois TACO, Wisconsin, Indiana, Ohio and Michigan requirements.
- Electronic Data Deliverable requirements (EDDs) – Both commercially available formats (EQUIS, IRPMS, GIS Key, etc) and customized client specific deliverables that are often required by engineering/consulting firms.
- Member of S.A.M.E (Society of Military Engineers)

1999 – 2002 Project Manager - Severn Trent Laboratories, University Park, IL

Responsible for the overall project management of several large Engineering/Consulting and Industrial clients both locally (Chicago metropolitan area) and nationally. Other responsibilities included developing sales and marketing strategies for the company.

1997 – 1999 Organics Manager – Core Laboratories, Inc., Valparaiso, IN

Responsible for developing and managing the organics department at the Valparaiso, IN laboratory. These capabilities within the organics department included volatiles and semivolatiles by GC/MS, PCB/pesticides and TPH analysis by GC, and PNAs by HPLC.

1994 – 1997 Organic Analyst – Roy F. Weston/RCRA Labnet, University Park, IL

Responsible for method development, analysis, and report generation within the GC/MS Semivolatile group.

1990 – 1994 Inorganic Analyst – Roy F. Weston, University Park, IL

Responsible for method development and analytical production within the wet chemistry group utilizing gravimetric, potentiometric, and automated methods for several inorganic parameters.

Microbac Laboratories, Inc.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## **Resumes of Management Team**

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### **JEFFREY M. LOEWE** **QA/QC Director**

**EDUCATION:**

B.S., Chemistry, University of Dubuque, Dubuque, Iowa 1987

**PROFESSIONAL EXPERIENCE:**

Mr. Loewe is responsible for the overall coordination of the Quality Assurance program at the Merrillville laboratory. He is responsible for the laboratory's accreditations, and ensuring adherence to all aspects of the Quality Assurance Plan. These aspects include documentation systems, analytical compliance, performance samples, training records, and internal audits.

Mr. Loewe has extensive laboratory experience, including many years in the environmental industry. He has experience as an analyst, in procedural training, laboratory set up, project management, and in various laboratory certification standards.

1999-2001    QA/QC Director-PDC Laboratories, Peoria, Illinois

Responsible for the overall Quality System of the laboratory. Implemented a NELAC compliant QA program, which was approved by the US Army Corps of Engineers. Responsible for staff supervision and the implementation of a new Laboratory Information Management System (LIMS).

1990-1999    QA/QC Coordinator-Daily Analytical Laboratories, Peoria, Illinois

Responsible for maintaining State certification and the implementation of the Quality Assurance Plan. Served as a project manager and coordinator of a monthly wastewater quality control program. Also responsible for training records and Standard Operating Procedure generation.

1988-1990    Chemist, Daily Analytical Laboratories, Peoria, Illinois

Responsible for various analyses of environmental samples.

1985-1988    Chemist, Midwest Grain Products, Dubuque, Iowa

Responsible for analyses on raw materials and finished product.

Microbac Laboratories, Inc.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Resumes of Management Team***

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### **TROY M. GOEHL** **Supervisor Inorganic Analysis**

**EDUCATION:**

B.S. Chemistry, Quincy University, Quincy, Illinois (1996)

**PROFESSIONAL EXPERIENCE:**

Mr. Goehl supervises Inorganic and Microbiology labs for the Merrillville facility. He is responsible for the daily activities of employees within the wet chemistry, inorganic and microbiology department. Mr. Goehl's expertise in the analysis of samples by ICP, ICP-MS, GFAA and CVAA are critical in helping this group to fully utilize the equipment/instrumentation available.

2000 - 2001 Trace Metals Analyst -Pace Analytical Services, Lenexa, Kansas

Responsible for the analysis of samples by ICP, GFAA and CVAA. Responsible for the troubleshooting of these instruments and sample matrix problems. Also prepared TCLP, wastewater and soil samples. Assembled Data Packages for client data and updated SOP's for NELAC Compliance.

1999 - 2000 Trace Metals Lab Manager-PDC Laboratories, Peoria, Illinois

Responsibilities included the oversight of fourteen employees on a daily basis. Coordinated the purchasing of new equipment, supplies, maintenance and repair of equipment for this section. Troy also hired and trained new employees. Coordinated and managed projects for internal and external clients.

1996 - 1999 Staff Scientist-PDC Laboratories, Peoria, Illinois

Responsibilities included ICP, ICP-MS, GFAA and CVAA analysis for metals. Prepped and digested TCLP, wastewater and soil samples. Mixed and conducted treatability studies for hazardous waste samples.

Microbac Laboratories, Inc.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Resumes of Management Team***

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### **NANCY TAVITAS Organics Unit Supervisor**

**EDUCATION:**

B.S. Chemistry, Purdue University, Hammond, Indiana (1985)

**PROFESSIONAL EXPERIENCE:**

Mrs. Tavitas is the Organics Manager for the Merrillville laboratory. She is responsible for overseeing the analysis/extraction of Volatiles, Semi-Volatiles, GC and HPLC environmental samples. She is the primary analyst of GC/MS Volatiles.

She was previously employed for two years at Recra/Weston as supervisor of the GC Volatiles group. Prior to Recra/Weston, she was employed for five years as QA officer and supervisor of the Organics department of the ATEC Laboratory in Highland, Indiana. Previously, she was employed at Weston/Gulf Coast Laboratories for five years. She has also been a Chemistry laboratory instructor for several terms at Purdue University Calumet.

Her fields of competence include: GC/MS Volatile and Semi-Volatile analysis; GC purge and trap Volatile analysis by PID/ELCD; GC/ECD analysis of PCBs, Pesticides and Herbicides and sample extraction of same; total petroleum hydrocarbons analysis by GC/FID; operation of TOX and TOC analytical instruments; HPLC analysis of various organic compounds; QA/QC as applied to Standard Methods, USEPA CLP protocol, EPA SW846 and EPA 400/500/600 series methodologies; computerized database laboratory management; flame AA metals analysis by acetylene flame, nitrous oxide and hydride methods; set-up and maintenance of laboratory instruments and equipment; method development and procedural writing; and wet analytical methods.

Microbac Laboratories, Inc.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Resumes of Management Team***

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### **MIKE D. CHENOWETH** **Field Services Manager**

**EDUCATION:**

B.S. Geology, Southern Illinois University, Carbondale, Illinois, 1989

A.S. Chemistry, Rend Lake College, Ina, Illinois, 1987

**PROFESSIONAL EXPERIENCE:**

Mr. Chenoweth is responsible for the overall coordination of field activities at the Merrillville laboratory. He is responsible for the daily operations of the field crew, delegating sample collection and pickups in a timely manner, monitoring safety and equipment training, and implementing all elements of the customer care policy.

Mr. Chenoweth has served in the environmental industry since 1990, including eight years of direct laboratory experience. His background includes experience as a GC/wet chemistry analyst, project manager and field service technician. He is also 40 hour OSHA certified.

1998-2001     Wet Chemistry Analyst/Field Services, Severn Trent Laboratories, Valparaiso, Indiana  
Responsible for sample log in and control, field services, TCLP setup and extraction.

1995-1998     Geologist/Bioremediation Application Specialist, Environmental Solutions Group, Crown Point, Indiana  
Responsibilities included design and application of insitu bioremediation systems, and creation of reimbursement packages for Illinois/Indiana L.U.S.T programs for clients.

1992-1995     Geochemist, Innovative Probing Solutions, Mt. Vernon, Illinois  
Responsibilities included operation of Geoprobe sampling equipment and onsite GC analysis of samples obtained at over 250 LUST/RCRA sites.

1990-1992     Wet Chemistry Analyst/Field Services, Applied Research and Development Laboratories, Mt. Vernon, Illinois  
Responsibilities included wet chemistry analysis with field service activities.

Microbac Laboratories, Inc.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Resumes of Management Team***

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### **KAREN A. ZIOLKOWSKI** **Senior Project Manager (Microbiology)**

**EDUCATION:**

B.S. Medical Technology, University of Pittsburgh, Pittsburgh, PA

**PROFESSIONAL EXPERIENCE:**

Karen began her employment with Microbac Laboratories, Inc. in 1985. Currently, as Senior Project Manager she maintains client services for all food and sanitation related industries, which include project management, report generation and overall customer service. Ms. Ziolkowski has detailed knowledge of FDA Food Code, FDA FSIS, IAMFES Hazard Analysis Critical Control Point Systems, and Safe Drinking Water Act regulations. Karen provides sanitation consultations and inspections for food manufactures, supermarkets and retail establishments.

1986 – 2004 Laboratory Director, Microbac Laboratories Hammond Division  
Responsible for coordination of all aspects of laboratory activities: production; quality assurance; safety and chemical hygiene; human resources and information systems. Developed sales and marketing strategies, which increased the existing client base and developed new markets for expanding; offered analytical parameters for both the environmental and food industries.

1992 – 1994 Corporate QA/QC Committee Chairman, Microbac Laboratories

1989 – 1990 Corporate Safety Chairman, Microbac Laboratories, Inc.

1985 – 1986 Laboratory Analyst, Microbac Laboratories, Inc.

1981 – 1985 Blood Bank Technician, Montifore Hospital, Pittsburgh, PA  
Responsible for all duties as a Blood Bank Technician: performing venipunctures, unit cross matching, antibody screens, quality control and preparing support solutions (platelets, plasma, cryoprecipitate and washed units) for atologus bone marrow transplant patients.

1979 – 1981 Medical Technician, University of Pittsburgh, Pittsburgh, PA  
Completed full rotation in various local hospitals in the University of Pittsburgh Health System for the clinical training and assessment in hematology, clinical chemistry, immunology, blood banking, parasitology, venipuncture, tuberculosis identification and infection control.

Microbac Laboratories, Inc.

*STATEMENT OF QUALIFICATIONS*

2007-2008

## ***Resumes of Management Team***

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### **KEVIN G. FALVEY, CHMM Business Development Director**

**EDUCATION:**

B. A., Social Science, Westfield State College, Westfield, Massachusetts

**PROFESSIONAL EXPERIENCE:**

Mr. Falvey joined Microbac Laboratories in 1999. As Director of Business Development, he is responsible for marketing and client development activities in the NW Indiana and Chicagoland territory.

Prior to Microbac Laboratories, Mr. Falvey was an Account Manager/Senior Field Specialist for Clean Harbors Environmental Services in Chicago. His responsibilities included the development of key corporate accounts, bid preparation for remedial projects and operational oversight of industry specific (Electric Utilities) programs.

Mr. Falvey has extensive experience in the hazardous waste industry.

**CERTIFICATIONS:**

- Certified Hazardous Materials Manager –Master Level (Cert # 12224)
- OSHA 40 Hour Hazardous Waste, Health & Safety Operations
- IFCI Underground Storage Tank Certification for Illinois
- Nuclear General Employee Training (NGET)

Microbac Laboratories, Inc.

*STATEMENT OF QUALIFICATIONS*

2007-2008



## ***Microbac Laboratories, Inc. National Network***





**Microbac Laboratories**  
**Corporate Office**  
Franklin Corporate Center  
2000 Corporate Drive, Ste. #350  
Wexford, PA 15090-7605  
724/934-5030, FAX:934-5088

# ***Microbac Laboratories Network Directory***

## **California**

Corona Division  
280 North Smith Avenue  
Corona, CA 92880  
909/734-9600  
FAX: 734-2803

## **Colorado**

Hauser Division  
4750 Nautilus Court South,  
Unit A  
Boulder, CO 80301  
720/406-4800,  
FAX: 303/581-0195

## **Florida**

Venice Division  
115 Corporation Way, Unit F  
Oakwood Business Park  
Venice, FL 34292  
941/484-6508  
FAX: 484-7388

Ft. Myers Division  
(Venice Division satellite)  
11350 Metro Parkway  
Suite #108  
Ft. Myers, FL 33912  
239/939-9899  
FAX: 939-7099

## **Indiana**

Chicagoland Division  
250 West 84th Drive  
Merrillville, IN 46410  
219/769-8378  
FAX: 769-1664

Chicagoland Division  
Field Services Center  
5713 East 85th Street  
Indianapolis, IN 46278  
317/872-1375  
FAX: 872-1379

Evansville Division  
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Evansville, IN 47715  
812/464-9000  
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## **Kentucky**

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Louisville, KY 40213  
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FAX: 962-6411

Lexington Division  
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2520 Regency Road  
Lexington, KY 40503  
859/276-3506  
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5309 Reidland Road  
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## **Massachusetts**

Massachusetts Division  
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Marlborough, MA 01752  
508/460-7600  
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## **New Jersey**

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