



RespirTek™
CONSULTING LABORATORY

Microbial Communication Service™
Specializing in Respirometry

Microbial Communication Service™ Applications For Chemical, Pharmaceutical, Manufacturing and Other Industries

To Optimize Efficiency of Wastewater Discharge and Minimize Operational Costs

Our Service Points

1 Increase Discharge Rates

- Improve your waste cost to product ratio
- Assess current wastewater discharges for potential increase in discharge rate.
- Characterize previously nondischargeable wastewaters
- Characterize new product-generated wastewaters

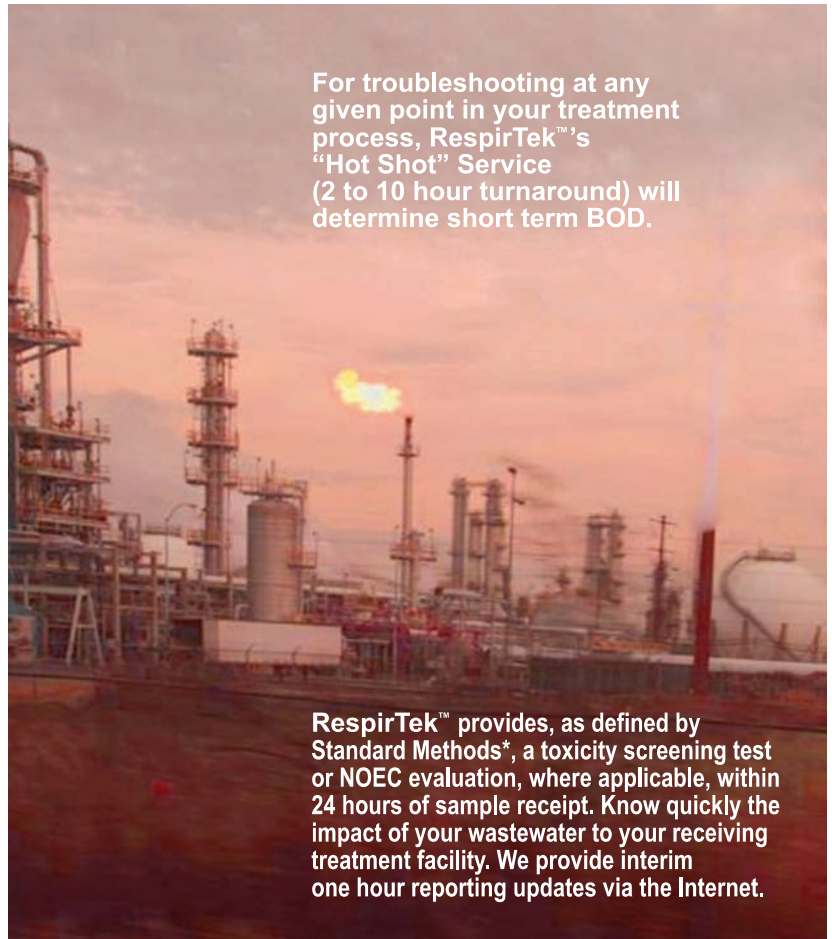
2 Qualify New Wastestreams

- Know wastewater discharge rates before full scale production
- Determine process changes in wastewater handling procedures to increase discharge and decrease cost
- Apply RespirTek's data to create savings at multiple production sites

3 Third Party Validation

- Bring in independent validation of your wastestream characterization or for problem resolution
- Troubleshoot cause of upset discharge to your WWTP
- Rush determination testing of the solution required to fix the upset to your WWTP
- Proactive use of 3rd party to improve relations with your WWTP
- Use NELAC* (EPA) certified independent assessors to validate conditions and solutions

RespirTek™'s Microbial Communication Service™ can assist with beneficial information to aid in optimizing efficiency of plant wastewater operations and in minimizing operational costs.



For troubleshooting at any given point in your treatment process, RespirTek™'s "Hot Shot" Service (2 to 10 hour turnaround) will determine short term BOD.

RespirTek™ provides, as defined by Standard Methods*, a toxicity screening test or NOEC evaluation, where applicable, within 24 hours of sample receipt. Know quickly the impact of your wastewater to your receiving treatment facility. We provide interim one hour reporting updates via the Internet.

*RespirTek™ is the first respirometric lab in the US to be awarded NELAC certification. NELAC (National Environmental Laboratory Accreditation Conference) is sanctioned by the EPA.

* Standard Methods for the Examination of Water and Wastewater:

- Toxicity Screening Test to determine if an impact is likely to be observed when the testing design incorporates one concentration, multiple or replicates, when exposed for 24 to 96 hours.
- No Observed Effect Concentration (NOEC) – NOEC evaluation in a full or partial-life-cycle test, the highest toxicant concentration in which the values for the measured response are not statistically significantly different from those in the control.



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RespirTek™ is a contract environmental laboratory with extensive services in respirometry from biological to chemical – biofeasibility in bioremediation to treatability/toxicity in wastewater treatment plant applications. We provide a unique, cost effective, useful service to our clients who are involved in any area where the activity of microbes or the response to chemicals is significant in their specific process of concern.

RespirTek™ can assist you whether you are involved in municipal, industrial or private sector wastewater discharges or you are a research-consulting engineer considering bioremediation alternatives. RespirTek™ offers 3rd party validation for use with regulators or other stakeholders. If considering purchasing a respirometer, utilize our experience with respirometers with your particular sample to get a step closer to knowing what respirometry can do for you.

RespirTek™ is the only laboratory to offer **Microbial Communication Service™**. We communicate with microbes, through respirometry, by continuously monitoring their behavior through their respiration rate, analyses of the patterns of oxygen uptake or gas production and adjunct analytical testing. The methodology used in the service is fully acceptable to EPA, ASTM, OECD, Standard Methods, and is NELAC certified.

Our lab is equipped with the most advanced respirometers and testing equipment available and a staff of experts unsurpassed by any other. Our president and co-founder, a

Biologist, has 23+ years of experience working with various respirometers in both industrial labs and wastewater treatment plants. Additionally, we staff PhD's who are experts in the field.

What was once only offered at the university research level, RespirTek™

now offers to the environmental industry a very cost effective service combined with highly responsive customer service. Individual testing programs are designed to fit the project because we understand no two projects or processes are exactly alike.

ADDITIONAL SERVICES INCLUDE:

Biodegradability Process Selection

RespirTek™ can assess the OECD biodegradation characteristics of specific chemicals. First we determine whether an aerobic or anaerobic system would work best. We then set up a project-specific test plan to confirm the applicability of the chosen system.

- Use the only acceptable testing protocol allowed by the OECD that reduces testing time and saves significant costs

Bioremediation and Bench Scale Studies — When a spill event occurs at your plant, we understand how crucial time and cost become. Our staff is prepared to help you resolve upsets internally using bioremediation options, with an emphasis on cost optimization.

- **Save months of development time**
- **Eliminate critical uncertainties from your decision-making process**
- **Supply regulators with 3rd party resolutions**
- **Resolve existing groundwater and site contamination problems through proven biological means**

RespirTek™ has developed protocol for a microcosm/bioremediation study, using respirometric technology combined with traditional analytical testing, that provides a very economical approach to natural attenuation determination. We can determine the rate of contaminant degradation to regulatory levels within days versus months and years of testing.

In conclusion, RespirTek™ provides well-planned test designs, timely project execution, concise reports with accurate data, dependable test results, and expert interpretation of the data utilizing 50 years of combined chemical and biological experience. Each client receives a project report consisting of test results, volume and rate bio-graphs, and analytical comparisons showing final results and variances.