

CAPABILITIES LIST

WATER (Drinking, Surface, Ground, Re-use, Waste, Marine, Recreational)

Algae Enumeration & Identification

Bacteria, including:

- Actinomycetes
- *Bacillus* Spores
- *Campylobacter*
- *Clostridium perfringens*
- Coliforms – Total / Fecal / *E. coli*
- *E. coli* O157:H7
- Enterococci
- Iron Bacteria-Filamentous & Heterotrophic
- *Legionella*
- Mycobacterium
- *Pseudomonas* spp.
- *Salmonella* spp.
- *Shigella*
- Slime Forming Bacteria
- Sulfur Bacteria
 - Filamentous
 - Sulfate Reducing

Distribution System Monitoring & Investigation

Microscopic Particulate Analysis (MPA)

- For Filtration Plant Optimization (FPO)
- Groundwater Under Direct Influence

Long Term 2 Enhanced Surface Water Treatment Rule (LT2)

- *Cryptosporidium* monitoring
- *E. coli* monitoring
- DCTS Data entry

Nuisance Organisms

Protozoa

- EPA Method 1623: *Cryptosporidium* & *Giardia*
- ColorSeed™ Internal Positive Controls
- With MPA & FPO Assays

BIOSOLIDS & WASTEWATER

40 CFR Part 503 Analyses

- Enteric Viruses (cell culture)
- Fecal Coliforms
- *Salmonella* spp.
- Total Solids
- Viable Helminth Ova

Virus Detection – Molecular Techniques

- Polymerase Chain Reaction (PCR)
- Reverse Transcriptase- PCR (RT-PCR)
- Integrated Cell Culture / PCR (ICC/PCR)
- Real Time – PCR (qPCR)

VIRUSES

- Bacteriophages
 - Somatic / Male Specific
 - Genotyping (human / animal)
- Enteric Viruses – Cell Culture
 - ICR & ASTM Methods (Enteroviruses – coxsackie, echo & poliovirus)
- ICC/qPCR
 - Enteroviruses, Adenovirus, Astrovirus, Rotavirus, Reovirus
 - Hepatitis A Virus (HAV)
- RT-PCR: Norovirus
- Infectivity Determination

WATER TREATMENT PLANT OPTIMIZATION

- Filtration Plant Optimization (FPO)
- Particulate Characterization by SEM

GENERAL MICROBIOLOGY

Bacterial Population Characterization

- Soil, Water, Waste Streams, etc.

Use Test for Evaluation of Reagent Water

Biofilm Analysis

Epifluorescent Bacterial Counts

Gram Stain

Genetic Sequencing – 16S rRNA

Iron Bacteria – Filamentous & Heterotrophic

ANALYTICAL SERVICES, INC. (ASI)
Microbiological Testing, Research and Consulting

Legionella

- Enumeration (Water & Swab)
- Confirmation / Species Identification
- Serotyping / Genetic Sequencing
- Risk Assessment (HACCP) / Consulting

Metal Working Fluids (MWF)

- Microbial Profiles

Organism and Particle Sizing

Photomicrography

Plate Counts & Organism Identification

- Bacteria
- Fungi

Salmonella spp.

Spores – Aerobic & Anaerobic

- Filtration Efficiency Studies

MICROBIAL IDENTIFICATION

- Metabolic Characterization- Biolog, Crystal
- Library Generation
- Strain Tracking
- 16s rRNA Genetic Sequencing

CHALLENGE STUDIES

Anti-Microbial Treatment / Coating Evaluation

Bench & Pilot Scale Testing

Consulting

- Experimental Design Services
- Product Development & Optimization

Filter Efficiency Testing

- Point - Of - Use (POU)
- Point - Of - Entry (POE)
- Community Systems (to 100 GPM)

Disinfectant Efficacy Studies

- Chemicals
- Ozone
- UV Lights
- Electrotechnologies
- Innovative Treatments

Challenge Organisms / Particles Include:

- Bacteria
- Fungi
- Protozoa (*Cryptosporidium/Giardia*)
- Test Dust / Latex Spheres
- Viruses (Animal / Bacteriophage)

Sterility Testing

Medical Waste Treatment Efficacy

- *Bacillus atrophaeus*
- *Geobacillus stearothermophilus*
- *Mycobacterium terrae*

SCANNING ELECTRON MICROSCOPY WITH ENERGY DISPERSIVE SPECTROSCOPY

- UltraPure Water Monitoring
- Particulate Identification & Enumeration
 - Water, Food, Pure Materials
- Process Monitoring
- Photomicrographs
- Signature Analysis

CONSULTING & EXPERT TESTIMONY

Distribution System Investigations

- HPCs
- Disinfectant Residual
- Water Quality Deterioration
- Aesthetic Complaints
- Coliform Occurrences

Watershed Monitoring

- Plan Development
- Pathogen/Indicator Assays
- Fecal Contamination Source Tracking

Legionella

- Facility / System Risk Assessment
- Cooling Tower Management
- Monitoring Plan Development / Review
- *Legionella* Analysis
- Expert Opinion & Testimony

TICK TESTING

- Tick Identification and PCR detection - *B. burgdorferi* (Lyme Disease)