# VERIFIGLOBAL NEWSLETTER

verifi Global

Comprehensive performance verification with global market reach

Accurate, Reliable, Credible

## New VerifiGlobal Collaborative Initiative

#### Creating value through informed decisions and sustainable results

Global threats to water security, resiliency and sustainability derive from population growth, rising demand for water resources, jurisdictional disputes, and the effects of climate change. At the local level, water resiliency and sustainability require effective access, movement, treatment and transformation of water for multiple purposes.

The new paradigm for water resiliency and sustainability is based on watershed and ecosystem carrying capacity, climate change adaptation, and the integration of water and energy efficiency across all production and consumption activities in all sectors. Resilient, sustainable water management is a continuum, which both supports and depends upon decisions and subsequent actions based on measurement, analysis and feedback.

#### Water Resiliency, Adaptation and Sustainability

## DECEMBER 2017

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VerifiGlobal and its Alliance member organizations are launching a collaborative initiative to support water resiliency and sustainability. The new initiative is intended to strengthen global capacity to undertake performance benchmarking, testing and verification in the water sector, ensuring that performance reporting on water technologies and infrastructure solutions is clear, complete, objective, and useful to interested parties. This market-driven, collaborative approach provides access to a robust, quality-assured mechanism with established methods and procedures, based on accepted international standards. Defining performance objectives for innovative water solutions will help municipalities, utilities and other water sector stakeholders make informed choices. It will also benefit technology companies seeking market acceptance of their innovative solutions.

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#### Why a collaborative initiative for water resiliency, adaptation and sustainability?

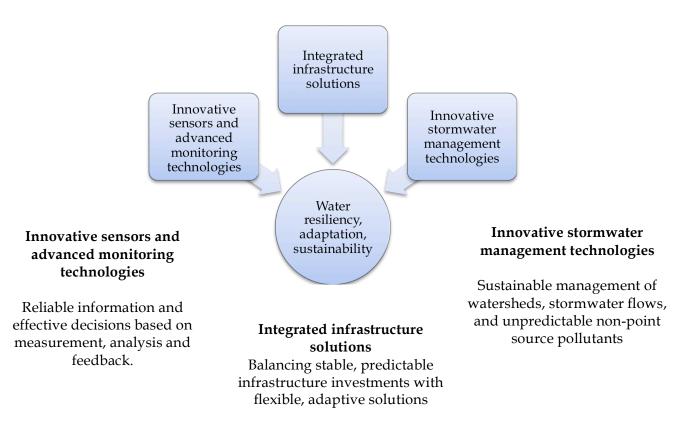
Society expects project proponents and solution providers to deliver results that reduce or eliminate negative ecological impacts, provide superior performance, and/or use fewer resources relative to conventional practices. Market acceptance and adoption of innovative water solutions are most likely to succeed through an iterative approach that demonstrates their benefits in the context of climate and environmental change, taking into account requirements for long-term adaptive management.

Selection and implementation of innovative water solutions requires reliable information on the performance of operating systems, processes and networks, including the technologies, sensors and other subcomponents that enable them. The challenge of water resiliency requires innovative water management technologies that must effectively function.

Given the complexity of most water problems it is difficult for any one specifier or regulator to adequately evaluate all options. Thus it is necessary to rely on independent, science-based evidence. The new VerifiGlobal collaborative water initiative is intended to support this approach.

As illustrated in the figure below, VerifiGlobal has identified three initial areas that can benefit from comprehensive, evidence-based performance benchmarking and verification in advancing innovative water technologies and infrastructure:

Comprehensive, evidence-based performance benchmarking and verification for advancing innovative water technologies and infrastructure



Contact VerifiGlobal to find out more about the water resiliency and sustainability collaborative initiative

## **Configuring Appropriate Infrastructure Solutions**



As new scientific information and societal expectations emerge, credible performance measurement and verification tools are needed to balance stability and predictability with flexibility and adaptability. Configuring appropriate solutions to address specific infrastructure needs can benefit from comprehensive, evidence-based performance benchmarking and verification incorporating both demand-side and supply-side considerations.

The International Organization for Standardization (ISO) Environmental Technology Verification (ETV) Standard, **ISO 14034**, is a documented process upon which credible performance monitoring, testing and verification of innovative infrastructure solutions can be based. As an internationally recognized standard, ISO 14034 can be applied to validate performance monitoring and measurement methodologies and protocols, and to verify the performance of innovative infrastructure solutions.

As an evidence-based tool, ISO 14034 can:

- Assist decision-makers in determining which technology and infrastructure options are viable and sustainable over the long-term

- Make it easier for local governments, agencies and the private sector to integrate innovative decentralized options with existing technology and infrastructure in ways that optimize the intrinsic strengths of existing infrastructure and ensure that new proposed solutions are secure, resilient and reliable

- Facilitate the tracking and demonstration of technology applications and infrastructure options, and the measurement and verification of their performance

- Encourage broader acceptance of sustainable infrastructure solutions by strengthening the business case for users, operators, regulators and investors to invest in and implement innovative solutions.

Contact VerifiGlobal to find out how ISO 14034 and VerifiGlobal Alliance members can help identify and implement sustainable infrastructure solutions.

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## Verification of Innovative Stormwater Management Technologies

Over the past two decades, various municipalities and government agencies have proposed and adopted policies to provide direction on how to manage stormwater and "wet weather flows" on a watershed basis. Key drivers for this are the estimated 85% of water quality impairments attributed to nonpoint discharges, including agricultural and urban stormwater runoff, as well as the growth of cities and surrounding communities that often contributes to increased flooding, deterioration of headwater streams, and degraded water quality. A guiding principle arising from this is that wet weather flows should be managed at source as a first priority and that the quality of runoff from new development sites should be improved. Although numerous contaminants of concern being investigated, much of the focus is on reducing suspended sediment concentration (SSC) at source by 80%.

In response to this, developers and design engineers may propose the installation of stormwater devices on development sites in order to comply with water quality objectives.

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#### **Verification of Innovative Stormwater Management Technologies**

Often, the engineers responsible for preparing stormwater management plans rely on the manufacturers of stormwater filtration devices to specify an appropriate make and model. It can be difficult for a permitting and approvals agency to independently assess whether the particular device is adequate at different flow rates. The reported removal rates of sediments and other materials differ depending on the technology and the manufacturer, given that they are not usually required to follow standard testing and verification procedures.

In the U.S., various stormwater filtration devices have been tested and verified by the **New Jersey Corporation for Advanced Technology (NJCAT)** using the **New Jersey Department of Environmental Protection (NJDEP)** "Laboratory Protocol to Assess Total Suspended Solids Removal by a Filtration Manufactured Treatment Device". The data generated at significant expense, includes lab and field testing results.

VerifiGlobal Alliance member organizations, Good Harbour Laboratories (GHL) and the Living City Campus (LCC) are familiar with this and other test procedures and have been communicating with many of the technology companies to determine how they might leverage their existing data into ISO 14034 compliant performance claims. The overall response to date from many of these stormwater technology companies has been positive, as they seek market acceptance and regulatory approval of their technologies based on clear, complete and objective performance evidence that is relevant and useful to interested parties and other affected stakeholders. VerifiGlobal and its Alliance members are committed to:

- Assisting decision-makers in determining which stormwater technologies and management options are viable and sustainable over the long-term
- Facilitating the tracking and demonstration of stormwater technologies and management options, and the measurement and verification of their performance
- Encouraging broader acceptance of stormwater technologies and strengthening the business case for users, operators, regulators and investors to invest in and implement innovative stormwater technologies.

Expected benefits include:

- Reduction in the potential environmental impacts of stormwater through an evidence-based process that encourages the adoption and use of independently verified innovative environmental technologies
- Posting of verified stormwater filtration technologies on the VerifiGlobal Solutions Network web page, creating greater market awareness and acceptance of innovative solutions that address environmental priorities
- Establishment of an inventory of verified stormwater filtration technologies that municipalities and other stakeholders can draw upon.



Contact VerifiGlobal to find out how ISO 14034 and VerifiGlobal Alliance members, Good Harbour Laboratories (GHL) and the Living City Campus (LCC), are supporting performance verification and market acceptance of effective stormwater management technologies and best practices



## Verification of Sensors and Advanced Monitoring Technologies

Challenges related to the extraction, delivery, and sustainable use of water create significant market opportunity to test and scale innovative water technologies and resilient solutions throughout the water cycle. Coupled to this is the application of new "smart" water tools and systems to gather meaningful and actionable data about the flow, pressure, distribution and quality of water. The combination of affordable, high quality sensors and new technologies means safer and more reliable operations for a diverse range of water/wastewater facilities and infrastructure, both centralized and decentralized, equating to more effective risk management and better informed decisions.

Sustainable water and wastewater systems must also be equipped with the capacity to be managed, monitored and networked with other infrastructure systems, in order to obtain more sophisticated, granular information on how these systems are performing and affecting each other. Additional efficiencies are gained when relevant, actionable information is shared. **Example #1 -** Use of sensors and advanced monitoring technologies to minimize nonrevenue water (NRW) by finding leaks quickly and predicatively using real-time SCADA data in conjunction with model network simulations. Reducing NRW allows municipalities to recover costs incurred in treatment and pumping that would otherwise be lost. One estimate indicates that a mediumsized city with 100 million gallons per day of produced water that loses 25 percent is incurring over \$13 million per year in nonrecoverable labour, chemical and energy expenses.

**Example #2** - The sharing of watershed management and stormwater modeling information to determine probable flooding zones and times based on predictive precipitation intelligence.

#### VerifiGlobal and its Alliance members are committed to:

- Identifying and tracking 'smart water' sensors and advanced monitoring technologies, systems, infrastructure options, and best management practices
- Verifying and reporting on the performance of innovative sensors and advanced monitoring technologies.

#### **Expected benefits include:**

- Better integration of innovative 'smart water' sensors and advanced monitoring technologies throughout the water cycle, with significant efficiency improvements in the measurement, management and performance of technologies and infrastructure for treating, protecting and conserving water
- Posting of the verified sensors and advanced monitoring technologies on the VerifiGlobal website, creating greater market awareness and acceptance of innovative solutions that address environmental priorities
- Establishment of an inventory of verified sensors and advanced monitoring technologies that municipalities, utilities and other stakeholders can draw upon.

Contact VerifiGlobal to find out how ISO 14034 and VerifiGlobal Alliance members are supporting performance verification and market acceptance of innovative sensors and advanced monitoring technologies

## U.S. EPA Advanced Septic System Nitrogen Sensor Challenge

The goal of the Advanced Septic System Nitrogen Sensor Challenge is to identify, test, and verify the performance of low-cost nitrogen sensor packages that can continuously monitor the performance of advanced nitrogen removal septic systems. The intent is to provide a practical measurement system that would lead to increased acceptance and utilization of advanced and innovative nitrogen reducing septic systems.

The Challenge has evolved through collaboration between the U.S. Environmental Protection Agency (U.S. EPA) and the Department of Health Services in Suffolk County Long Island, New York. The County has approximately 360,000 conventional septic systems and cesspools not designed to meet treatment levels protective of surface water quality and coastal ecosystem integrity. Over 200,000 of these systems are contributing excess nitrogen to sensitive surface waters in the County leading to declining water quality and accompanying ecological and human health risks. Suffolk County is in the process of testing selected advanced onsite wastewater treatment technologies that will decrease nitrogen contributions. Sensor packages that can measure the nitrogen concentration in the effluent of these advanced systems would provide assurance that the systems are functioning properly, and would increase the ability of regulators, managers, and homeowners to optimize and maintain their performance.

U.S. EPA is providing project leadership, assistance with the design of screening and field tests, logistical and technical support and overall policy guidance. U.S. EPA has contracted with **Battelle Memorial Institute** (Battelle) for support in connection with planning, development and implementation of the performance testing and verification phase of the Challenge. As a member of the VerifiGlobal Alliance, Battelle will serve as the Challenge's technical verification expert. Battelle has been confirmed through the VerifiGlobal Peer Assessment Process as a competent body for conducting verification of environmental technology performance claims according to the requirements of ISO 14034. **VerifiGlobal** is developing the Verification Plan, which addresses the specific requirements for conducting independent verification of performance test data in accordance with the ISO 14034 ETV standard. VerifiGlobal will also be preparing Verification Statements for those entities and/or companies with sensors successfully completing the 6-month test and meeting the performance goals.

Testing of the sensor technologies will include a one-week screening test, followed by a six-month field test. U.S. EPA anticipates that these tests will be conducted at the **Massachusetts Alternative Septic System Test Center (MASSTC)** in Barnstable, Massachusetts. MASSTC will initiate the testing, and undertake the day-to-day activities associated with testing, including sampling, data collection and storage. MASSTC will also ensure that the **Barnstable County Department of Health and Environment (BCDHE) Laboratory** receives the required samples for confirmation testing and that Battelle receives the sensor data and corresponding laboratory data.

A webinar will take place on December 18, 2017 to share the details and requirements of the testing and verification process with sensor companies and other interested parties. U.S. EPA and Battelle have been reaching out to sensor developers to inform them about the Challenge, the upcoming testing and verification opportunity, and the December 18 webinar. The registration site for the webinar is: www.eventbrite.com/e/advancedseptic-system-nitrogen-sensor-prototype-testingprog-info-webinar-tickets-39265064866?aff=es2

At the conclusion of the webinar, sensor developers who believe that their sensors can address the performance goals will be encouraged to complete an application for participation in the performance testing and verification phase of the Challenge. This application will be the initial screening tool that Battelle and an EPA approved Technical Panel will use to determine if the interested sensor developers have the

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## U.S. EPA Advanced Septic System Nitrogen Sensor Challenge

qualifications and sensor designs necessary to participate in the performance testing and verification phase. In addition to completing an application, sensor developers will be responsible for providing documentation on their proposed sensor technology, and assisting with sensor installation and other required O&M activities during the 6-month test.

U.S. EPA anticipates that once the Technical Panel reviews the applications and selects the sensors, MASSTC will prepare for the preliminary one week screening test, slated to begin at the end of March 2018. For those sensors that make it through the screening test, the Technical Panel in conjunction with Battelle will determine which sensors have met the requirements for moving forward into the 6-month field testing stage, which is anticipated to begin at the end of May 2018, lasting through the end of November 2018.

Sensor developers will have some time between the two tests to make any adjustments and changes to their sensor packages, prior to submitting their technologies to the longer field test.



U.S. EPA Advanced Septic System Nitrogen Sensor Challenge Performance Goals During the 6-month field test, Battelle will conduct a Technical Systems Audit to ensure that MASSTC performs procedures as required by the Test Quality Assurance Plan (T/QAP) and Verification Plan. Battelle will also conduct an Audit of Data Quality at the end of the 6-month test, in addition to developing a sensor test report, documenting overall sensor performance.

As noted above, sensor developers whose sensors reach the end of the 6-month test and meet the performance goals will have the option of obtaining verification of their test results through the VerifiGlobal ISO 14034 ETV process, which will be provided in the form of a Verification Report and a Verification Statement, expected to be finalized in February 2019.

As a separate activity following the release of the verification reports, the non-EPA members of the Technical Panel and **The Nature Conservancy (TNC)** will review the results. TNC and others are seeking funding for an order of 200 units, not to exceed a total cost of \$300,000 (USD). If funded, the order will be presented in the summer of 2019 to the best performing sensor(s) completing the 6-month field performance test and meeting or exceeding the performance goals. Some of the sensors will be deployed in Suffolk County.

U.S. EPA established the performance goals for the Advanced Septic System Nitrogen Sensor Challenge in consultation with MASSTC, the University of Rhode Island (URI), eight state regulators, Suffolk County, sensor experts, the Nature Conservancy, and others.

The ideal sensor package would provide a precise reading of Total Nitrogen (TN) and effluent flow rate, include telemetry, be self-calibrating or require infrequent calibration, last 10 years, require no more than one maintenance visit per year, and cost the homeowner less than \$1,000 (USD).

At a minimum, a sensor package would provide an accurate reading of nitrate (NO3-) and ammonium (NH4+), be easily accessed and maintained (no more than four maintenance visits per year), require infrequent calibration, include telemetry, last 5 years, and cost no more than \$1,500 (USD).

The accuracy of sensors needs to be within 1 milligram of nitrogen per liter and the range of detection between 0-60 milligrams of nitrogen per liter.

For more information contact: Corey Wisneski, PMP, Principal Research Scientist, BATTELLE Office: +1.781.681.5515 Email: sensorchallenge@battelle.org

## TRIECA Stormwater and Erosion Control Conference – March 21-22, 2018

Toronto and Region Conservation (TRCA) and the Canadian Chapter of the International Erosion Control Association (IECA) are hosting the annual TRIECA Conference, March 21-22, 2018, at the Pearson Convention Center in Brampton, Ontario, Canada

TRIECA is Canada's premier stormwater and erosion and sediment control conference, bringing together leading experts, influencers and research partners. Together, these participants are shaping the future direction of the stormwater, erosion and sediment control and natural channel design industries.

The conference format includes two full days of concurrent sessions with speakers from across North America presenting the latest technological innovations, case study findings and academic research. TRIECA also features an industry tradeshow, offering delegates the opportunity to speak directly with representatives from a wide variety of leading solutions providers.

Participation at the TRIECA conference offers a unique opportunity to increase your organization's visibility and reach key market segments.

For information contact: Amanda Slaght - aslaght@trca.on.ca

ISO 14034 Technical Report Development ISO/TC207/SC4/Working Group 5 Meeting December 12-14, 2017

The ISO working group responsible for development of the ISO 14034 ETV Standard will be meeting December 12-14, 2017 at the Edinburgh Centre for Carbon Innovation to review a working draft of a proposed Technical Report (TR) intended to clarify and improve a common understanding of the requirements for independent verification. The proposed structure of the TR is intended to closely follow the ISO 14034 standard, making it easier to navigate between both documents.

Although the proposed TR is primarily intended for verifiers using the ISO 14034 standard, the guidance it will provide may also be useful for environmental technology suppliers, technology users, policy makers and other organizations interested in understanding how the ISO 14034 standard can be used and how qualified, competent verifiers can be engaged.

Find out more at: https://committee.iso.org/home/tc207sc4

## VERIFIGLOBAL ALLIANCE MEMBERS

#### North America:

**Battelle** Columbus, OH USA

Centre for Advancement of Water and Wastewater Treatment (CAWT) Lindsay, ON Canada

**Good Harbour Laboratories** (GHL) Mississauga, ON Canada

**Southern Research (SR)** Durham, NC USA

**The Living City Campus (LCC)** Vaughan, ON Canada

#### **Europe:**

**ETA-Danmark** Nordhavn, Denmark

**RESCOLL** Bordeaux, France

**VTT Expert Services Ltd** ESPOO, FINLAND



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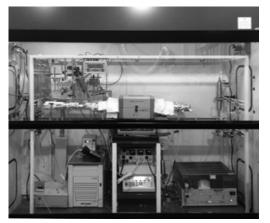
Southern Research Joins VerifiGlobal Alliance

Solving the world's hardest problems.

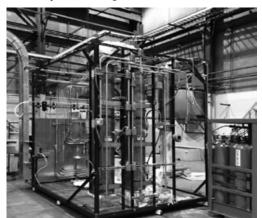
The environmental technology verification (ETV) capabilities of Southern Research (SR) encompass all parts of the technology development process. SR can test and evaluate technology performance during the proof-of-concept laboratory-scale stage all the way through to commercial scale-technology deployed in the field in a real working environment. SR has scientists, engineers, facilities, and capabilities to address a full range of energy and environmental technology development and performance testing requirements.

In addition to technology verification, SR also manages demonstration and testing of new technologies, producing high quality, dependable data about the performance of a technology. Typically, technology demonstration and testing involves two phases – (1) A controlled technology performance test within a lab; and (2) An evaluation of the technology in a real-world operating environment.

Southern Research operated the US EPA's ETV Greenhouse Gas Technology Center from 1995 through 2013, and has completed technology demonstrations and verifications for numerous commercial and government clients. SR evaluates technologies in the energy, climate change, and wastewater treatment areas, including renewable energy, energy storage, distributed generation, methane mitigation, CO2 capture and utilization, chemical process technologies, waste heat utilization, building energy technologies, and industrial waste water treatment technologies among others.



Catalyst Development



Sorbent Reactor Skid



Water Gas Shift Skid

For more information contact: Tim A. Hansen, P.E. Director, Clean Technology Development Energy & Environment Division Southern Research 5201 International Drive Durham, North Carolina 27712 USA Email: thansen@southernresearch.org Tel: +1-919-282-1052



## RESCOLL Promoting ETV at the World Efficiency Forum

Paris - December 12-14, 2017

Companies launching innovative environmental solutions often have trouble finding buyers if their technologies don't have established references. At the same time, buyers interested in investing in innovative solutions to address specific needs, want to minimize the potential risks of acquiring these innovations.

Environmental Technology Verification (ETV) addresses this dual problem. ETV involves thirdparty verification of the performance of an innovative environmental technology. It thus provides credible and reliable performance data, reduces risk for technology buyers and investors, facilitates market access (nationally and internationally) and encourages the adoption of innovative solutions.

**RESCOLL**, a member of the VerifiGlobal Alliance and a key participant in the French and European ETV Programs, will be talking about the benefits of ETV at the **World Efficiency Forum** in Paris (December 12-14). See: *https://www.world-*

efficiency.com/fr/Medias/Actualites/Dispositif-ETV/



**RESCOLL** is accredited by the French Accreditation Committee (**COFRAC**) to perform environmental technology verifications. The accreditation includes: Water treatment and monitoring; Materials, waste and resources; Energy technologies.

For more information about RESCOLL, contact: Claire Michaud Email: claire.MICHAUD@rescoll.fr Web: https://rescoll.fr/rescoll/ French eco-companies are becoming increasingly aware of ETV and have taken steps to apply the process to support their marketing objectives. One such company with technology verified by RESCOLL is **Futuramat** (http://www.polyfibra.cl/ingles/index.html).



Futuramat markets bio-based polymers used for the manufacture of everyday objects in the field of horticulture, packaging or for singleuse technical parts. The company's PolyFibra® PF-PEF-04 compound is composed of polymers derived from nonrenewable raw materials (polypropylene) and vegetable materials (e.g., spruce wood fibers) which are combined with additives and plasticizers to allow better compatibility between the polymer and the plant materials. This product has been used for example in the manufacture of transport wedges for frames.



For more information about Futuramat, contact: Sandra Martin Email: sandra.martin@futuramat.fr Web: www.futuramat.fr

#### ETA-Danmark continues to host VerifiGlobal Secretariat



**ETA-Danmark A/S**, a subsidiary of Danish Standards, is the Danish verification body for Environmental Technology Verification.

ETA-Danmark is accredited by **Danish Accreditation** (**DANAK**) to perform environmental technology verifications. The accreditation covers seven technology areas including: Water treatment and monitoring; Materials, waste and resources; Energy technologies; Soil and groundwater monitoring and remediation; Cleaner production and processes; Environmental technologies in agriculture; Air pollution and abatement.







ETA-Danmark delivers ETV in conjunction with two Danish technological service centers, the **Danish Technological Institute** and **FORCE Technology**, which provide experts and test facilities for the verification procedure.

ETA-Danmark is committed to promoting and enhancing the use of the ISO 14034 ETV standard and will continue to host the VerifiGlobal Secretariat through 2018.

For more information about ETA-Danmark A/S go to: http://www.etadanmark.dk/en



## **ETV Customers and Stakeholders**

ETV customers and key stakeholders include:

- Technology developers and vendors
- Technology buyers and users
- Investors and insurance companies
- Governments and regulatory bodies

- Others that facilitate or enable technology adoption

#### VerifiGlobal

c/o ETA-Danmark A/S Göteborg Plads 1 DK-2150 Nordhavn, Denmark Telephone: +45 7224 5900 Email: info@verifiglobal.com Web: www.verifiglobal.com Both supply-side and demand-side market drivers shape the way that ETV services are delivered to clients:

**Supply-side** – where a solution provider (i.e., developer, vendor, proponent) puts forward a performance claim supported by quality-assured data from an independent source.

**Demand-side** - where interested parties (i.e., users, buyers, regulators and other stakeholders) determine key performance parameters.

#### Battelle 2018 Conference on Remediation of Chlorinated and Recalcitrant Compounds

#### April 8-12, 2018 - Palm Springs, CA

The Eleventh International Conference on Remediation of Chlorinated and Recalcitrant Compounds will be held April 8-12, 2018, in Palm Springs, California.

Battelle's Chlorinated Conference is one of the world's largest and most comprehensive meetings on the application of innovative technologies and approaches for characterization, monitoring and management of chlorinated and complex sites.

The Conference technical program will be conducted at the Palm Springs Convention Center (PSCC) and room blocks will be available at the adjoining Renaissance Palm Springs Hotel and nearby Hilton Palm Springs Hotel.

The technical program for 2018 will address the following major thematic areas:

- Remediation Technology Innovations
- Assessing Remediation Effectiveness
- Green and Sustainable Remediation
- Addressing Challenging Site Conditions
- Fractured Rock
- Petroleum and Heavy Hydrocarbon Sites
- Emerging Contaminants
- Metals
- Vapor Intrusion
- Characterization, Fate and Transport
- Advanced Diagnostic Tools
- International Environmental Remediation Markets
- Technology Transfer and Stakeholder
  Communications

The 2018 Chlorinated Conference will feature a Panel Session on "Accelerating the Use of Innovative Technologies". Various options for evaluating the performance of new and emerging technologies will be discussed, including the need to develop clear metrics and/or lines of evidence for remedy success.

VerifiGlobal has also developed a short course on "Accelerating Technologies to Market with ISO 14304 Environmental Technology Verification (ETV)" and has agreed to deliver the course at the 2018 Chlorinated Conference. The objective of the course is to present the new ISO 14034 standard, including principles, procedures, and benefits of environmental technology verification (ETV) and how this can facilitate market acceptance and regulatory approval of innovative technologies. The targeted audience includes technology developers, vendors, solution providers and cleantech investors, as well as technology buyers, users, managers, regulators, and agencies.

The Conference technical program will be conducted at the Palm Springs Convention Center (PSCC) and room blocks will be available at the adjoining Renaissance Palm Springs Hotel and nearby Hilton Palm Springs Hotel.



For more information: Email: chlorcon@battelle.org Phone: 1.614.424.7866





# VerifiGlobal Short Course on Environmental Technology Verification

VerifiGlobal has developed a short course on ISO 14304 Environmental Technology Verification (ETV), which can be presented at a range of different venues.

**Objective of the short course:** To present the new ISO 14034 standard, including principles, procedures, and benefits of environmental technology verification (ETV) and how this can facilitate market acceptance and regulatory approval of innovative technologies.

**Benefits of ISO 14034 ETV:** Published in November 2016, the ISO 14034 ETV standard provides a specified framework for the evaluation of environmental technologies. The process outlined in the standard provides legitimacy to third-party verification of environmental technology performance claims. Use of the standard offers the following benefits:

- Robust verification: A functional quality-assured process for technology performance verification, supported by effective testing and verification protocols;
- Reciprocity and acceptance: Effective engagement of stakeholders and other interested parties when identifying relevant performance parameters, with greater potential for reciprocity and acceptance of test methods, performance data and verification results across multiple jurisdictions;
- Market adoption: Accelerated market adoption of verified technologies by a broader range of users across different

sectors, particularly when considering proposed solutions and potential outcomes that involve trade-offs and risks.

For the 'clean-tech' industry and environmental technology companies, independent verification based on the ISO 14034 ETV standard provides credible evidence that technologies perform as claimed, which helps convince potential clients, as well as regulators, of the legitimacy and value of these verified technologies.

For industries and governments that require technologies to prevent, control and remediate pollution, and/or improve environmental performance, independent verification based on the ISO 14034 ETV standard provides credible performance information, which informs choices and helps justify decisions.

Specific examples are provided throughout the short course to illustrate how ISO 14034 is being applied.

The targeted audience includes technology developers, vendors, solution providers and cleantech investors, as well as technology buyers, users, managers, regulators, and agencies.



For more information on the short course or to explore options for presentation at a particular venue, please contact VerifiGlobal



