



Seeley Lake Sewer District  
 P.O. Box 403  
 Seeley Lake, Montana 59868

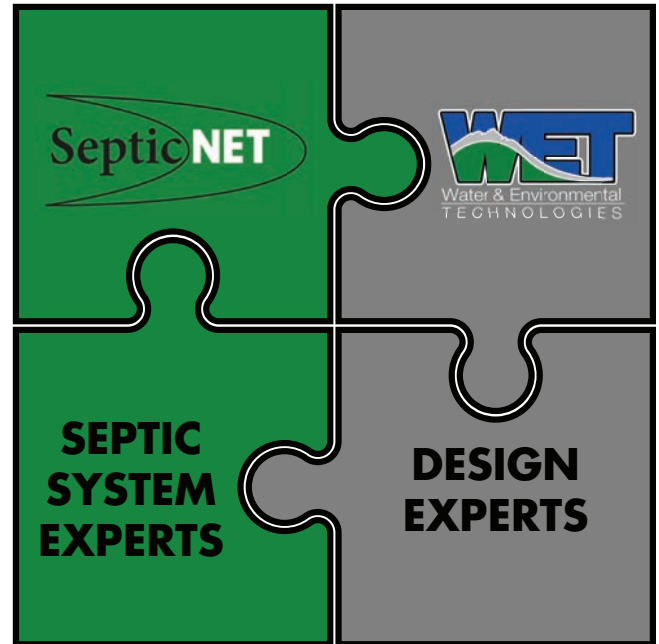
**Subject: Seeley Lake Missoula County Sewer District Request for Qualifications**

Dear Seeley Lake Sewer District:

Thank you for the opportunity to respond to your Request for Qualifications for wastewater treatment improvements in Seeley Lake, Montana. The fast-growing Seeley Lake community is faced with significant wastewater challenges that do not lend themselves to a “one size fits all” approach. Our submittal consists of a unique partnership between SepticNET, Inc. (SepticNET) and Water & Environmental Technologies, Inc (WET), combining state-of-the-art wastewater treatment technology with first-class infrastructure analysis, engineering, and construction management services.

SepticNET, Inc. manufactures, installs, and maintains the Septic Nutrient Elimination Technology (SepticNET) on-site treatment systems at numerous locations throughout Montana. SepticNET is an innovative, patented, modular septic treatment system designed for use with new construction or as an upgrade to existing on-site septic systems. SepticNET is a Montana DEQ (MDEQ) approved Level 2 wastewater treatment system that removes total nitrogen to below 7.5 mg/L before entering the drainfield and is the only Level 2 system approved in Montana to this level of treatment for flows less than 5,000 gallons per day. SepticNET can also be scaled up to serve small sewer districts and communities.

Due to the complexities associated with your project, SepticNET, Inc. will be teaming with WET, a full-service engineering and consulting firm with multiple Montana locations. SepticNET and WET were born out of a unique wastewater treatment challenge in Butte and have a long history of successful projects. SepticNET, Inc. began as a WET project and has grown into a successful stand-alone company. This close-knit SepticNET/WET Team can address design issues as they arise, and is willing to work closely with other project stakeholders as needed. . WET has extensive experience in the municipal, residential, and commercial water and wastewater design and permitting arena and has successfully teamed with other firms on many projects. Our Team is confident we can assist the Seeley Lake Sewer District is successfully managing its wastewater collection system and treatment needs. Our Statement of Qualifications is attached for your review.



Please let us know if you need any additional information.

Sincerely,

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# Summary of Qualifications for Wastewater Collection and Treatment System Design

MONTANA | Seeley Lake | Missoula County

# 2022

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## INTRODUCTION

Wastewater treatment for small communities is often a difficult task with unique circumstances, and a “one-size-fits-all” solution doesn’t always apply. Due to the complexities associated with the Seeley Lake community, our proposal includes a unique partnership between SepticNET, Inc. and Water & Environmental Technologies (WET), a full-service engineering and consulting firm with multiple Montana locations. SepticNET and WET were born out of a unique wastewater treatment challenge in Butte and have a long history of successful projects. SepticNET, Inc. began as a WET project and has grown into a successful stand-alone company. SepticNET was developed just for this situation, providing a new tool in the wastewater toolbox where one previously did not exist. SepticNET began in 2006 as a project developed by WET resulting from high nitrates detected in well resulting from standard septic systems. WET’s vast experience in municipal, residential, and commercial wastewater development and permitting paved the way for a new company, SepticNET, Inc. to be formed in 2011 and two patents to be issued in 2012.

The SepticNET/WET partnership provides an efficient path to solving unique wastewater treatment needs, similar to those Seeley Lake is now experiencing. With WET’s engineering skills and SepticNET’s unique treatment capabilities, solutions to the most complex problems can be found. Our team will evaluate existing and future development in the Seeley Lake area and develop the most logical and cost-effective wastewater collection and treatment solutions for each area. These may include a combination of typical municipal wastewater collection and treatment technologies and individual or small community SepticNET systems.

Wastewater treatment is a complicated process involving numerous biological components and various environmental conditions. The SepticNET technology is an innovative and patented modular septic treatment system designed for use with new construction or as an upgrade to existing on-site septic systems. The SepticNET modular wastewater treatment system is a Montana DEQ (MDEQ) approved Level 2 wastewater treatment system that removes total nitrogen to below 7.5 mg/L before entering the drainfield and is the only Level 2 system approved in Montana to this level of treatment for flows less than 5,000 gallons per day. SepticNET systems’ modular design allows it to efficiently remove Total Nitrogen (TN), biological oxygen demand (BOD), and TSS; and allows the system to be easily upgraded to remove additional contaminants as needed. Logistically, SepticNET systems can be utilized in remote areas not conducive to traditional collection and treatment, as well as small community systems that can compete with traditional methods from a cost perspective.

Since its inception in 2000, WET has grown from a highly specialized group of geoscience professionals into a full-service environmental and civil engineering consulting firm with office locations in Butte, Great Falls, Anaconda, Bozeman, and Kalispell, Montana and Sheridan, Wyoming. Our mission at WET is to provide outstanding engineering and environmental services in a professional, timely, and cost-effective manner. WET is a 100% employee-owned company, creating an environment where professionals strive for excellence and efficiency. Our team takes pride in developing innovative solutions for its clients; we “think outside the box” to find the best path for our clients. WET staff have worked in the environmental and civil engineering and consulting field for over three decades.



## SEPTICNET BASICS

Nitrogen is present in many forms in a septic system. Most nitrogen excreted by humans is in the form of organic nitrogen (dead cell material, proteins, and amino acids) and urea. After entering the septic tank, microorganisms convert organic nitrogen to ammonia. Ammonia is the primary form of nitrogen leaving a standard septic system. Biological conversion of ammonia to nitrogen gas is a two-step process. Ammonia must first be oxidized to nitrate and nitrate is then reduced to nitrogen gas. These two reactions require significantly different environments and occur in separate reactors of the SepticNET system.

In the presence of oxygen, bacteria will convert ammonia to nitrate. In a conventional septic system, most ammonia is converted to nitrate beneath the drainfield, where no further treatment occurs. As a result, nitrate is the primary contaminant of concern from on-site septic systems. As urban sprawl and rural development continues, domestic wells and surface water bodies are increasingly being impacted by nitrate from septic system effluent.

Nitrate, another form of nitrogen, can have serious human health effects if consumed in drinking water. Nitrate can also have deleterious effects on the environment as excess nitrogen stimulates the process known as eutrophication in surface water bodies. For this reason, many alternative technologies have been designed to remove total nitrogen from wastewater. These technologies use bacteria to convert ammonia and nitrate to gaseous nitrogen. In this form, nitrogen is inert and may be released to the air.

The first step in the SepticNET process is the conversion of ammonia to nitrite and then to nitrate and is known as nitrification. It is important to note that nitrification requires and consumes oxygen. The process is mediated by the bacteria *Nitrosomonas* and *Nitrobacter*, which require an aerobic environment for growth and metabolism of nitrogen. SepticNET system uses an air pump and submerged air diffusers to provide active aeration to a moving-bed, fixed-film bio-reactor, thus achieving complete (99.7%) nitrification.

The second step of the process is the conversion of nitrate to nitrogen gas and is referred to as de-nitrification. This process is also mediated by bacteria. For de-nitrification to occur, the dissolved oxygen level must be at or near zero. The bacteria also requires a carbon food source for energy and conversion of nitrogen. The bacteria metabolize the carbonaceous material or BOD in the wastewater as this food source, metabolizing it to carbon dioxide. This in turn reduces the BOD of the sewage, which is desirable. However, if the sewage is already low in BOD, as is the case in the nitrification/de-nitrification process, the carbon food source will be insufficient for bacterial growth and de-nitrification will not proceed efficiently. To overcome this problem, the SepticNET system incorporates a patented, external source of organic carbon to achieve up to 95% nitrate removal.



## SEPTICNET PERFORMANCE DATA

Wastewater treatment is a complicated process involving numerous biological components and various environmental conditions. SepticNET's modular design allows it to efficiently remove TN, BOD, and TSS and allows the system to be easily upgraded to remove additional contaminants as needed. For example, a phosphorous module is already available for SepticNET, and testing is being conducted on modules designed to remove pharmaceuticals and personal care products. The following items summarize SepticNET performance data obtained from systems located around Butte, Montana which provides an accurate expectation of how SepticNET will perform at other Montana locations (other systems have been developed and tested at locations with much different conditions than those we encounter regularly in Montana).

| TN  | BOD  | TSS   |
|---|--|---|
| <ul style="list-style-type: none"> <li>• Average Influent—74.6 mg/L</li> <li>• High Values—295 mg/L; 156 gm/L</li> <li>• Average Effluent—4.84 mg/L (including start-up samples)</li> <li>• Lowest Values—1.86 mg/L; 2.79 mg/L</li> <li>• Average Removal Efficiency—94%</li> </ul> | <ul style="list-style-type: none"> <li>• Average Influent—149 mg/L</li> <li>• Highest Value—590 mg/L</li> <li>• Average Effluent—2 mg/L</li> <li>• Average Removal Efficiency—98.7%</li> </ul> | <ul style="list-style-type: none"> <li>• Average Influent—128 mg/L</li> <li>• Highest Values—584 mg/L; 480 mg/L</li> <li>• Average Effluent—0.2 mg/L</li> <li>• Average Removal Efficiency—99%</li> </ul> |

Table I. Level 2 Systems

|  |   | LEVEL 2 TECHNOLOGY SPECIFICS                    |   |                 |                 |               |
|--|---|---|---|-----------------|-----------------|---------------|
|  |   | Treatment Level (mg/L)                          | Treatment Technology                            | Min. Flow (GPD) | Max. Flow (GPD) | Year Approved |
| <b>MDEQ LEVEL 2 SYSTEMS</b>              | Recirculating Sand Filter                         | 24  | Recirculating Trickling Filter                  | N/A             | N/A             | ~1993         |
|  | Oremco-AdvanTex (AX Model)                        | 24  | Recirculating Trickling Filter                  | 0               | 0               | 2004          |
|  | Fluidyne-Eliminate                                | 24  | Recirculating Trickling Filter                  | 0               | 0               | 2004          |
|  | International Wastewater Systems (IWS)-Model 6000 | 24  | Sequencing Batch Reactor                        | 5,000           | 0               | 2005          |
|  | Santec  | 14  | Extended Aeration                               | 5,000           | 0               | 2006          |
|  | Bio-Microbics/Micro-FAST/Retro-FAST               | 24  | Recirculating Trickling Filter                  | 250             | 9,000           | 2006          |
|  | HDR Engineering                                   | 10  | Activated Sludge/Biological Nutrient Reduction  | 5,000           | 0               | 2007          |
|  | HDR Engineering                                   | 7.5   | Activated Sludge/BNR with Membrane Filtration   | 5,000           | 0               | 2008          |
|  | International Wastewater Systems (IWS)-Model 6000 | 7.5   | Sequencing Batch Reactor with Methanol Addition | 5,000           | 0               | 2007          |
|  | Norweco-Singulair Model TNT                       | 24  | Extended Aeration                               | 0               | 0               | 2007          |
|  | Fluidyne-ISAM                                     | 24  | Sequencing Batch Reactor                        | 5,000           | 0               | 2009          |
|  | Quanics Bio-COIR/AeroCell                         | 24  | Recirculating Trickling Filter                  | 0               | 0               | 2010          |
|  | <b>SepticNET</b>                                  | <b>7.5</b>                                      | <b>Packed Bed, Flooded Bio-Reactor</b>          | <b>0</b>        | <b>0</b>        | <b>2011</b>   |
|  | Jet-J-500CF                                       | 24  | Recirculating Trickling Filter                  | 0               | 0               | 2011          |
|  | Orenco-AdvanTex (AXRT Model)                      | 24  | Recirculating Trickling Filter                  | 0               | 0               | 2011          |
|  | Northwest Water Systems (NWS)-Model 2400          | 24  | Sequencing Batch Reactor                        | 5,000           | 0               | 2011          |
| Northwest Water Systems (NWS)-Model 7500 | 7.5   | Sequencing Batch Reactor with Methanol Addition | 5,000   | 0               | 2011            |               |
| SeptiTech-M400D-M3000D                   | 24  | Recirculating Trickling Filter                  | 0   | 0               | 2012            |               |

Grey rows represent systems that are approved for flows under 5,000 gallons per day (GPD).

The effectiveness of SepticNET at removing TN, BOD, and TSS for residential wastewater and its design flexibility provide numerous advantages of using SepticNET for wastewater treatment. Some advantages include:

- 320% Better Contaminant Removal—SepticNET is approved to remove total nitrogen to  $<7.5$  mg/L; the major competitor is approved for 24 mg/L, thus SepticNET provides more than three times the treatment for on-site systems up to 5,000 GPD.
- No Nitrate Mixing Zone—Using SepticNET streamlines the permitting process by eliminating the need for a nitrate mixing zone analysis by MDEQ, which in-turn saves money for the owner.
- Smaller Drainfields—SepticNET's highly efficient treatment results in smaller drainfields which significantly reduces costs for the project.
- Longer Drainfield Life—Less loading to the drainfield extends its life and thus saves replacement costs for future operations of the treatment system. It is highly likely that the drainfield of a SepticNET system may never have to be replaced as a result of bio-mat build-up or biological plugging.
- Low Operation & Maintenance Cost—The SepticNET system has few mechanical parts and was designed to run unattended for long periods of time. Also, no hazardous chemicals, such as methanol, are used in the SepticNET system and no complicated dosing/recycle systems are needed to achieve the superior treatment levels.
- Easily Expandable—The SepticNET is a modular treatment system that is designed to effectively treat wastewater with highly variable flows and concentrations. Should additional treatment objectives be required in the future, components can easily be added to SepticNET without major system modifications.
- Montana Invented, Tested, and Manufactured—SepticNET was developed and tested in Montana using funding from Water & Environmental Technologies and a grant from the Montana Board of Research and Commercialization Technology. Testing and developing the system in Butte proves it can effectively operate in the adverse environmental conditions that exist throughout many areas of the state. Also, because SepticNET is manufactured in Montana, service and technical expertise for the system is readily available.



## SEPTICNET TREATMENT PROCESS OVERVIEW

The heart of the SepticNET is an aerobic nitrification reactor, featuring an up-flow/up-flow aerated-packed-column with a moving-bed-fixed-film bioreactor that converts ammonia to nitrate through a process called nitrification. The nitrification step, often overlooked by other technologies, is often the limiting step in total nitrogen removal.

The innovative design of the nitrification reactor allows for nearly complete conversion of ammonia to nitrate without clogging from biomass production, a critical improvement over existing technologies. Wastewater and air enter the column from the bottom and pass through a bed of engineered plastic bio-filter growth media. The agitation from the air keeps the bio-film healthy and prevents clogging. The air/water/excess bio-film mixture exits the nitrification reactor and enters the initial clarifier. The hydraulic retention time (HRT) needed for complete conversion from ammonia to nitrate in the SepticNET system is approximately 3 hours, assuming residential strength wastewater.

In the next step of the SepticNET process, the nitrate-rich water produced in the aerated bio-filter flows through the initial clarifier. The innovative clarifier design allows for sloughed-off biofilm generated in the nitrification process to be collected and pumped back to the primary treatment tank, which prevents clogging and minimizes maintenance of the system.

The next step in the SepticNET process is a packed-column/fixed film bio-reactor used for de-nitrification. The de-nitrification process requires an environment without oxygen and a source of organic carbon. Since all of the existing organic carbon is removed in the nitrification process, an external source of carbon is needed for complete de-nitrification. A patented carbon-based bio-film carrier is used for the de-nitrification process. This carrier is insoluble in water and slightly buoyant, thus creating optimum conditions for de-nitrification and at the same time minimizing plugging and channeling of the wastewater.

The final step in the SepticNET process is a settling tank used to reduce the TSS in the final effluent. The innovative clarifier design allows for solids generated in the nitrification process to be pumped back to the septic tank, which prevents clogging and minimizes maintenance of the system. The resulting TN levels in the final discharge of the SepticNET system are well below drinking water standards (10 mg/L). Following the final settling tank, the wastewater is sent to the drainfield.





# SEPTICNET SYSTEM DESIGN CONSIDERATIONS

## Wastewater Flow

The wastewater flow is determined using information contained in MDEQ Circular 4. The SepticNET treatment unit can handle residential strength wastewater with flows ranging from 300 gallons per day (GPD) up to 5,000 GPD or higher.

## SepticNET System Components

The following components for the SepticNET treatment system assume that the at least a three-day residence time for primary treatment is provided prior to wastewater entering the SepticNET System.

### Flow Equalization Tank

The flow equalization tank consists of high density poly ethylene (HDPE) below-ground tanks that are hydraulically connected to the reactor vault. The flow equalization tank is located directly after the septic tank and can be fed by either gravity flow or from a septic pump station. In the SepticNET system, the flow equalization tank includes a pressure transducer depth sensor that provides instantaneous and constant information to the control panel for efficient operation and plumbing necessary for the the system.

### Mechanical Vault

An underground-water-tight HDPE vault will house the mechanical components and reactors of the SepticNET system. Housing the components and reactors inside of an underground vault allows for more precise control of the processes, for easier maintenance of the system, and for more efficient treatment. The following components are housed in the reactor vault: flow control module, nitrification reactor, initial settling tank, de-nitrification reactor, final clarifier, control panel, and recirculation/solids return pump.

### Nitrification Reactor

The nitrification reactor consists of a custom built polyethylene reactor filled with buoyant plastic bio-support media and course bubble air diffusers. An air compressor will provide the air to the aerators which efficiently oxygenate the water and create conditions needed for nitrification. A key component of the nitrification reactor is an internal settling baffle, which allows for rapid settlement of any solids and converts the flow from down-flow to up-flow. The innovative design of the reactor promotes a healthy and efficient bio-film which converts over 99% of the incoming ammonia to nitrate. The nitrification reactor is fitted with a timed solenoid valve to allow any accumulated sloughed-off bacteria to enter the solids return pump for transport back to the septic tank. The nitrate-rich, bio-mass laden water exits from near the top of the reactor and gravity flows into the initial settling tank.

Required Air Flow—Based on a model prepared by SepticNET, Inc. using both published literature and SepticNET specific data. Site specific airflow calculations to achieve complete conversion of ammonia to nitrate and to remove BOD for residential wastewater will be determined per system

Bio-film Carrier Calculations—The amount of plastic biofilm carriers needed to achieve complete nitrification in the aerated nitrification reactor are determined based on manufacturer provided data, published research, and data specific to the SepticNET system.

### Initial Settling Tank

The initial settling tank consists of a polyethylene reactor. The innovative design of the internal components of this tank allows for easy solids settling and recirculation to the septic tank, which prevents downstream components from plugging with bio-solids. A timed solenoid valve located at the bottom of the tank is used to

allow accumulated solids to enter the solids return pump for transport back to the septic tank. This tank also begins the de-oxygenation of the aerated water, thus preparing it for the de-nitrification reactor. Wastewater exits near the top of the tank and gravity flows into the de-nitrification reactor.

### De-Nitrification Reactor

The de-nitrification reactor consists of a polyethylene reactor filled with slightly buoyant, patented, carbon-based, bio-support media. Nitrified water from the initial settling tank enters the reactor from the top and flows down through the innovative internal settling baffle and then continues up through the patent-pending, carbon-based bio-support media. The de-nitrification reactor is also fitted with a timed solenoid valve to allow accumulated solids to enter the solids return pump for transport back to the septic tank. Wastewater exits near the top of the reactor and gravity flows into the final clarifier.

Bio-film Carrier Calculations—The amount of carbon biofilm carriers needed to achieve complete de-nitrification in the de-nitrification column are determined based on data specific to the SepticNET system.

### Final Settling Tank

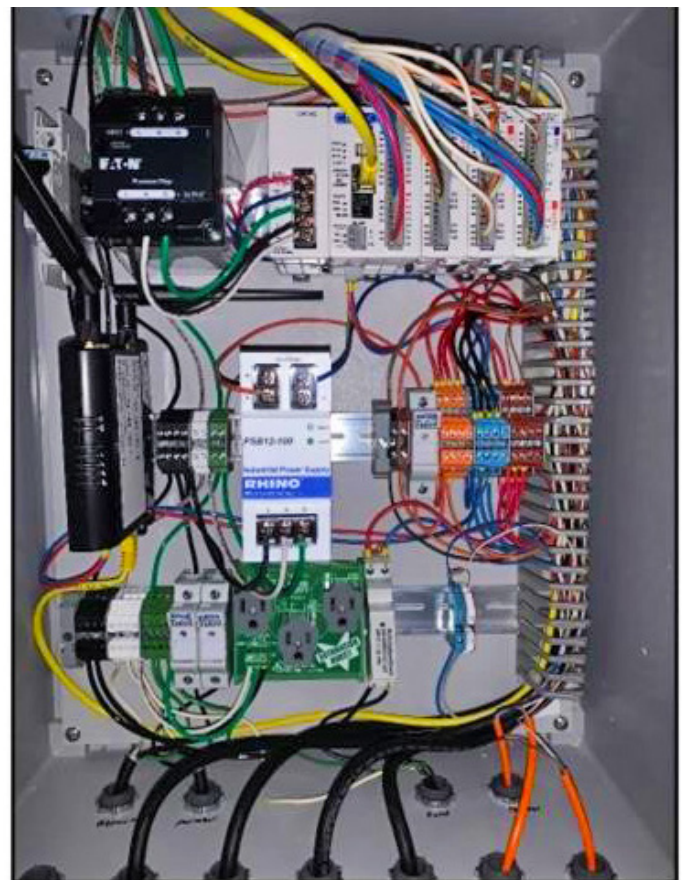
The final settling tank consists of a polyethylene reactor. A timed solenoid valve located at the bottom of the tank will be used to periodically drain the solid back to the septic tank. The water exiting the final clarifier will gravity flow to the drainfield dose pump.

### Control Panel

A custom designed and built control panel is located in the Reactor Vault. The control panel includes a programmable logic controller (PLC) and numerous relays and switches to provide accurate control of all system electrical components. Information is transmitted to and from the PLC by means of a touch-screen viewer that includes a screen for overall system operation, a settings screen that allows for custom control of valve timings (i.e., vacation mode settings and all other timed components settings), and an alarm screen that shows any alarm conditions and allows for alarm resetting. Also, the touch screen changes color to indicate system status. For example, a green screen background indicates normal system operation and a red screen background indicates an alarm condition.

The control panel also sends an alarm signal to a remote alarm located outside the vault. The remote alarm features (both audible and visual components) are wired to a separate electrical circuit which allows for alarm operation even if power is interrupted to the treatment unit. Alarm conditions for the SepticNET system include high water level in the pump tank, power outage to the control panel, and high solids pump water level. Once an alarm condition is recognized by the control panel, the alarm will be displayed until the symptom is remedied or the alarm is reset at the control panel.

Along with the above mentioned capabilities, the control panel also includes telemetry capabilities. Using the latest technologies, the control panel allows for continuous monitoring and control of the

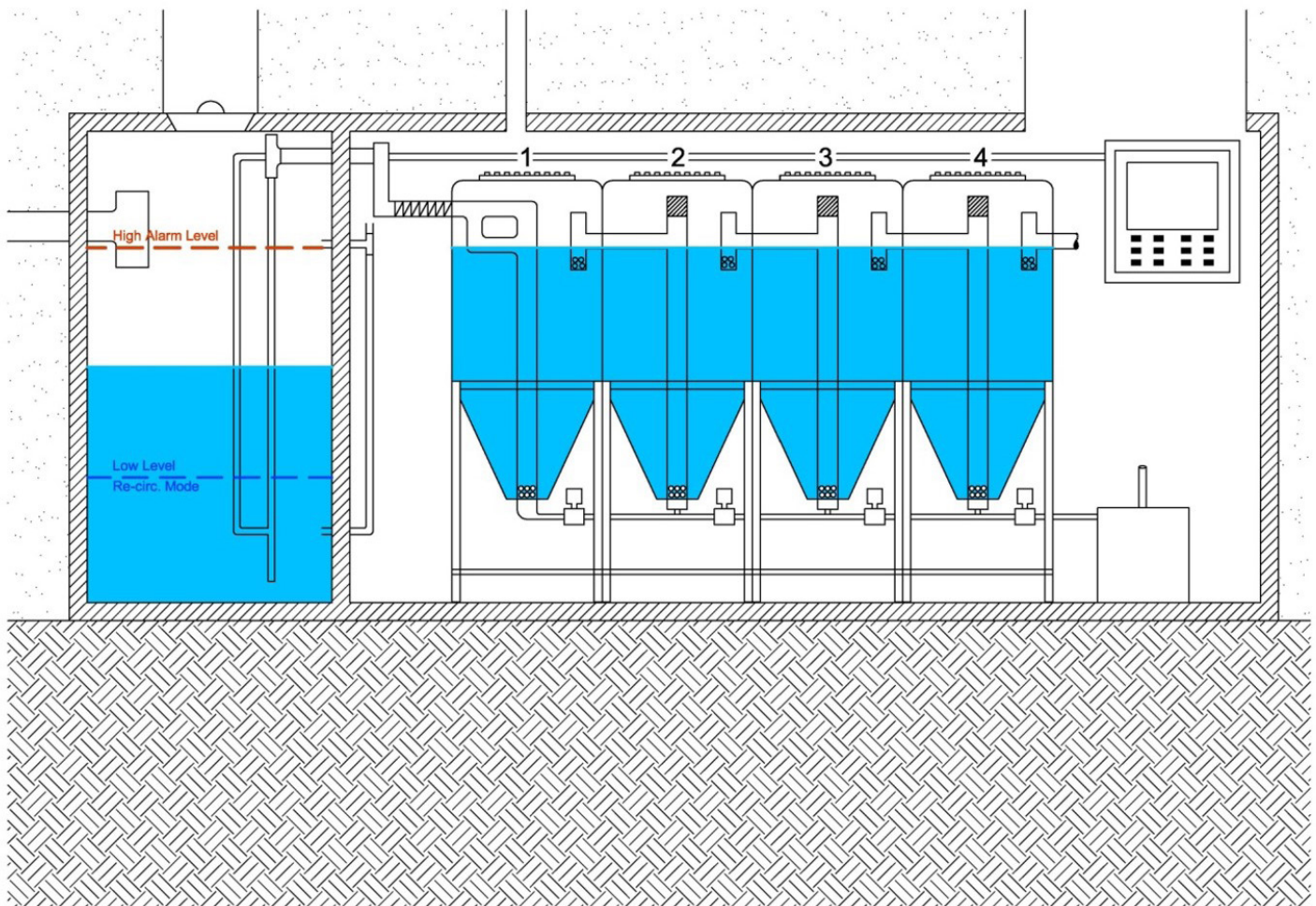


entire system. This allows SepticNET, Inc. personnel to evaluate the system performance and change operating parameters to optimize the treatment process.

### Solids Return/Recirculation Pump

The solids return/recirculation pump periodically pumps any accumulated bio-solids back to the septic tank. During the nitrification/de-nitrification process, microorganisms are sloughed-off and could cause reactor plugging if not adequately managed. Automated valves located at the bottom of each reactor open at times specified in the control panel programming and send the accumulated bio-solids to the solids return pump, which then sends the mixture back to the septic tank where the solids can be further broken down. Also, should the water level in the flow equalization tank reach a pre-determined low level, the valve under the final settling tank will open and the recirculation pump will activate, thus allowing the system to run indefinitely in recirculation mode until such time as system inflow increases the level in the flow equalization tank. Normal operation would follow.

SepticNET Normal Operation



## SERVICE AREAS

Between SepticNET and WET, clients receive comprehensive engineering services, environmental consulting services, expertise that are a valued resource around the Northwest and beyond. This team provides services for every stage of our clients' largest and most complex projects.

We provide turnkey engineering services and environmental consulting in each project area, including assessment, design, implementation, and reporting, all within the limits of federal and state regulatory agencies such as the EPA or the Departments of Environmental Quality within various states. We also strive to maintain a positive working relationship with these regulatory personnel and to act as a representative for its clients. This team gains special satisfaction from seeing a project through from start to finish.

SepticNET and WET's service capabilities adapt to a wide range of clients, from large industrial corporations to small, family-owned businesses. We employ highly-educated personnel with special training and technical skills, capable of offering our clients additional services over those of our competitors. Our business traits make us unique from other companies offering similar services. WET's primary services can be classified into the following major categories:

### Engineering

#### Civil Engineering

Our Civil Engineers incorporate expertise in many different aspects of engineering such as geotechnical engineering, construction management, structural engineering, sanitary sewer engineering, as well as wastewater treatment. Included in our team of engineers are:

- Civil Engineers
- Sanitary Sewer Engineers
- Municipal Engineers
- Storm Water Engineers
- Industrial Engineers
- Consulting Engineers

As an established civil engineering firm, WET has significant experience storm water, sanitary sewer, landfill, and phased site development. Our engineering staff provides on-site surveying services, project design, development of bid plans and specifications, and project oversight and administration. WET has completed the following large-scale engineering projects:

- Storm Water Capital Improvements Plan
- Closure Design and Construction Oversight for Industrial Landfill Facility
- Rehabilitation of Century-Old Underground Storm Water Tunnel System
- Multiple Site Storm Water Design Projects for Commercial, Municipal, and Industrial Facilities

#### Environmental Engineering

Environmental engineering encompasses a wide range of services from risk assessment and prevention, site

investigation, to complete remediation services. As part of our environmental engineering services, WET is dedicated to act as a liaison to our clients in cases of compliance issues, and work tirelessly to mediate projects where the EPA, state or local government agency may be involved. We will work with all parties, and find an efficient, effective solution. Our Environmental professionals are here to walk you through your project, and will set up an organized, objective plan for you, providing peace of mind during the entirety of the project.

With environmental impact at the forefront of our teams minds, we also offer a full range of risk reduction and prevention measures. It is our goal to solve issues that impact the environment the right way, the first time. Our engineers and environmental teams work closely together to identify environmental impacts, and provide the right solutions, making sure we stick to project timelines, and projects costs within budget.



## Environmental Services

WET has been working on environmental permitting projects since 2000 when our company started. Specific Environmental Permitting areas of service include:

### MDEQ Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activities Preparation

Industrial sites such as landfills, wastewater treatment plants, and mines require storm water permit coverage, which involves submitting a Notice of Intent (NOI) and a Storm Water Pollution Prevention Plan (SWPPP). Industries must comply with both general and sector specific requirements detailed in the permit. WET provides annual training for permittees.

### Montana Pollutant Discharge Elimination System (MPDES) Permit Preparation

When a construction project disturbs one or more total acres of land, a Montana Department of Environmental Quality (MDEQ) General Permit for Storm Water Discharges Associated with Construction Activity is needed. The goal of the permit is to prohibit the discharge of any pollutant to state surface water as sediment runoff rates from construction sites are 10 to 20 times greater than farm land or forested areas and discharges can affect: aquatic habitats, channel dynamics, and add nutrients and metals to state surface water. Sediment runoff rates from construction sites are 10 to 20 times greater than farm land or forested areas and discharges can affect: aquatic habitats, channel dynamics, and add nutrients and metals to state surface waters.

### MPDES Site Inspections

Storm Water Pollution Prevention (SWPPP) site inspections are required to be conducted following either a weekly or biweekly schedule as per Section 2.3 of the General Permit. Site inspections need to be conducted by a qualified SWPPP Administrator and are needed until a Notice of Termination (NOT) can be filled.

### County Septic Permit Preparation

MT Counties review proposed on-site wastewater systems using a nondegradation evaluation calculations for nitrate sensitivity and phosphorus breakthrough to insure that they will not degrade state surface or groundwater.

## Joint Application Permit Preparation

When construction activities are located on or near a waterway in Montana, permits may be required. Agencies are notified by submitting a Joint Application. The permits that may be needed:

- Conservation Districts (local government)—310 Permits
- MT Fish, Wildlife and Parks (state government)—SP 124 permits
- County Floodplain Administrators (local government) – floodplain permits
- US Army Corps of Engineers (federal government)—Section 404/Section 10 permits;
- MT Department of Environmental Quality (state government)—318 (turbidity) Authorizations; and
- MT Department of Natural Resource and Conservation (state government)—Navigable river land use licenses and easements.

## Major (>5-lots) and Minor (5-lots or less) Subdivision Permit Preparation

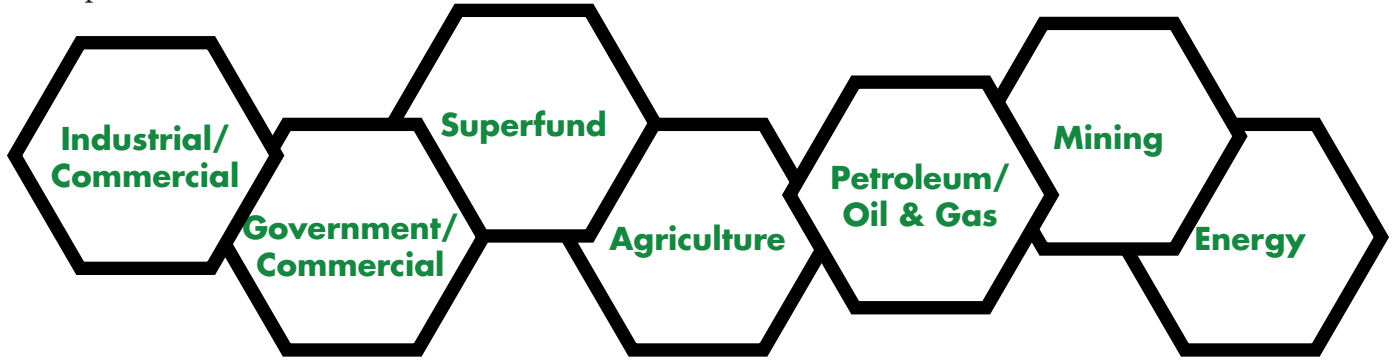
MDEQ reviews and approves the development of any lot less than 20-acres in size. All regulations relating to topography, geology, hydrology and water quality must be addressed in a formal application. Prior to approval, the lot or subdivision must demonstrate the following:

- Adequate water supply (quantity, quality and dependability)
- An on-site wastewater system
- Appropriate storm water controls
- Solid waste disposal system
- The well, on-site wastewater system, and storm water controls must be located and designed to meet all state and county regulations



# MARKETS SERVED

Our value is derived from having a comprehensive understanding of each industry we work in and knowing our clients' specific needs.



## KEY PERSONNEL

SepticNET and WET have worked shoulder to shoulder for over 10 years. Aside from the inventor and founder, SepticNET also has two additional full-time employees that help assemble, deliver, and install the septic systems in Butte, Montana.

WET employs nearly 100 employees across regional offices in Montana and Wyoming, which includes over 30 senior, principal, and manager level experts. WET also employs project, staff, and technician level specialists and has a full team of administrative professionals.



**Steve Anderson, PhD, PE**

 **Principal/Inventor**

In 2011, and in combination with WET, Steve invented and founded a revolutionary on-site wastewater treatment technology, called SepticNET. Steve has two issued patents for this SepticNET technology. SepticNET is currently the only system approved in Montana to remove nitrogen to below 7.5 mg/L without a minimum size specification.



**Senior Engineer/Project Manager**

For the last 16 years, Steve has been a Senior Engineer for WET out of the Butte, Montana office. During this time, Steve has worked on numerous projects including subdivision permitting, wastewater lagoon design, wastewater treatment optimization, drinking water treatment design, individual and community wastewater design, combustion waste landfill design and permitting, evapo-transpiration landfill cover design, industrial nutrient removal design, and numerous floodplain permits. Steve exhibits success in writing proposals, performing research, and establishing relationships with regulatory agencies and private industry.

Prior to joining WET and starting SepticNET, Steve spent over 10 years at Montana Tech where he served in numerous positions including Deputy Director of the Mine Waste Technology Program, Visiting Professor in the Geophysical Engineering Department, Research Professor in the Environmental Engineering Department, and Advisor for the Environmental Design Team.



**Josh Vincent, PE**

 **Co-Founder/President/Principal Engineer**

Josh has served as a project manager and principal engineer for dozens of municipal engineering, infrastructure improvement, and environmental projects. His project experience includes water/sewer/stormwater design, infrastructure master planning, feasibility studies, construction management, Superfund, water quality, and permitting. The successful completion of these types of projects has provided vast understanding and clear direction for infrastructure improvements for multiple Montana cities, towns, and districts. He has also served as a technical reviewer on behalf of the DNRC for their RRGL and RDGP grant/loan programs.

Josh's role will be to provide technical support to the project team to ensure the highest level of company support and communication. Josh will provide overall technical assistance and review of project deliverables to ensure that all project goals are met.



## Dave Erickson, PG, CPG



### Co-Founder/Principal Hydrogeologist

Dave has been a project manager and principal hydrogeologist with WET since its inception. He has a vast range of engineering experience managing large engineering and construction projects ranging from complex subsurface remediation to landfill capping and construction of large water supply projects. With his experience managing large multi-disciplinary team, Dave has successfully completed projects involving multiple regulatory issues and stakeholders with opposing positions. Dave has been active in the engineering consulting field for over 35 years.



## Elizabeth Erickson, MS



### Co-Founder/Principal Hydrogeologist

Since Elizabeth began working in the engineering consulting field, she has worked on contamination/Superfund related projects, primarily on the Butte and Anaconda sites. Tasks associated with projects include project management, remedial investigation, monitoring, and reporting. She has provided technical review and assistance services on remedial investigation and design documents, groundwater monitoring and modeling documents, and developed a Controlled Ground Water Area Petition in compliance with BPSOU ROD requirements.

Elizabeth has developed three dimensional geologic and hydrogeologic models of site data for interpretation, remedial design, and litigation purposes. She has provided project management and technical services for a contentious project involving upgrades to BSB's WWTP. This work has included technical, review and negotiation services and the development of multiple technical documents in coordination with MDEQ, EPA, and Atlantic Richfield (AR). She is also project manager for the Interim Institutional Controls Program in Anaconda-Deer Lodge County and is providing technical services in conjunction with a ROD modification, Consent Decree negotiations between the USEPA and AR, and settlement negotiations between the county and AR.



## Rich West, PE



### Senior Engineer

Rich is the WET Great Falls branch manager and a senior civil engineer with over thirty years of experience in consulting engineering. He specializes in project management, transportation engineering, drainage, site development, and municipal engineering. Rich provides services to various clients, including local, state, tribal, and federal entities, along with industrial clients and private developers.





## Shawn Arthur, PE



### Senior Engineer

Shawn Arthur is a Senior Civil Engineer responsible for municipal utility projects that include stormwater master planning, stormwater hydrology, hydraulic modeling, collection, conveyance, treatment, and detention structure design. Shawn's non-stormwater work includes sanitary sewer collection, pump station, and treatment system design, water pumping, storage, and distribution system design, water system modeling, water and sewer collection system rehabilitation, municipal subdivision master planning and design, ADA-compliant pedestrian facilities design, subdivision regulation development, stream channel stabilization, municipal street design, and industrial/commercial civil site design.

Shawn is a project manager and construction administrator who started his career in 1984 in the civil consulting engineering and heavy construction industries. He has served in the capacity of project manager, design engineer of record, quality control review engineer, and construction administration engineer on over one-hundred projects.



## Forrest Jay, PE



### Senior Engineer

Forrest has been a WET team member since July 2012 and has been working in the civil and environmental engineering field since 2005. He is experienced in various civil and environmental engineering applications including hydraulics, water sampling, hydrology modeling, stormwater modeling, water and wastewater utility design, water sampling, and site civil design. Since joining the WET team, Forrest has been project manager and lead engineer on civil site designs, including commercial and residential subdivisions, stormwater, sanitary sewer, water main designs and construction and industrial stormwater permitting.



## Stephen Frazee, PE



### Senior Engineer

Stephen joined the WET team in 2013. Previously, he worked part-time as a WET engineering intern during the fall of 2012. Since joining WET, Stephen has worked on civil and environmental projects that include municipal stormwater design, commercial civil site development, stormwater modeling, municipal sanitary sewer design, sanitary sewer collection, and pump station design. Stephen has also worked extensively with AutoCAD Civil 3D and has experience in surveying and construction oversight. Stephen is also WET's unmanned aerial vehicle (UAV) team manager and a licensed remote pilot. Stephen has extensive remote aerial survey experience for engineering, survey, and restoration projects.

## REFERENCES



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Anaconda, Montana

# THANK YOU FOR CONSIDERING US FOR THIS OPPORTUNITY!



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