WASH4GROWTH

COMMUNITY CENTRIC PROJECTS

GROWTH
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"The decisions we make today will define our society, economy, health and our climate for decades to come. The undersigned urge a joint global response to the COVID-19 pandemic that ensures a just recovery and transition to a better future for those in greatest need in the context of this Joint Civil Society Charter on Principles for a just recovery. "

OXFAM, Abril 2020

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ABOUT US

GROWTH is a Spanish NGO that carries out community development projects with the aim of generating a positive impact on today's society, with a particular focus on the most vulnerable communities in the world.

We work together by sharing knowledge, technical training and assistance in order to make a real, sustainable and lasting difference in the lives of the people who need it most.

Our projects seek to ensure greater and sustainable access to basic resources such as water, infrastructure, education and health for the communities involved in them.

Our methodology is based on a participatory approach, infused with the respect required for each individual being. We seek to generate the development and updating of knowledge, abilities and skills, not only of the communities with which we collaborate, but also of our entire team.

At the same time, we defend the idea that, in order for communities to grow, the participation of their members is necessary both in carrying out projects, and in planning and monitoring them.

In this way, one of the keys to our project is community participation in the analysis, decision-making and in implementation: our approach includes information, education, consultation, initiative strengthening, decision-making and management of activities in all phases of the project.

Therefore, communities are no longer simply the goal or objective of development, but also active subjects in the process. At GROWTH we want to extend this logic to all levels of the organization. Our ultimate goal is to generate real social transformation and to be consistent and transparent with our principles, inside and outside the organization.

We put all our efforts into caring and listening, both internally and in more distant contexts.

MISSION

Our mission is to **promote the implementation of sustainable development projects in vulnerable communities around the world.**

We want to promote the progress of resilient and democratic communities so that they can untap their full potential for development as a mechanisms to ensure just and equitable societies that guarantee their rights and well-being are developed.

We deeply believe that ending poverty requires inclusive and sustainable growth, defending and promoting free, peaceful and resilient communities, building human capital and creating social safety nets that reach the most vulnerable.

VISION

We work to build a world in which each community has the opportunity to manage its own growth through long-term sustainable development.

We seek to promote the spirit of self-sufficiency and self-management of communities in which we carry out our projects, so that all the inhabitants can actively participate in all phases of their development.

On the other hand, we promote the generation of alliances with local, national and international entities that accompany us in our development at the local level, establishing a common and horizontal dialogue, in such a way that these alliances are strengthened and adapted to the real needs of each project, using local staff and resources and training communities to encourage their participation in it.

By doing this, we support each community to be independent and resilient in creating its future.

COMMITMENT

GROWTH wants to ensure that community members are an integral part of the processes that determine their development: we want empower people so that they can initiate actions aimed at their own growth.

We are facilitators of change, our mission is to lead development cooperation projects, channeling donor and volunteer collaborations and coordinating the efforts of local communities.

Our effort multiplies on the ground when we involve community members and their local organizations.

VALUES

Our main values lie in the belief that people have the right to life, to security, to a sustainable livelihood, to be heard, to have an identity and to have access to basic services.

We adhere to all international conventions on human rights, such as the Universal Declaration of Human Rights.

Our core values are:

EMPOWERMENT

We strengthen the capacities of local communities to achieve the change they want to see in themselves. We facilitate change by giving the necessary opportunities and tools to increase their confidence and change their own lives.

PASSION AND COLLABORATION

We promote a culture of ethical and moral development that fosters and generates a motivation in accordance with social, democratic and participatory principles as necessary means for a real and systematic transformation of the world in which we live.

We form a human team promoted by strength and the firm will to fight to change things.

RESPONSIBILITY AND SUSTAINABILITY

We focus our efforts on guaranteeing transparency and responsibility, espousing virtues of accountability of our actions for our collaborators, partners, donors, workers and for society as a whole.

Our responsibility derives from the conviction that if we build a development approach based on sustainability in order to make a real, transformative and lasting difference in the world in which we live.

SUSTAINABILITY

In the context of International Cooperation, the sustainability of a project depends directly on the impact and results caused by the actions that are carried out.

In this sense, a sustainable project must incorporate criteria and objectives within the institutional, financial, environmental, technological, social and cultural fields.

The ultimate goal of GROWTH is to generate a positive impact in today's society and especially in the most vulnerable communities, through the provision of knowledge, technical training and assistance.

We recognize that eradicating poverty requires the implementation of strategies that improve health and education, reduce inequality, and stimulate social and economic growth.

In the projects we carry out, we train community members in technical aspects of construction and maintenance, in order to acquire skills and abilities useful to maintain the temporary and financial sustainability of the projects so that they can develop valuable skills that they can be used to maintain project sustainability and generate income.

GROWTH's development projects are structured around an inclusive, participatory and democratic 4-phase approach, including constant monitoring and control with stakeholders.

Monitoring activities are the sustainable arm in GROWTH's efforts to ensure the project has a lasting impact on development.

STRATEGIC ADAPTATION AS A RESPONSE TO COVID 19

The coronavirus pandemic is demanding a heavy price from individuals, communities and societies around the world.

Daily lives have been disrupted, economies have been pushed into recession, and many of the public health, economic, and social institutions have come under unprecedented pressure.

Covid-19 does not discriminate in terms of gender, social class, nationality or race, many development cooperation projects have had to be suspended and this situation has not only worsened the conditions of vulnerability experienced by millions of people in the world, but it has also put to the test the acting capacities of many international actors in the humanitarian field.

When this respiratory virus reached the Latin American continent, GROWTH was in the process of implementing the Piura Project , located in the Piura region, in northern Peru.

The Andean country was one of the first in the region to declare a state of emergency (March 16, 2020), thus forcing the confinement of its population, establishing daily curfews, closing its borders to air and land traffic and only allowing the exercise of essential economic activities.

Two months later, the Peruvian Government extended the health emergency until September 7, 2020, thus exposing the complex situation that the country is currently experiencing.

Despite the rapid response, Peru remains the sixth country in the world with the most accumulated cases of coronavirus, having surpassed the barrier of 268 thousand confirmed cases of and 8,761 deaths.

In these months, the rules of coexistence have been modified with restriction measures and curfews that are expected to continue, especially in regions where the virus is increasing, such as Lima, Callao and in Piura.
Community development must respond to the new conditions of thought and operation in a contemporary and post-covid situation. Our gravitation towards spreading awareness of prevention and precaution against the virus is, therefore, an initial response to our new reality.

Our team has experience and expertise in the various facets of WASH, our ideas related to participatory development workshops are dynamic and we now have the opportunity to adjust our current mission to adapt it to current conditions.

WASH IN RESPONSE TO COVID-19

Adapting to international recommendations for the prevention and response to Covid-19, GROWTH has identified the need to focus on training and promoting projects in water, hygiene and sanitation (WASH), both during the course of the pandemic and also after it.

Covid-19 reveals the deep gaps that exist in today's society and especially in the neediest populations. This is where the WASH4GROWTH project was born, which aims to support these communities through the provision of knowledge, technical training and assistance in water, hygiene and sanitation, in order to contribute to the improvement of their living conditions.

Faced with this new scenario, the GROWTH Team was forced to suspend the project in Peru, due to the impossibility of carrying it out due to the confinement measures established with the state of emergency.

We feel the responsibility generated by the health crisis of Covid-19 GROWTH feels the responsibility to reinforce and reformulate its approach to respond to this emergency that knows no borders.

The paradigm shift created by this crisis led to GROWTH refocussing on reflection, research and reformulation of the main focus of the projects carried out on the ground: from the beginning of the pandemic, GROWTH has continued to make efforts so that the global response to the spread of Covid-19 takes into account the most vulnerable population groups.

GROWTH aspires to be at the height of the current crisis circumstances, especially in relation to the situation of the Piura Project and the progress of future NGO projects.

Maintaining our main objective of generating a positive impact on vulnerable communities around the world, GROWTH's strategic adaptation aims to address one of the fundamental challenges facing global society today: **access to and promotion of basic water and hygiene services and sanitation (WASH).**

PIURA PROJECT ACTION PLAN

The Piura Project's ultimate objective is to improve the living conditions of the communities affected by the 2017 *El Niño* of San Martín de Letira (La Unión, Piura), Miguel Seminario and Los Almendros (La Arena, Piura), in northern Peru.

This project began in January 2020 and its main activities are the construction of an educational infrastructure in the town of Los Almendros, the installation of ecological dry toilets in the Miguel Seminario community and the rehabilitation of meeting and gathering spaces in the three communities. . Likewise, the project includes a second common strategic training line.

On March 16, 2020, a state of emergency was decreed in Peru, directly affecting the continuity of the Piura Project. Since then, the GROWTH Team remained in confined land for more than 2 months waiting to continue the project, although they were forced to activate the repatriation protocol, leaving the project suspended until further notice.

At GROWTH we attach great importance to the quality and relevance of our projects, taking responsibility for our actions, in order to meet the objective of improving the quality of life of the populations with which we collaborate.

Along these lines, when the state of emergency was decreed, the GROWTH Team made the decision to suspend the project to work on its reformulation, adapting it to current circumstances.

When the decree of the state of emergency came into force we were carrying out the construction of community premises and the development of training and awareness workshops in the town of San Martín de Létira, and initiating the first steps of the Dry Ecological Baths project in Miguel Seminario.

Until that moment, the construction project of the school and the community spaces in Los Almendros and Miguel Seminario had not begun to be built, since the start date of the works was planned to begin on May 1, 2020.

Due to the impossibility of acting on the ground, an attempt was made to identify the needs that arose as a result of the pandemic in order to offer assistance to the communities involved in the Project, but it was impossible due to the emergency situation and the collapse of the country.

Finally, after several meetings with various local and international organizations that are experts in food, health and humanitarian assistance, we were able to actively participate with an educational awareness and sensitization program collaborating with the Calandria organization.

We help promote the information campaign "Stop the Coronavirus Together" , which arose as an initiative in the face of the health emergency to educate citizens and prevent further spread of the virus in the Piura region.

The campaign has been disseminated thanks to the commitment of the Bajo Piura Communicators Network, which is made up of approximately 30 stations and the leaders that are part of it, inviting the Municipalities, representatives of Civil Society, to join this initiative. , as well as regional media and public and private organizations.

From GROWTH we have supported this campaign but at the same time we feel the responsibility to reinforce and reformulate our approach to give an optimal response to these communities, always maintaining our idea of empowerment through development.

After a deliberate analysis of all possible alternatives and scenarios, we believe it is convenient to reformulate the Piura Project approach, as well as our future cooperation projects, presenting a solution adapted to current needs that responds efficiently and minimizes the negative impact of this global health crisis.

ACTION PLAN

WASH4GROWTH

GROWTH aims to address one of the fundamental challenges facing global society today: **access to and promotion of basic water, hygiene and sanitation (WASH) services.**

From the GROWTH team we put all our efforts so that the global response to the spread of COVID-19 takes into account the most vulnerable population groups, such as women and children in developing countries, where millions of people lack access to basic water and sanitation services, have fragile health systems and insufficient resources to provide an appropriate response.

The differential value that demonstrates the integral character of GROWTH proposed in this intervention is based on our three common axes; Education, Community Development and Sustainability.

At GROWTH we put education at the center as the main tool that generates development, transforming individual and group skills to originate responses and solutions to the aforementioned problems.

In order to pursue the viability, relevance and sustainability of the intervention, it is proposed to enhance and promote the social and economic inclusion of all people, regardless of their age, sex, race, ethnicity, religion or economic situation, and especially of the most vulnerable population.

In this way, it contributes to reducing the existing structural inequality and increasing the spirit of self-sufficiency of the communities.

In a transversal way, it is committed to a WASH-oriented approach, that is, to quality water, safe sanitation and the promotion of good hygiene practices, as the main response to the challenges we face in the current global crisis.

PROJECT OBJECTIVES

Adapting to international recommendations for the prevention and response to Covid-19, GROWTH has identified the need to focus on training and promoting projects in water, hygiene and sanitation (WASH), both during the course of the pandemic and also after it Covid-19 reveals the profound gaps that exist in today's society and, especially, in the neediest populations.

This is where the WASH4GROWTH project was born, whose main objective is to improve the health and hygiene conditions of the most vulnerable populations in terms of water and sanitation, promoting community development through training, empowerment, gender equality and sustainability for its long-term development.

The project intends to directly support the most affected populations by carrying out community development projects that incorporate the construction of resilient infrastructures and the holding of WASH Workshops.

Two lines of intervention have been identified:

1st Axis of Intervention

HEALTH/ SANITATION INFRASTRUCTURE

Promoting the participatory creation of infrastructure and sanitation processes that improve the health and hygiene conditions of the populations, guaranteeing sustainability in the medium and long term.

2ND AXIS OF INTERVENTION

WASH AND COVID-19

Promoting training and education in water, hygiene and sanitation, which favors sustainable and equitable community development, helping to improve the quality of life of the most vulnerable populations.

AXIS OF INTERVENTION:

HEALTH/ SANITATION INFRASTRUCTURE

Access to sanitation services is a fundamental human right for the dignity and health of people.

It is a way of notably improving health conditions, which is why this right is considered an essential factor in efforts to alleviate poverty.

Adequate sanitation conditions mitigate or eliminate the risks of transmission of infectious and parasitic diseases, in addition to guaranteeing a healthy living environment and greater physical, mental and social well-being of the population.

In addition, although many have this service, they do not use it properly due to the lack of good hygiene practices and environmental awareness.

In communities that lack adequate sanitation conditions, greater vulnerability is generated to the appearance of environmental problems such as water pollution and inadequate handling of organic waste, which becomes a triggering factor in the appearance of diseases that deteriorate the health of the population .

At GROWTH we seek to contribute to the promotion of new ways in the management of rural sanitation, without water consumption and without generation of sewage.

PLANNED ACTIVITIES

The activities proposed to promote the participatory creation of infrastructure, tools and sanitation processes that improve the health and hygiene conditions of the population are the following:

Construction of hand washing stations (Hand Washing Project)

Today more than ever, hand washing is of vital importance due to the critical world situation in which we find ourselves.

With the implementation of a hand washing station, composed of a basic metal structure that holds a container or jerrycan with clean water inside, along with access to hand soap, we allow all families in the community to have access to the correct hand washing, thus ensuring the hygiene of the population and preventing the spread of the virus.

PLANNED ACTIVITIES

Provision of water filters (Water Project)

Access to quality drinking water is a priority and an often-unmet basic need: globally, 1.7 billion people lack access to safe water.

Problems of access to drinking water cause more than 3.350 million cases of diseases annually. According to the World Health Organization (WHO), 80% of the most common diseases in developing regions are related to water quality.

The implementation of water purification filters guarantees the quality of the supply avoiding the risk of contracting diseases that can affect the health of all types of people, especially the most vulnerable.

For this project, we seek to collaborate again with the Sawyer company, with whom we already collaborated in the Somapura Project (Polonnaruwa, Sri Lanka) in 2017. Sawyer filters offer a fast, efficient and sustainable solution to purify water: they use Hollow Fiber Membranes, a technology developed for kidney dialysis, reaching the highest level of filtration existing today.

AXIS OF INTERVENTION:
WASH COMMUNITY WORKSHOPS

The second axis of intervention consists of the implementation of community workshops on water, hygiene and sanitation, developing through awareness, promotion and training of community members.

It seeks to generate a change in habits that improves hygiene practices in order to reduce the spread of water-related diseases and break the cycle of poverty, promoting sustainable growth.

The activities that promote training and education on water, hygiene and sanitation are carried out through participatory workshops that allow the community to acquire knowledge and skills in planning, developing and monitoring community projects, promoting sustainable and equitable community development.

These make it easier for the community to manage its own learning process as the project develops: it is intended that the communities themselves become aware of their health and environmental problems and, based on these, plan their activities.

So the project will be based on participatory community approaches, whereby its members will fully participate in planning, decision-making and local management of the new system introduced in it; This will not only ensure that the entire population has access to sanitation services, but also that there is awareness of the entire community development process.

PLANNED ACTIVITIES

The following specific activities are carried out in the WASH Workshops:

Hand Washing Station Project: Technical assistance will be trained and trained on the correct use and maintenance of hand washing stations, to guarantee the effectiveness, sustainability and positive impact of the project, as the main preventive response to Covid-19.

Water Filters Project: Knowledge will be provided on the operation and maintenance of the water purifying filter, in order to sensitize and directly educate families in each community about the importance of drinking water consumption and the risks of drinking for health. contaminated water.

Soap and Masks Project: With the aim of providing tools and knowledge, it is proposed to promote the manufacture of soaps and masks as a strategy to raise awareness and sensitize personal protection measures, as an alternative to prevent Covid, offering an opportunity for growth and community development.

The development of these initiatives depends directly on the situation that we find ourselves at the time of carrying out the project in the field.

These may be altered by the progress of the pandemic and the needs at the time the project is carried out.

PROVISIONAL CALENDAR

The provisional timetable for the development of the WASH4GROWTH Project is detailed below:

FIRST PHASE

JUNE - AUGUST 2020

The GROWTH Team reaches out to the beneficiary communities of the project.

It is listened to, it is observed and with them a set of unmet needs is detected and defined that, taking into account technical, economic, social and environmental criteria, will give rise to the planning of the cooperation project.

SECOND PHASE

SEPTEMBER - DECEMBER 2020

The GROWTH Team works on the need's assessment, the development of the intervention strategy and the search for collaborators to guarantee the quality and relevance of the project.

THIRD PHASE

JANUARY -JULY 2021

Community members, with the support of local authorities and the GROWTH Team, execute the development project and receive the corresponding training.

The GROWTH Team accompanies and directs the execution of the infrastructure works and the development of community training workshops, with the purpose of strengthening the technical and management knowledge of the population, both for the execution and maintenance of the draft.

FOURTH PHASE

JULY 2021 - JULY 2026

The community and the GROWTH Team jointly guarantee the sustainability and progress of the project for a period of 5 years in which a periodic monitoring of the project carried out is carried out.

MONITORING

JUNE 2020 - JULY 2021

In all phases the monitoring activity is carried out to guarantee that the intervention is always directed, measured and controlled in a satisfactory way, ensuring compliance with the planned activities and the quality of the results, establishing the causes and the appropriate adjustments.

MONITORING AND EVALUTATION

In the development of projects, GROWTH implements participatory monitoring and evaluation mechanisms based on operational planning aimed at meeting the objectives.

By providing these objective and independent evaluations, we ensure the accountability of the organization to its Board of Directors, donors, partners, collaborating companies, national and international governments and beneficiaries.

Until now, the highest efficiency in terms of activities, objectives and results of the Piura Project has been guaranteed.

In line with the Project planning times, the general and specific objectives foreseen were achieved: the objective of the Creating Community initiative is the creation of a community space to meet and make decisions in a common way.

In this project execution period, it has been observed that the initiative continues to be relevant to the needs and possibilities of improving the living conditions of the San Martín de Létira community and results were achieved as the members of the San Martín de Létira community. Martín de Létira worked together to achieve a common goal and; Although the construction of the community premises has not been completed, a large part of it could be carried out.

During the entire life cycle of a development project, challenges, problems and incidents can arise and it is especially in this current moment of uncertainty about the future that GROWTH must be prepared to be able to control all kinds of situations and focus its efforts on ensuring that the WASH4GROWTH project is successfully managed, measured and controlled in all phases of the intervention.

For this reason, the implementation of the monitoring, evaluation, accountability and learning system (MEAL) is expected throughout the development of the project.

CONCLUSION

The current crisis is showing the urgent need to transform the current social model towards another that ensures and puts human life and the sustainability of the planet at the center.

GROWTH considers it necessary to put all its efforts so that the global response to the spread of Covid-19 is the most effective in the context in which we find ourselves.

In order to respond efficiently and minimize the negative impact of this crisis, we present the adaptation of the approach strategy of the Piura Project and the proposal to open a new line of action, WASH4GROWTH, since we consider it necessary to develop a project that responds to the current needs of particularly vulnerable populations affected by the pandemic.

WASH4GROWTH is presented as a replicable and flexible proposal in terms of its implementation in different places and communities that the GROWTH team is studying, having already identified a series of suitable countries for the correct development of the water, hygiene and sanitation project, to waiting for access to information regarding the progress of the pandemic and the existing social situation.

ANEXES

Anex I Logical Framework

Anexo II Stakeholders Matrix

Anexo III Water Filter Specification

MATRIZ DE OBJETIVOS WASH4GROWTH

OBJETIVOS	METAS	
Objetivo de Desarrollo (Fin)	Generar un impacto positivo en la sociedad actual y en especial en las comunidades más vulnerables, a través del suministro de conocimientos, capacitación técnica y asistencia, con el fin de conseguir una diferencia real, sostenible y duradera en sus vidas.	
Objetivos Desarrollo Sostenible (ODS)	- **ODS 3:** Garantizar una vida sana y promover el bienestar para todos en todas las edades - **ODS 4:** Garantizar una educación inclusiva y equitativa de calidad y promover oportunidades de aprendizaje permanente para todos - **ODS 6:** Garantizar la disponibilidad de agua y su gestión sostenible y el saneamiento para todos - **ODS 11**: Lograr que las ciudades y los asentamientos humanos sean inclusivos, seguros, resilientes y sostenibles. - **ODS 17:** Fortalecer los medios de implementación y revitalizar la Alianza Mundial para el Desarrollo Sostenible	
Objetivo General (Propósito)	Mejorar las condiciones de salud e higiene de las poblaciones más vulnerables en materia de agua y saneamiento, promoviendo el desarrollo comunitario a través de la capacitación, el empoderamiento, la equidad de género y la sostenibilidad para su desarrollo a largo plazo.	
Objetivos Específicos	**O.E.1.**	Impulsar la creación participativa de infraestructuras, herramientas y procesos de saneamiento que mejoren las condiciones de salud e higiene de la población, garantizando una sostenibilidad a medio y largo plazo.
	O.E.2.	Promover la capacitación y formación en materia de agua, higiene y saneamiento, que favorezcan el desarrollo comunitario sostenible y equitativo, contribuyendo a mejorar la calidad de vida de las poblaciones más vulnerables.
Actividades	**Línea Estratégica 1**	- **Hand Washing Project:** *Dotación de infraestructuras para el correcto lavado de manos en las comunidades beneficiarias* - **Water Filters Project:** *Implementación de diversos filtros de agua potable para las familias de las comunidades beneficiarias* - **Bike Project:** *Entrega de bicicicletas como medio facilitador del acceso al agua de calidad en las comunidades beneficiarias*
	Línea Estratégica 2	- **Talleres WASH:** *Capacitación y formación en materia de agua, higiene y saneamiento.* Actividades específicas: -Hand Washing Station Project: *Capacitación y formación sobre las estaciones de lavado de manos* -Water Filters Project: *Capacitacion y formación sobre los filtros de agua potable* -Soap and Mask Project: *Capacitación, formación y fabricación de jabones y mascarillas sanitarias* -**Talleres Bike Project:** *Capacitación y formación sobre el correcto uso y mantenimiento de las bicicletas*

MATRIZ DE STAKEHOLDERS WASH4GROWTH

Matriz de Stakeholders						
Proyecto	WASH4GROWTH					
Objetivo General	Mejorar las condiciones de salud e higiene de las poblaciones más vulnerables en materia de agua y saneamiento, promoviendo el desarrollo comunitario a través de la capacitación, el empoderamiento, la equidad de género y la sostenibilidad para su desarrollo a largo plazo					
Stakeholders	**Internos**	Equipo de GROWTH Asistente en Terreno (Capacitación) Asistente en Terreno (Construcción)				
	Externos	Comunidad Niños Representantes locales Representantes nacionales y regionales Autoridades locales Autoridades nacionales y regionales Instituciones responsables de agua y saneamiento Instituciones financieras ONGs locales y nacionales ONGs internacionales Consultores de seguridad e higiene (WASH) Proveedores de seguridad e higiene Proveedores de servicios técnicos Comité WASH Medios de comunicación locales					
Objetivos	**Stakeholders**	**Nivel de Interés**	**Nivel de influencia**	**Posible Acciones**		**Estrategias**
				Impacto positivo	**Impacto Negativo**	
Impulsar la creación participativa de infraestructuras y procesos de saneamiento que mejoren las condiciones de salud e higiene de la población, garantizando una sostenibilidad a medio y largo plazo.	Comunidad	5	5	Participación activa en la construcción y mantenimiento de las instalaciones de WASH.	Falta de experiencia y conocimientos técnicos en construcción.	Participación de la comunidad como actores principales del proyecto. Escuchando sus necesidades y experiencia
	Niños	5	4	Participación activa en la construcción y mantenimiento. Participación activa en el mantenimiento de las instalaciones de WASH.	Uso incorrecto de las instalaciones.	Participación de los niños en el aprendizaje del mantenimiento de las estructuras.
	Representantes locales	4	5	Participación activa en la construcción, logística y mantenimiento de instalaciones WASH.	Figura ausente, con intereses políticos	Otorgar importancia a la influencia política que el representante puede ejercer como promotor del proyecto.
	Representantes nacionales y regionales	4	5	Alianza con el objetivo ultimo del proyecto, el cambio social y los valores del GROWTH	Intención política de promover sus propios intereses.	Participación de las partes interesadas en la implementación del proyecto
	Autoridades locales	4	5	Participación activa en el proyecto y en la promoción de los valores de GROWTH	Obstrucción político-administrativa en el desarrollo del proyecto.	La institución local asume un papel fundamental en el proyecto. Participación de la institución local en la planificación.
	Autoridades nacionales y regionales	4	5	Participación activa en la gestión administrativa y logística del proyecto.	Obstrucción político-administrativa en el desarrollo del proyecto.	Otorgar importancia a la influencia política que las autoridades pueden ejercer como promotores del proyecto.
	Instituciones responsables de agua y saneamiento	5	5	Participación activa en la construcción, logística y mantenimiento de instalaciones WASH. Proveer de metodologías y habilidades técnicas.	Mala preparación técnica. Negación al compartir sus conocimientos para mantener la exclusividad de su servicio.	Supervisar la construcción de instalaciones. Gestión del mantenimiento.
	Instituciones financieras	3	5	Satisfacción con el proyecto. Aumentar las donaciones y confiar en el CRECIMIENTO	Falta de participación económica en el proyecto.	Informe detallado del éxito del proyecto para fomentar las donaciones.
	ONGs locales y nacionales	5	3	Cooperación para aumentar el número, la calidad de los servicios y capacidades ofrecidos a la comunidad.	Mala gestión. Desentendimiento del objetivo último de GROWTH	Participación de las partes interesadas en la implementación del proyecto. Cooperación para aumentar el número y la calidad de los servicios y capacidades ofrecidos a la comunidad.
	ONGs internacionales	4	3	Cooperación para aumentar el número, la calidad de los servicios y capacidades ofrecidos a la comunidad.	Mala gestión. Desentendimiento del objetivo último de GROWTH	Participación de las partes interesadas en la implementación del proyecto. Cooperación para aumentar el número y la calidad de los servicios y capacidades ofrecidos a la comunidad.
	Consultores de seguridad e higiene (WASH)	5	5	Proveedores de metodologías y habilidades técnicas.	Establecer precios más altos a una ONG extranjera. Mala preparación técnica	Participación de las partes interesadas en la implementación del proyecto
	Proveedores de seguridad e higiene	3	5	Precios de mercado sin cambios que permiten la compra conveniente de las materias primas.	Falta de materiales de construcción. Establecer precios más altos a una ONG extranjera	Participación de las partes interesadas en la implementación del proyecto
	Proveedores Técnicos	3	5	Proveedores de metodologías y habilidades técnicas. Precios de mercado sin cambios que permiten la compra conveniente de sus servicios.	Establecer precios más altos a una ONG extranjera	Participación de las partes interesadas en la implementación del proyecto
	Comité WASH	5	5	Participación activa en la construcción, logística y mantenimiento de instalaciones WASH. Proveer de metodologías y habilidades técnicas.	Mala preparación técnica. Problemas internos	Supervisar la construcción de instalaciones. Gestión del mantenimiento
	Medios de comunicación locales	3	4	Alianza con el objetivo ultimo del proyecto, el cambio social y los valores del GROWTH	Falta de interés en las comunidades / proyecto	Contactar e introducir los medios locales como medio de transmision
	Equipo de GROWTH	5	5	Desarrollo correcto de todas las fases del proyecto.	Falta de profesionalidad en el desarrollo de las actividades.	Capacitar al equipo de GROWTH para continuar la misma línea de la misión y visión de la ONG.
	Asistentes en terreno (Construcción)	4	4	Profesionalidad y disponibilidad para llevar a cabo la construcción a tiempo.	Falta de materiales de construcción. Establecer precios más altos a una ONG extranjera	Desarrollo de relaciones interpersonales basadas en el profesionalismo, el respeto mutuo y la confianza.
	Comunidad	5	5	Participación activa en la adquisición de conocimientos y difusión del proyecto.	Dificultad para comprender la utilidad práctica del conocimiento WASH adquirido.	Participación de los miembros de la comunidad como promotor principal de las habilidades de WASH
	Niños	5	4	Participación activa en la adquisición de conocimiento y su futura difusión.	Dificultad para comprender la utilidad práctica del conocimiento WASH adquirido.	Compromiso de los niños a través de contenidos divertidos, efectivos y útiles.
	Representantes locales	4	5	Participación activa en la realización del proyecto, en la transmisión de conocimiento y en la promoción de valores de GROWTH	Dificultad para comprender la utilidad práctica del conocimiento WASH. Falta de (o mala) influencia política	Otorgar importancia a la influencia política que el representante puede ejercer como vehículo fundamental de motivación y cambio social.

Promover la capacitación y formación en materia de agua, higiene y saneamiento, que favorezcan el desarrollo comunitario sostenible y equitativo, contribuyendo a mejorar la calidad de vida de las poblaciones más vulnerables	Representantes nacionales y regionales	4	5	Facilitar e implementar el éxito del proyecto. Alianza con el objetivo ultimo del proyecto, el cambio social y los valores del GROWTH	Intención política de promover sus propios intereses.	Participación de las partes interesadas en la implementación del proyecto (evitando cualquier implicación política o estrategia de marketing)
	Autoridades locales	4	5	Participación activa en la realización del proyecto, en la transmisión de conocimiento y en la promoción de valores de GROWTH	Obstrucción político-administrativa en el desarrollo del proyecto. Bajo nivel de importancia a la capacitación WASH	Implicación de las instituciones como principal promotor de habilidades de WASH y creador de capacitaciones.
	Autoridades nacionales y regionales	4	5	Participación activa en la realización del proyecto, en la transmisión de conocimiento y en la promoción de valores de GROWTH	Dificultad para comprender la utilidad práctica del conocimiento WASH. Falta de (o mala) influencia política	Otorgar importancia a la influencia política que las Autoridades pueden ejercer como vehículo fundamental de motivación y cambio social.
	Instituciones responsables de agua y saneamiento	4	5	Participación activa en la adquisición y difusión de conocimientos técnicos. Fundamental para comprender las modalidades de transmisión del conocimiento y su nivel.	Mala preparación técnica. Evitar compartir sus conocimientos para mantener la exclusividad de su servicio.	Implicación de las instituciones como promotor de importantes habilidades de WASH y cambio social.
	Instituciones financieras	3	5	Satisfacción con el proyecto. Aumentar las donaciones y confiar en el GROWTH	Falta de participación económica en el proyecto.	Informe detallado del éxito del proyecto para fomentar las donaciones.
	ONGs locales y nacionales	5	3	Cooperación para aumentar el número y la calidad de los servicios y capacidades ofrecidos a la comunidad.	Mala gestión. Desentendimiento del objetivo último de GROWTH	Participación de las partes interesadas en la implementación del proyecto. Cooperación para aumentar el número y la calidad de los servicios y capacidades ofrecidos a la comunidad.
	ONGs internacionales	4	3	Alianza con el proyecto Cooperación para aumentar el número y la calidad de los servicios y capacidades ofrecidos a la comunidad.	Mala gestión. Desentendimiento del objetivo último de GROWTH	Participación de las partes interesadas en la implementación del proyecto. Cooperación para aumentar el número y la calidad de los servicios y capacidades ofrecidos a la comunidad.
	Consultores de seguridad e higiene (WASH)	4	4	Participación activa en la adquisición y difusión del conocimiento técnico	Mala preparación técnica. Evitar compartir sus conocimientos para mantener la exclusividad de su servicio.	Implicación de los Consultores como vehículo de importantes habilidades técnicas de WASH
	Proveedores de seguridad e higiene	3	5	Precios de mercado sin cambios que permiten la compra conveniente de la materia prima.	Establecer precios más altos a una ONG extranjera	Participación de las partes interesadas en la implementación del proyecto
	Comité WASH	5	5	Participación activa en la adquisición y difusión de conocimientos técnicos.	Mala preparación. Compartir conceptos populares erróneos y dañinos.	Formación. Participación del Comité como promotor de importantes habilidades de WASH y cambio social.
	Medios de comunicación locales	3	4	Alianza con el objetivo ultimo del proyecto, el cambio social y los valores del GROWTH	Falta de interés en las comunidades / proyecto	Contactar e introducir los medios locales como medio de transmision
	Equipo de GROWTH	5	5	Desarrollo correcto de todas las fases del proyecto.	Falta de profesionalidad en el desarrollo de las actividades.	Entrenar al equipo de GROWTH para seguir la misión y la visión de la ONG
	Asistentes en terreno (Capacitación)	4	4	Implementación adecuada de talleres de capacitación, comprensión de las necesidades de la comunidad.	Falta de conocimiento Mala comprensión de los principios del GROWTH	Desarrollo de relaciones interpersonales basadas en profesionalismo, respeto mutuo y confianza.
Conclusiones		Son actores clave, si no se toman medidas positivas, pueden disminuir la efectividad del proyecto, generar dificultades con otros actores y verse afectados tanto la gestión de las actividades como de sus resultados. Para alentar su impacto positivo es esencial hacerlos sentir parte del proyecto y promotores del desarrollo a largo plazo y el cambio social.				

CLEAN WATER

CHANGE A LIFE - CHANGE A VILLAGE

THE FASTEST, EASIEST AND MOST COST EFFICIENT WAY TO GET SAFE WATER

SAWYER®

EMPOWER A VILLAGE

Recent studies have shown Sawyer filters eliminate up to 85% of all diarrhea, 98% of which was obtained through water. The remaining diarrhea was contracted through touching contaminated food and inadequate washing which sanitation and hygiene education will help to further reduce. **When you eliminate waterborne disease from a village you empower that village in more ways than you can imagine.**

Economic Impact

- Income is no longer spent on medical bills for preventable diseases.
- The filter pays for itself within a year with money that would have been spent on medical bills or fuel/wood to boil water.
- Men and women are healthy enough to work and earn a living.
- Parents don't have to stay home from work and tend to their sick children.
- Children can attend school and get an education.

Environmental Impact

Sawyer water filters are among the most significant developments in the history of environmental conservation.

The filter completely eliminates the need to clean water by boiling. The average family of four who cleans their water by boiling burns the equivalent of 10 to 40 trees, 39 gallons of oil, or 211 pounds of natural gas. The only energy source required by Sawyer filters is gravity.

"We had not known the actual cause of constant illness of our children until the filtration of water and the community education on household hygiene and sanitation was introduced in our community by MAP International. Today, we are stronger as a community and are much more able to be focused in all our work in the fields than spending half a year in hospital with sickly children. We will demand that government provides these filters to every household!"

-Ugandan recipient of a water filter

Assembly line in Haiti

PROVIDING JOBS

Not only are Sawyer filters being distributed for humanitarian aid, they are also creating sustainable economic opportunities in several countries around the globe.

According to the WHO, "Water management is a key factor in the global battle to remove the scourge of extreme poverty and to build secure and prosperous lives for hundreds of millions of people in the developing world."

A Sustainable Model

Sawyer has assembly facilities in Haiti, Rwanda, Ghana and Guatemala. Currently these facilities are mainly servicing NGO's and relief agencies. However, in the near future sales of Sawyer's commercial line of water filters will create many more jobs as these low cost home systems are marketed and sold on a mass scale to families in more urban areas.

DISASTER RESPONSE

Currently, Sawyer filters are being used in **Haiti, Chile, Pakistan, Brazil, Japan, and Indonesia** to provide safe water to millions of people.

Sawyer filters offer a fast, efficient and sustainable solution to clean water in the event of a natural disaster.

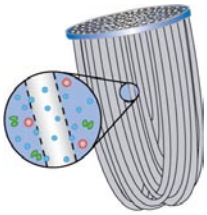
No electricity, chemicals or technical training is required. Not only will these filters provide immediate relief after the disaster, the filters will still be functioning years and years down the road.

You can find a Sawyer "Build your own emergency water kit" at many US retail stores such as Cabelas, Bass Pro Shop and Lowes.

Filters delivered by the UN to combat Cholera in Haiti

PRODUCTS

Sawyer water filters use Hollow Fiber Membranes, a technology developed for kidney dialysis. Our filters are comprised of tiny "U" shaped micro tubes that allow water to enter into their cores through tiny micro pores. The pointONE Filter's™ pores are so small (0.1 micron absolute) that no harmful bacteria including those which cause Cholera , Typhoid and E. Coli, protozoa, or cysts can get through. The filter attains the highest level of filtration available today exceeding US EPA standards for drinking water. If viruses are an issue we offer the PointZERO TWO Purifier™ (0.02 micron absolute pores).



PointONE Filter™

Create a point of use water filtration system in minutes by affixing the 0.1 micron filter to a locally found plastic container. Fill up the bucket with water from a lake, stream, borehole, contaminated well and gravity does the rest. This fast flowing system produces more than enough clean, safe water for a family's daily drinking, cooking and cleaning needs. With proper maintenance the filter never needs replacing. When it clogs or slows down simply backwash it with the included syringe.

Removes: ALL harmful bacteria and protozoa
Output: Up to 360 gallons per day using gravity. Increase the output with additional filters or increased head pressure.
Life expectancy: Capable of lasting decades
Weight: 8 ounces, find a bucket when you get in country.

Squeeze Filter

Don't trust the tap or bottle water abroad? This filter screws directly on to most threaded water bottles as well as the reusable pouches included with the filter. You can either squeeze the pouch and filter water into a different container/water bottle or drink directly from the filter. This lightweight filter is perfect for traveling.

Removes: ALL harmful bacteria and protozoa
Output: As fast as you can drink
Life expectancy: Capable of lasting decades
Weight: 3 ounces

PointZERO TWO Purifier™

Ideal for remote medical clinics, this 0.02 micron purifier removes viruses in addition to all harmful bacteria and protozoa without the use of chemicals. Affix the purifier to a plastic container and gravity does the rest. Turn swamp water into surgical water in seconds.

Removes: ALL harmful bacteria and protozoa as well as viruses
Output: Up to 150 gallons per day using gravity. Increase the output with additional filters or increased head pressure.
Life expectancy: Capable of lasting decades
Weight: 12 ounces, find a bucket when you get in country

10" Filter Unit

Get up to 5,000 gallons of clean water for your home, school, hospital, office building, etc. with our new 10" filter. This unit easily attaches to your indoor plumbing and removes the harmful contaminants before they reach your faucet. The 10 " filter can be used with household or commercial building pressure (60psi) as well as with very low pressures and gravity feed applications. This unit is available pre-plumbed with brass or PVC and includes a regulator which allows you to safely clean the filter by backwashing it at an exact pressure.

Removes: ALL harmful bacteria and protozoa
Output: Up to 5,000 gallons per day
Life expectancy: Capable of lasting decades
Weight: 8 lbs

WON'T YOU JOIN US?

Imagine a world where everyone has access to clean water - Where mothers can provide safe water to their children - Where sickness doesn't rob those children of their education and childhood.

Imagine a world where money doesn't have to be spent on buying medication for preventable diseases, but is spent feeding children starving.

Imagine where parents can feel healthy enough to work and earn a living so they can help change their world for the better.

You can help make that world a reality.

VISIT POINTONEFILTER.COM FOR MORE INFORMATION

CONTACT US

SAWYER PRODUCTS, INC.
P.O. BOX 188, SAFETY HARBOR, FL 34695
PHONE: 727.725.1177 - Ext 21 Ask for Donna
TOLL FREE 800.356.7811 -- Ext 21 Ask for Donna
FAX: 727.725.1954
EMAIL: POINTONEFILTER@SAWYER.COM

SAWYER INTERNATIONAL

THE SAWYER SAFE STANDARD

HIGHEST REMOVAL RATES Independent studies have show 8 log (99.999999%) removal rates. Full report here

ROBUST Calvin University conducted a fiber strength (hoop stress) study and found Sawyer fibers to be the strongest hollow fibers on the market. This is why Sawyer filters can be cleaned and restored for decades. Full report here

ENDURANCE A study by Messiah College using the WHO test standards showed the filters were still effective after 200,000 liters of water. At a bucket a day, that is 30 years of safe water. Full report here

GUARANTEED SAFETY Each filter is tested three times so that Sawyer can guarantee that we never ship a filter from which you can get sick from bacteria, protozoan or cysts.

When best practices are performed when training and educating end users how to best use a Sawyer filter, you will get incredible results like we're seeing in Fiji and Liberia.

EFFICACY The Fiji and Liberia studies prove that these filters reduce sickness at levels never seen before. Full report here

SAWYER SAFE®

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Microbiological Testing of the Sawyer Mini Filter

16 December 2013

Summary

The Sawyer Mini Filter was tested for its ability to remove three microorganisms – *Raoultella terrigena*, *Bacillus subtilis*, and *Micrococcus luteus* – using USEPA approved procedures. The organisms were added to test water to reach a 10^7 – 10^8 initial concentration. The test water followed the criteria set forth by the USEPA 1987, following the conditions for "test water #3". All of the three tested filters met the target reduction of 6 log units, or 99.9999% for all runs. The Sawyer Mini filter meets the USEPA standard for bacteria.

Table 1. Mean log removal values (LRV) with standard error for three Sawyer Mini filter tests. Water was collected and microbiologically analyzed after 100, 500 and 900 milliliters passed through the filter.

	Passed through filter		
Organism	100	500	900
M. luteus	7.0927 (0.0239)	7.0927 (0.0239)	7.0927 (0.0239)
B. subtilis	7.407 (0.0188)	7.407 (0.0188)	7.407 (0.0188)
R. terrigena	8.457 (0.2823)	8.616 (0.1312)	8.616 (0.1312)

Introduction

Filtration is "a pressure- or vacuum-driven separation process in which particulate matter larger than 1µm is rejected by an engineered barrier primarily through a size exclusion mechanism and which has a measureable removal efficiency of a target organism that can be verified through the application of a direct integrity test" (40 CFR 141.2). The Sawyer filters underwent challenge testing with specific microorganisms to determine if the filter performed as a barrier. Standard United States Environmental Protection Agency (USEPA) approved procedures were followed.

A minimum of three Sawyer Mini filters were tested in triplicate. The filters were conditioned with a 5% chlorine solution and sterile test water at 20 psi. The challenge microorganism (Table 2) was mixed with test water to obtain a 10^7 cells/100 mL concentration and was forced through the Sawyer filters at 10 psi. 100mL of filtrate was collected in a sterile Whirl pak after 100, 500 and 900 milliliters passed through the Sawyer Mini filter and analyzed for microbial growth using the membrane filtration technique following Standard Methods 9222. (APHA et al., 2012).

Surrogate organisms of similar size, approved by the USEPA, were used in place of the pathogenic target organisms to avoid unnecessary safety hazards.

Table 2. Challenge test organisms and USEPA approved surrogates (USEPA, 2005 and NSF 2005)

Target Organism	**Surrogate**	**Size range (µm)**
Fecal Coliform (bacteria)	*Raoultella terrigena* (ATCC 33628)	2-4
Cryptosporidium	*Bacillus subtilis*	5-7
Giardia	*Micrococcus luteus*	10-12

In the USEPA Guide Standard and Protocol for Testing Microbiological Water Purifiers (1987), it states a minimum reduction for protozoan parasites of log 3 units and a minimum of 6 log units for bacteria. All targeted log reductions for surrogates were set at a 6 log units, or 99.9999% reduction.

Methods

Stock cultures were quadrant streaked onto Trypticase soy agar (TSA) plates and incubated at 32°C for 24 hours. A pure culture was selected from the plate. The pure culture was inoculated into a 250 ml flask containing 100 ml of Trypticase soy broth (TSB). The flask was placed on a multiplatform shaker and incubated at 32°C overnight

to grow the cells to stationary phase. The cells were counted using a Petroff-Hauser counting chamber. The test water was inoculated to obtain a final density in the 10^7-10^8 cells/100 ml range.

Test Water and Solutions:

Test Water: The water used for testing was obtained from the Yellow Breeches Creek, which is the source for municipal drinking water in Cumberland and York Counties in Pennsylvania. Water was collected in a 20 L carboy and autoclaved at 121°C (15 lb pressure) for 35 minutes to obtain sterile test water. 1 L of the test water was aseptically adjusted for the following conditions for "test water #3" (USEPA 1987).

- pH adjusted to 9 by using HCl or NaOH, SM 4500- H^+ B
- Total Organic Carbon minimum of 10 mg/L adjusted with humic acid, SM 5310 C
- Turbidity 30 NTU (Nephelometric Turbidity Unit) or greater, adjusted with Kaolin or Arizona Road dust, SM 2130B/Method 2
- Total dissolved solids were 1,500 mg/L ± 150 mg/L, TDS meter tested
- Temperature of test water was chilled to 4 °C ± 1 °C, SM 2550 B

Standard methods (APHA et al., 2012) were followed to ensure test water conditions.

1.1 L of challenge test water was dispensed into 2L vacuum bottles (Nalgene) and autoclaved at 121 °C (15 lb pressure) for 30 minutes. The final pH was 9.0 ± 0.2, turbidity 100NTU, TOC 15.5 mg/L, and TDS 1400 mg/L. The challenge test water bottles were placed in a refrigerator to attain a temperature of 4 °C prior to testing.

Trypticase Soy Broth (TSB) (BD Diagnostic Systems)

Into 1 L of reagent grade distilled water, dissolved 30g dehydrated TSB. The media was then dispensed in culture tubes and 250 ml flasks, covered with caps/foil and autoclaved at 121 °C (15 lb pressure) for 15 minutes.

Trypticase Soy Agar (TSA) (BD Diagnostic Systems)

To 1 L of reagent grade distilled water, dissolved 40 g dehydrated TSA in a flask and heated to boiling with stirring until the ingredients dissolved. The media was then autoclave at 121 °C (15 lb pressure) for 15 minutes and cooled in a 50 °C water bath. The agar was then aseptically poured agar into 50x9mm petri dishes to 4-5mm depth (7 ml) and allowed to solidify. The plates can be stored for up to two weeks in the refrigerator.

Bacterial Test Water Preparation

Saturated cultures of each bacterial strain were prepared by inoculating 10 mL of TSB with the test organisms and incubated on a rollodrum overnight at 32 ^{o}C. The following day the cultures were counted using a Petroff Hausser counting chamber and appropriately diluted so that the final concentration of bacteria in the 1.1 L testing sample was 1 x 10^{7} – 10^{8} cells/L.

Pressurizing device

All tubing, bottles, caps, and glassware were washed and autoclaved prior to each trial. Initial conditioning of the Sawyer mini filter was attained by passing 1 L of 5% bleach solution followed by 2 L of test water (without organisms) through the filter at 20psi (Fig. 1). The last liter of test water was collected as negative controls at 100, 500 and 900 milliliters in sterile Whirl paks. Challenge test water (with organisms) were forced through the Sawyer Mini filter at 10 psi. Collection of filtrate was performed at 100, 500, and 900 milliliters in sterile Whirl paks.

Figure 1. Pressurizing device for forcing challenge water through the Sawyer filter.

Microbiological analysis

Standard Methods 9222 (APHA et al. 2012) were followed, the following description is abbreviated. The 100 ml sample was vigorously shook and poured into the vacuum funnel. A vacuum was applied to filter the sample through the 0.45µm filter paper. The funnel walls were rinsed three times with 20-30 ml sterile deionized distilled water. Using sterile forceps the filter was transferred to the prepared petri dish grid side up. The petri dish was incubated at 32 ± 0.5°C for 48 hours, count colonies at 24 and 48 hours.

Initial seed counts were confirmed by serial dilution, using 99ml sterile deionized distilled water blanks. The final dilution for plating was 10^{-6} and 10^{-7}.

Calculations:
Colony forming units (cfu)
Cfu/100ml = 100 x (number of colonies)/ volume of sample filtered in mL
Log removal value (LRV), target is 6 log unit reduction.

LRV= log (C_f) – log (C_p)
C_f =feed concentration (cfu/100ml)
C_p= filtrate concentration (cfu/100ml)

Results

All trials had comparable outcomes of zero or minimal cfu/100ml (Table 3). All trials attained 6 log unit reduction or higher. (Table 4)

Table 3. Challenge filtration test trials on the Sawyer Mini HFM. Filtrate collected at 100, 500, and 900 milliliters underwent microbiological membrane filtration, values are expressed as colony forming units per 100 milliliters (cfu/100ml).

Trial	Organism	Initial seed	100	500	900
1	*M. luteus*	1.17×10^7	0	0	0
	B. subtilis	2.38×10^7	0	1	0
	R. terrigena	6.87×10^8	0	0	0
	Negative control		0	1	0
2	*M. luteus*	1.18×10^7	0	0	0
	B. subtilis	2.58×10^7	0	0	0
	R. terrigena	2.41×10^8	3	0	0
	Negative control		0	0	0
3	*M. luteus*	1.38×10^7	0	0	0
	B. subtilis	2.74×10^7	0	0	0
	R. terrigena	4.28×10^8	0	0	0
	Negative control		0	0	0

Table 4. Log removal values (LRV) on the Sawyer Mini HFM test trials. 6 log unit reduction or greater was the target range.

Trial	Organism	100	500	900
1	*M. luteus*	7.068	7.068	7.068
	B. subtilis	7.373	7.373	7.373
	R. terrigena	8.836	8.836	8.836
2	*M. luteus*	7.07	7.07	7.07
	B. subtilis	7.41	7.41	7.41
	R. terrigena	7.905	8.382	8.382
3	*M. luteus*	7.14	7.14	7.14
	B. subtilis	7.438	7.438	7.438
	R. terrigena	8.63	8.63	8.63

Back flushing was performed to demonstrate the effectiveness of the filter performing as a barrier. Back flush recovery showed two log reduction after 1 liter of test water passed through the filter (Table 5). This back flush test demonstrated that the Sawyer Mini HFM truly is a barrier.

Table 5. Back flush recovery test trials on the Sawyer Mini HFM. Filtrate collected at 100, 500, and 900 milliliters underwent microbiological membrane filtration, values are expressed as colony forming units per 100 milliliters (cfu/100ml).

		Back flush		
Trial	Initial	100	500	900
1	2.225×10^8	TNTC	1.68×10^7	3.5×10^6
2	3.786×10^8	TNTC	2.85×10^7	3.6×10^6
3	2.858×10^8	TNTC	1.94×10^7	3.4×10^6

Discussion

All of the three Mini Filters tested showed a 6 fold or greater reduction of the test organisms, indicating the filters successfully remove the organisms from the challenge water. If the surrogate organisms, *M. luteus* and *B. subtilis*, were held to the USEPA standard for *Giardia* and *Cryptosporidium*, respectively, then only a 3 log reduction would be required. Thus, the filter would have met the USEPA standard for both bacteria and protozoans. These tests show that the Sawyer Mini filter meets the USEPA standard for bacterial removal.

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