Gravity Assisted Power: The Feltenberger Pendulum

White Paper

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Presented Exclusively by:
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Contents

Purpose

To introduce the warfighter and nation-builder to an innovative technology that is stunning in its simplicity, utility and productivity, that is both mobile and stealthy, that will reduce logistical burden and increase levels of forward support; and that will be extremely valuable in fostering host nation infrastructure and good-will.

Concept

Provide a device that is easily transportable, requires no fuel or electricity, makes little to no heat signature and that is virtually silent yet will produce:

- clean drinking water from any surface fresh water source
- hospital grade pure water from any surface fresh water source
- hydraulic power for small hydraulically powered attachments
- electrical power generation to recharge batteries and power other small electronic devices such as LED lights, computers or communications equipment

Background

DriPowder, LLC is the exclusive retailer of this product for all US Government Agencies and for most states in the southeast United States, representing Gravitational Energy Corporation and the Feltenberger Pendulum Pump.

Gravitational Energy Corporation has the rights to develop, manufacture and market a new technology called The Feltenberger Pendulum, US Patent No. 7,735,386 and US Patent pending. This device is the product of six years of research and development. Gravitational Energy Corporation has achieved a breakthrough design that can be applied to generate clean water, hydraulic power and electricity.

Description of Technology

The Feltenberger Pendulum is a unique double-reciprocating pendulum, which uses the force of gravity to help provide the input power to operate various types of machinery. The Company refers to this as Gravity Assisted Power (GAP) technology. This technology reduces the energy required to hand-pump water; and reduces fatigue during operation to $1/5^{th}$ that of other systems tested.

The first commercially available GAP machine, the Feltenberger Pendulum Pump, is a general-purpose piston pump called the GP210. It provides four different pressure/volume settings for a wide range of pumping capability. Combined with the Aquathin filtration and reverse osmosis systems, the Feltenberger Pendulum pump becomes a complete hand-operated water treatment facility capable of producing 1,000 gallons per hour of clean drinking water with no added chemicals.

The general-purpose pump is specifically designed to pump surface water by suctioning and can lift water approximately 25 feet from the water source to the pump. This pump is very durable, easy to maintain and can be set up and operated near a river, creek, pond, lake or any flooded area within minutes.

In addition to treating virtually any type of contaminated water source, the machine can also be set to bypass all filters when it is needed to pump out a cistern or flooded area or for irrigation or sanitation needs.

In the near term, a deep-water piston pump will be available that is capable of pumping from depths approaching 400 feet, as well as a desalinating piston pump to produce clean drinking water from salt water. By changing output components, the Feltenberger Pendulum becomes a multitask machine, which can be coupled to a linkage system to rotate a flywheel, winch for drilling wells or a generator for small scale electricity generation. Future technology will involve addition of a solar panel capable of generating perpetual water filtration and sustainable energy.

In areas where no electricity or fuels are available, Gravity Assisted Power can be the answer. Let gravity help you do the work!

Military Applications

Logistical Support – Operational Units

One of the greatest logistical challenges in the military is to keep front line troops supplied with clean drinking water. Soldiers that are vomiting due to lack of proper hydration are not combat effective. Soldiers that have inadequate supplies of water to drink will not perform proper personal sanitation – resulting in more combat ineffectiveness.

An army colonel at a conference at Fort Benning in May 2010 talked about the need to reduce the load on our soldiers – a typical platoon leader carrying well over a hundred pounds of gear in environments of over 120 degrees heat. He joked that a company that could "make water lighter" would be very successful. The Gravitational Energy Corporation hasn't made water lighter – but they have made a way to instantly purify water for drinking at the most remote and forward battlefield areas – reducing the amount a soldier must carry, and reducing the amount that must be trucked or airlifted to that forward location.

Houston News, 28 May 2009

Some US soldiers forced to steal water in Iraq

Rations and problems trigger desperate measures to survive intense heat

"We were rationed two bottles of water a day," said Army Staff Sgt. Dustin Robey, referring to 1 to 1.5 liter bottles. And he said that wasn't nearly enough. "You'll see guys throw up, you'll see them pass out," he said. Robey said it started early on in the war, and that he and other soldiers are paying the price to this day. In 2003, he said soldiers were given what was the equivalent of only a half gallon of water to survive on a day—all while dodging bullets in the blistering heat.

"We were on missions, I ran out of water," Robey said.

That's no surprise. According to an Army Fort Bragg training document on preventing heat casualties in desert climates, water losses can reach 15 liters, or four gallons, per day per soldier. Additionally, Survival, a 1957 Department of the Army field manual, states "in hot deserts, you need a minimum of one gallon (of water) per day" just to survive.

So Robey said his company was forced to improvise. "We were inside a house, I'd stick my head under the faucet and drink," he said. But Iraqi water is often untreated and can cause intestinal sickness.

"We had a real rash of dysentery go through my company. I'd say 50 to 60 guys got it," Robey said.

But what about getting water from what the military calls "water buffaloes," storage trucks that are supposed to bring purified water to the troops in the field?

A number of soldiers told 11 News that it was often difficult to locate these trucks, partly because they say there was a shortage of them. In addition, many soldiers claim that a lot of the water dispensed by these vehicles was so heavily treated with chemicals that "no one could keep it down.

Clean drinking water on demand, the ability to operate small hydraulic power tools, recharging portable batteries, electronics, and powering LED lights – all are very valuable capabilities to move forward on the battlefield.

Civil-Military Operations

A constant goal in military operations is to create favorable conditions for the host nation, generating good will and cooperation for deployed American military forces. A common theme among these host nations is a very weak to non-existent local economy or one that relies on forces hostile to American forces for basic support. Additionally limited access to electricity, gasoline/diesel fuels and inadequate sanitation creates a local populace that suffers from hunger, an inability to properly irrigate fields for crops, even basic personal cleanliness that avoids disease and infection.

Drinking wells are expensive to emplace, easily sabotaged and the quality of water is not consistent or guaranteed, and they are not able to produce an adequate volume of water for drinking, irrigation or sanitation. Hand operated well pumping systems are extremely difficult to operate in a sustained manner, resulting in extreme operator fatigue and discouragement.

Introduce a device such as the Feltenberger Pendulum and its variety of applications and you are able to create a readily available supply of clean water for drinking, irrigation and sanitation without the barriers of cost, infrastructure, construction, and hard site (i.e. target) of a traditional well or large power generator. Should an enemy destroy or capture one of the devices, another device can be in place and fully functional within minutes.

A Feltenberger Pendulum powered application can also create the basis for a micro-business in a host nation. The owner of this micro-business could charge pennies for a gallon of fresh drinking water, or for a battery recharge and pay for the device in a few months.

A Complete Water Treatment Facility

The GP 210 model contains an Aquashield water filtration system that can produce over 1,000 gallons per hour of clean drinking water. This meets or exceeds the World Health Organization standards for drinking water. ***Virtually any type of contaminated source water can be filtered to these standards.***

The GP 210 is also equipped with an Aquathin Reverse Osmosis (R/O) system, which during continuous operation can produce 400 to 500 gallons per day of hospital grade pure water. This is more pure than regular drinking water.

The machine can be set to produce only R/O water, only drinking water or both types of clean water simultaneously. If desired, the machine can also be set to bypass all filtration and simply pump source water for irrigation, sanitation, fire fighting or storage in a settling tank.

Application and Retrofitting Options

The GP210 system uses common industry standard mounting, fixtures, valves, fittings and the like. This makes the GP210 easy to adapt to other uses; to integrate into existing mobile transport equipment; to extend its use for military applications not currently understood; or to even integrate other water purification systems approved, available and/or preferred by the military.

Production Overview

Gravitational Energy Corporation produces its own products, tightly controlling the quality of any sub-contracted component manufacturer. Assembly, testing and shipping all occur at the company factory in Cuyahoga Falls, Ohio. Local subcontractors are already established for subcomponents providing a current manufacturing capacity of 100 machines per week, with larger scale production capacity easily replicated and negotiated to meet large volume contracts. All components of the device are proudly "Made in the USA".

Summary

Whether supporting the war fighter logistically or providing a better way of life for a host nation impacted by war, Gravity Assisted Power has applications for both military and civilian/host nation entities:

Military Applications:

- Stealthy operation: no heat signature or sound
- Requires no fuel or external power source
- Eliminates the need for logistical water resupply
- Filtration system lasts six months at peak operation

Civil:

- Hand-operating for ease of operation, children can operate the pump
- Instant micro-business opportunity. At pennies per gallon the system can completely pay for itself in a few months
  Inexpensive to operate


These children are demonstrating how easy it is to operate the Feltenberger Pendulum Pump – it can even be fun for them! To see a video of this in operation, click here.

Presented Exclusively by:

DriPowder, LLC is pleased to represent the Gravitational Energy Corporation and the Feltenberger Pump. We look forward to demonstrating the product and to answering any questions you might have. For more information, please call Karl Monger at 316-249-0218, email kmonger@dripowder.com or visit our emergency response webpage.

About Gravitational Energy Corporation

Gravitational Energy Corporation, Inc. was founded and led by the inventor of the Feltenberger Pump, Bruce Feltenberger, CEO. Located in Cuyahoga Falls, OH, Gravitational Energy brings to the world a remarkable technology and sustainable energy source, gravity assisted power. For more information, visit www.gravityassistedpower.com

URL for Houston News article: http://tinyurl.com/24kt568
URL for video of GAP in Haiti: http://tinyurl.com/25ke96z
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