Why Geothermal?
Geothermal is perfect for those who want to dramatically reduce their energy usage, save money on bills, and enjoy a more even, consistent comfort in their home. Over the next few pages we’ll tell you a little more about geothermal and show you how you can benefit from a technology that’s Smarter from the Ground Up™.

The 5 Series
Smarter from the Ground Up™
As the upgrade to our popular Envision product line, the 5 Series® carries some of our best features and efficiencies. The 5 Series upholds the standards we’ve set over three decades and the trust associated with the WaterFurnace name. Every unit is computer run-tested to ensure flawless performance at start-up—and if the unlikely event your equipment needs service, it’s backed by the best warranties in the industry. The 5 SERIES® features advanced components to offer a level of comfort and savings that’s far greater than any ordinary system and represents an amazing 25.3 EER and 4.4 COP.

The 5 SERIES® is designed to be installed outdoors and is perfect for homes with limited indoor utility space. By connecting to a separate WaterFurnace air handler, the 5 SERIES® can provide efficient and comfortable heating and cooling for your entire home. The 5 SERIES® is also great for use in extremely cold climates where homeowners want to keep an existing furnace for backup heating. The unit uses the clean, renewable, comfortable energy from the earth and switches to fossil fuels only during the coldest parts of the winter. Like all of our residential products, the 5 SERIES is ENERGY STAR rated and was developed in the HVAC industry’s only in-house EPA/ENERGY STAR Recognized Laboratory.
Comfort that gives back
Geothermal’s benefits

Geothermal heat pumps are not only the most comfortable way to heat and cool, they’re also the most cost effective. They’re versatile enough to excel in almost any home or any environment, and you’ll find geothermal in more than 1 million households across Canada and all 50 U.S. states. They can be scaled for single-family homes to entire college campuses. In fact, we heat and cool our entire 110,000 square-foot headquarters with WaterFurnace equipment. Here are a few reasons why geothermal is one of the fastest growing technologies available for your home.

Energy Efficient
WaterFurnace systems are rated number one in energy efficiency because they can deliver more than five units of energy for every one unit of electrical energy used. Compare that to even the best ordinary system that delivers less than one unit of energy for every unit it consumes. That translates into an efficiency rating exceeding 440%, compared to the most efficient gas furnace which rates only 98%.

Cost Effective
Because of the extraordinary efficiency of a WaterFurnace system, most homeowners save more on monthly bills than they pay for the system when installation costs are added to the mortgage. Any added investment over traditional equipment is usually recovered in just a few years, and many homeowners see a return on investment of 10-20% over the life of the system.

No Fossil Fuels
When installed with a WaterFurnace Air Handler, no fossil fuels are used in a 500RO11 installation. WaterFurnace systems don’t create heat—they simply move it to and from the earth. Since there are no fossil fuels, geothermal comfort is the cleanest method of heating and cooling available today.

Environmentally Friendly
Geothermal systems are recognized by the United States Environmental Protection Agency as the most environmentally friendly, cost effective and energy efficient heating and cooling technology available. These systems also minimize the threats of acid rain, air pollution, the greenhouse effect and global warming—problems directly linked to the burning of fossil fuels. In fact, installing a single geothermal unit is the environmental equivalent of planting 150 trees or removing two cars from the road.

Flexible
One compact WaterFurnace unit provides heating and cooling for your entire home. Both indoor and outdoor split units are available for a wide range of home applications, including newly constructed as well as existing homes.

Safe
Because no natural gas, propane, or oil is used in a geothermal installation, it’s the safest method of heating and cooling available for your home. And when the 500RO11 is installed with an existing fossil fuel furnace for backup, the majority of heating is done with geothermal so minimal fossil fuels are used.

Quiet
WaterFurnace systems have been designed to operate as quietly as possible. Insulated cabinets enable the outdoor system to quietly provide the level of comfort and efficiency needed for your home.

Reliable
Geothermal units last longer than nearly any other heating and cooling system. According to the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, geothermal units have an average equipment life of 25 years while the underground loop system has a rated material life of more than 100 years. Ordinary air conditioners, furnaces and heat pumps are rated for only 12-18 years.

Comfortable
WaterFurnace units are designed to run more often at low speeds to provide stable temperatures throughout the home and help eliminate hot or cold spots. They provide a comfort you need to experience to believe. To achieve precise control over temperatures in up to 4 areas, add our IntelliZone® zoning system.

Extra savings for geothermal
A 26% tax credit on equipment and installation costs is currently available to U.S. homeowners who install an ENERGY STAR rated geothermal system. The credit can be used to offset both AMT and regular income taxes and can be carried forward into future years. The 26% tax credit will last until the end of 2020 where it is scheduled to decrease to 22% in 2021. Hurry and act now for the most savings.

QUALIFIES
GEO TAX CREDIT

30% 26%
2019 2020
22% 2021

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A geothermal heat pump (GHP) taps into the renewable solar energy stored in the ground to provide savings up to 70% on bills. Using a series of underground pipes, it exchanges heat with the earth instead of outdoor air. While air temperatures can vary greatly from day to night or winter to summer, the temperature just a few feet below the earth’s surface stays an average 55°-70°F year-round.

### Fossil Fuel Furnace
Ordinary furnaces return less than 98¢ of heat for each dollar spent burning polluting fossil fuels, while a geothermal system returns up to five dollars of heat for each dollar spent on electricity. That’s because our units don’t create heat through combustion. They simply collect and move it.

### Traditional Air Conditioner
Summer air is already saturated with heat and is less willing to accept more. Thanks to the constant temperature of the earth, geothermal is more than twice as efficient at cooling than any ordinary heat pump or air conditioner.

### Winter heating
As outdoor temperatures fall, a GHP draws from an underground reservoir of heat, concentrates it, and moves it to your home. Meanwhile, an ordinary heat pump is forced to collect heat from frigid winter air, making it least efficient when you need it to be the most efficient. And unlike a furnace, our units don’t create heat through combustion. They simply collect and move it.

### Summer cooling
As outdoor temperatures rise, a GHP collects the unwanted heat in your home and moves it to the cooler 55°F earth. Meanwhile, ordinary heat pumps and air conditioners are forced to dump that heat outside. Unfortunately, hot summer air is already saturated with heat and is less willing to accept more. That makes ordinary cooling systems least efficient when you need them to be the most efficient.

Note: Illustration represents how geothermal works and is not to scale. Loops are generally 4-6 feet below the earth’s surface and between 150-400 feet long.

The average year-round ground temperature only three to four feet beneath the frost line.
The heart of a geothermal system
Geothermal earth loops

A geothermal system uses a series of underground pipes called a “loop.” The earth loop eliminates the need for fossil fuels. It’s the heart of a geothermal system and its biggest advantage over ordinary heating and cooling technologies. The type of loop used is based on available land space and installation costs for specific areas.

Horizontal Loop
Used where adequate land is available, horizontal loops involve one or more trenches that are dug using a backhoe or chain trencher. High-density polyethylene pipes are inserted, and the trenches are backfilled. A typical home requires 1/4 to 3/4 of an acre for the trenches.

Vertical Loop
Vertical loops are used when space is limited. Holes are bored using a drilling rig, and a pair of pipes with special u-bend fittings is inserted into the holes. A typical home requires three to five bores with about a 15-foot separation between the holes.

Pond Loop
If an adequately sized body of water is close to your home, a pond loop can be installed. A series of coiled, closed loops are sunk to the bottom of the body of water. A 1/2 acre, 8-foot-deep pond is usually sufficient for the average home.

Open Loop
An open loop is used where there is an abundant supply of quality well water. The well must have enough capacity to provide adequate flow for both domestic use and the WaterFurnace unit. 5 Series units require 3-10 GPM, depending on size.

HyperLoop - Pond
Perfect for pond-wide scale geothermal applications, this prefabricated and compact loop greatly reduces loop build and installation time.

Directional Bore
Perfect for homeowners who need minimal landscape disruption, these loop types take advantage of the space available below ground. A directional bore loop can be installed either vertically or horizontally depending on yard space.
Which configuration is right for your home comfort?

**Split configuration for maximum flexibility**

*The 5 Series technology*

WaterFurnace 5 Series Splits are engineered to work hand-in-hand with either a WaterFurnace air handler or an existing fossil fuel furnace to provide versatility and flexibility in any application. By installing the 500RO1 with the SAH Air Handler, you can heat and cool your entire home efficiently and effectively. In cooler climates, pairing the 500RO1 with an existing fossil fuel furnace and a cased or uncased coil in a dual fuel application can be a good option. The split can choose which method of heating is most efficient and can switch between the two sources—saving you money. That’s both smart and flexible.

Paired with an SAH Air Handler—all geothermal

The SAH Air Handler is a perfect match to the 500RO1. It features an ECM blower motor for the ultimate in efficiency and electric backup heat for those rare instances where you need an extra boost of heating. It’s field convertible and offers quiet and efficient comfort.

Paired with a fossil fuel furnace—dual fuel

By installing the 500RO1 with the WaterFurnace A-Coil (cased or uncased) and an existing fossil fuel furnace, the system can select the most efficient method of heating and switch between fossil fuel and geothermal. Perfect for colder climates, a dual fuel application will always keep you warm and cozy.
Designed for versatility and performance

Components of the 5 Series

Design Components:
1. Cabinet: The cabinet comes standard with a professional grade finish for long-lasting beauty and protection. The system is fully insulated for quiet operation with cleanable foil-backed insulation.

2. ThermaShield™: Our exclusive coaxial heat exchanger coating protects against condensation for temperatures below 50°F, extending its life.

3. Split Configuration: Pair the split with a remote air handler or an existing fossil fuel furnace for flexible and efficient installation options.

4. Compressor: Dual capacity compressors are featured in the 500RO product because of their superb efficiency and reliability. Compressors feature a noise reduction blanket for quiet operation.

5. Loop Pumps: The flow center is conveniently mounted within the cabinet, eliminating the need for any indoor loop piping. The loop pipes enter the unit through an opening in the bottom panel.

6. IntelliStart: This optional soft starter reduces start-up amperage by up to 60% of normal draw to reduce noise, eliminate light flicker, and increase compressor life.

7. Aurora Controls: The powerful Aurora Base Control (ABC) offers two-way communication between components, advanced operating logic and robust troubleshooting capabilities. The Aurora Expansion Board (AXB) adds support for true energy monitoring as well as compatibility with the Symphony Home Comfort Platform and our IntelliZone2 zoning system.

ISO/AHRI 13256-1

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Choosing the right accessories can greatly improve the comfort levels in your home and can even allow you to expand the functions of your existing WaterFurnace system. Each item has been designed to work hand in hand with your system to allow flawless and convenient operation. Here are some of our most popular accessories. Visit waterfurnace.com to learn more.

**Finishing touches**

**Accessories**

**IntelliZone² – 24v**

The IntelliZone² gives you the power to precisely control temperature in multiple areas of your home. It can control up to four different zones with the dual capacity 500RO11. The result is the ultimate in comfort and cost savings. You’ve already chosen the finest heating and cooling system available; now choose the most advanced zoning system available to control it.

**TPCC32U01 Deluxe Touch-Screen**

A beautifully communicating color touch-screen thermostat that provides intuitive comfort control. This programmable thermostat can also provide instantaneous and 13 month energy monitoring history.* The TPCC32U01 features 2 heat and 2 cool stages, dual fuel capabilities, Comfort Talk error communication, humidity control, outstanding energy savings and more.

**TP32W03 Touch-Screen**

This thermostat is made for use with single or dual stage units that feature an ECM blower motor. It features 3 heat stages and 2 cool stages and dual fuel capabilities. With a sleek touch-screen display, this programmable thermostat will look great in any home.

**TP32U03/04 Elite Programmable**

This powerful thermostat is great for any system—single or dual stage units with ECM or PSC blower motors. Dual fuel capability, text based output and Comfort Talk are some of the features that make this thermostat a versatile and dependable choice.

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**GeoTank®**

The WaterFurnace GeoTank is simply the best way to capture free preheated water from your unit’s hot water generator or a separate 500W11 single hydronic hot water generation unit.*

*-energy monitoring requires our AXB advanced controls.
The WaterFurnace name has been synonymous with geothermal since we were founded in 1983. Over the years we’ve worked to innovate new technologies, integrate key trends and grow our core business to represent clean and sustainable solutions. Our units combine sound engineering with the highest levels of quality control to provide you with some of the most efficient heating and cooling systems on the planet. WaterFurnace—Smarter from the Ground Up.

ISO Accreditations: