

COPY

VANPORT TOWNSHIP BEAVER
COUNTY, PENNSYLVANIA

ORDINANCE NO. 401

AN ORDINANCE REGULATING THE INSTALLATION AND USE OF
GEOTHERMAL HEATING SYSTEMS WITHIN VANPORT TOWNSHIP.

NOW, THEREFORE, be it ordained and enacted and it is hereby ordained and enacted as follows:

Section 1. Purpose. The purpose of this Ordinance is to regulate the use and construction of geothermal heating systems within Vanport Township while protecting the Township water resources. In furtherance of this overall purpose, this ordinance is specifically intended to serve the following sub-purposes:

- A. Protect and preserve the water resources and water supply that serve all Vanport Township residents;
- B. Conservation and beneficial management of geothermal resources and thermal ground waters in a comprehensive and coordinated manner so as to assure their continued availability and productivity;
- C. Continued support and assistance for individual private geothermal resources and thermal groundwater uses, including residential, institutional, commercial, and industrial activities;
- D. Maximization of the public welfare and economic benefit to be derived from geothermal resources and thermal ground waters;
- E. Minimization of the potential for damage or degradation to geothermal resources and thermal ground waters;
- F. Protection of the surface and subsurface environment during development and utilization of geothermal resources and thermal ground waters; and
- G. Allow for the installation and maintenance of geothermal heating systems that are safe, efficient, and utilize modern technology.

Section 2. Definitions. The following terms, as used in this ordinance, shall have the following meanings, unless the context clearly indicates a different meaning is intended:

ALTERING -- The deepening, recasing, perforating, re-perforating, the installation of packers or seals, and other material changes in the design of a geothermal heating system.

TOWNSHIP - The Township of Vanport.

CLOSED LOOP SYSTEMS -- A geothermal heat pump system which relies on the contained circulation of geothermal fluids through an underground loop of pipes. The loops act as a subsurface heat exchanger, which transports the heat to or from the ground. The loop of pipe is installed either vertically in borings or horizontally in trenches.

CLOSED LOOP HORIZONTAL - A Closed Loop System where the loops of the pipe are laid horizontally in the ground, in trenches.

CLOSED LOOP VERTICAL - A Closed Loop System where the loops of the pipe are installed vertically into the ground, in well borings.

CONSTRUCTING — The boring, digging, drilling, or excavating of a geothermal heating system, including the installation of casing or geothermal heating system screens.

GEOHERMAL FLUID — Any fluid transporting or capable of transporting geothermal heat.

GEOHERMAL HEAT — Heat derived from geothermal resources, or heat derived from groundwater.

GEOHERMAL HEATING SYSTEM - A geothermal heat pump system which relies on the contained circulation of geothermal fluids to obtain and to utilize geothermal resources.

GEOHERMAL RESOURCES - The natural heat of the earth, and the energy, in whatever form, below the surface of the earth present in, resulting from, or created by, or which may be extracted from, the natural heat, and all minerals in solution or other products obtained from naturally heated fluids, brines, associated gases, in whatever form, found below the surface of the earth, exclusive of oil, hydrocarbon gas, other hydrocarbon gas, other hydrocarbon substances of helium, but including specifically:

- (a) All products of geothermal processes, embracing indigenous steam, hot water and hot brines;
- (b) Steam and other gases, hot water, and hot brines resulting from water, gas, or other fluids artificially introduced into geothermal formations;

- (c) Heat or other associated energy found in geothermal formations; and
- (d) Any by-product derived from them.

GROUNDWATER — Any water, except capillary moisture, beneath the land surface or beneath the bed of any stream, lake, reservoir, or other body of surface water, whatever may be the geological formation or structure in which such water stands, flows, percolates, or otherwise moves.

OPEN LOOP SYSTEMS — A geothermal heat pump system which relies on the circulation of groundwater from a supply well, spring or surface water. The source for heat, groundwater is moved from the ground to a heat pump. The water then transferred to a discharge area, typically a surface water body, storm or sanitary sewer system or recharge well.

OWNER — The Person who is the holder of the record title to real property or the person entitled to use of the thermal groundwater at the property.

PERSON — A natural person, firm, partnership, association, social or fraternal organization, corporation, non-profit corporation, trust, estate, receiver, syndicate, branch of government, or similar entities, any group or combination acting as a unit, or the successors or assigns of any of the aforesaid.

POLLUTION — The contamination or other alteration of the physical, chemical, or biological properties of any surface or ground waters which will or can reasonably be expected to render such waters harmful, detrimental, or injurious to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial use.

RESERVOIR — An aquifer or combination of aquifers or zones containing a common geothermal or groundwater resource.

THERMAL GROUNDWATER - Groundwater which is less than 250 degrees Fahrenheit at bottom-hole temperature, and possessing sufficient heat to be used for a direct thermal application or in conjunction with a groundwater heat pump.

WELLHEAD PROTECTION ORDINANCE - The Township Ordinance establishing a Wellhead Protection Overlay District, as may be amended or in effect from time to time, providing for the regulation of land uses within such overlay district for the purpose of protecting groundwater supplies, providing for reporting requirements for certain regulated land uses within the Wellhead Protection Overlay District, and establishing the means for enforcement of the ordinance, which may be amended from time to time.

WELLHEAD PROTECTION OVERLAY DISTRICT - The area identified and defined by the Wellhead Protection Ordinance.

Section 3. Construction and Severability.

a. The provisions of this Ordinance shall be construed to the maximum extent possible to further the purposes and policies set forth herein, as consistent with applicable state statutes and regulations. If the provisions of this section and state law are in conflict, then state law shall prevail.

b. It is the intention of the Council that the provisions of this Ordinance are severable, and if any provisions of this Ordinance shall be declared unconstitutional or invalid by the judgment or decree of a court of competent jurisdiction, such unconstitutionality or invalidity shall not affect any of the remaining provisions of this Ordinance.

Section 4. Preordinance Geothermal Heating Systems. All Geothermal Heating Systems existing within the Township on the effective date of this Ordinance shall be known as preordinance Geothermal Heating Systems. As of the date of this Ordinance, there are no known or permitted Geothermal Heating Systems. If any such Geothermal Heating Systems exist, they shall be subject to, and brought into compliance with this Ordinance.

Section 5. Subsurface Water Management Policy. In furtherance of the purposes of this ordinance, it shall be the policy of the Township that all Geothermal Heating Systems existing on the effective date of this ordinance, and those constructed or altered thereafter, be used in such a manner as to:

a. Conserve and protect the Geothermal Fluids and groundwater within and adjacent to the Township in order to: enhance reservoir productivity and benefit, prevent wasteful extraction and disposal of Geothermal Fluids and Thermal Groundwater, prevent Geothermal Fluid and Thermal Groundwater temperature degradation, prevent thermal pollution of surface environments and water, and prevent harmful intermixing of Geothermal Fluids and other groundwater;

b. Allow appropriate utilization of Geothermal Fluids and Thermal Groundwater for residential, commercial, industrial, and other lawful purposes; and

c. Protect the public health, safety, and welfare from improperly constructed, operated, maintained, or abandoned Geothermal Heating Systems.

Section 6. Registration of Geothermal Heating Systems. Owners of preordinance Geothermal Heating Systems within the Township shall register their Geothermal Heating Systems with the Township. Said registration shall be on forms supplied by the Township and may include, but are not limited to: the name and address of the owner, specific location of the

Geothermal Heating System, date of construction, depth and diameter of the Geothermal Heating System, specifications of casing, bottom hole temperature, static fluid or water level, type of geothermal utilization system, accessibility for monitoring devices, and disposal method, if any.

Section 7. Post ordinance Geothermal Heating Systems.

- a. Geothermal Heating System shall be regulated on properties located within the Wellhead Protection Overlay District as follows:
 - i. Open Loop Systems shall be prohibited.
 - ii. Vertical Closed Looped Systems shall be prohibited.
 - iii. Only Horizontal Closed Loop Systems shall be permitted within Zones 2 and 3 of the Wellhead Protection Overlay District.
- b. All properties located outside of any zone covered by the Wellhead Protection Overlay District shall be permitted to construct a Geothermal Heating System subject to the provisions of this ordinance.
 - i. Open Loop Systems shall be prohibited.
 - ii. Both Horizontal and Vertical Closed Loop Systems shall be permitted.
- c. All Geothermal Heating Systems constructed or altered within the Township subsequent to the effective date of this Ordinance shall be known as post ordinance Geothermal Heating Systems and shall be subject to the requirements of this Ordinance.
- d. Only food-grade or USP-grade propylene glycol may be used as a Geothermal Fluid. No other materials or additives may be used except for potable water. A permanent sign must be attached to the heat pump specifying that only approved heat transfer fluids must be used.

Section 8. Application for Geothermal Heating System Permit. Any persons desiring to construct, install, or alter a Geothermal Heating System within the Township shall first apply for a Geothermal Heating System permit at the Township Office on forms provided for that purpose. No Person shall commence construction or alteration of a Geothermal Heating System prior to the owner of a proposed Geothermal Heating System receiving a permit.

Section 9. Application Fee. All applications for a Geothermal Heating System permit shall be accompanied by an application fee, which shall be nonrefundable, and such fee will be according to a fee schedule established by Township resolution.

Section 10. Application Review. The Township, or any persons designated by the Township, shall review each application for conformity with the applicable Township ordinances and law.

Section 11. Permit Decision Criteria. Permit decisions shall contain written findings for approval or denial which may include, but are not limited to, the following criteria:

- a. The estimated hydrological impact of the proposed Geothermal Heating System's operations upon the water system and surrounding Geothermal Heating Systems;

b. The adequacy of provisions for environmental protection, public safety, and furtherance of the purposes above; and

c. The compliance of the proposed Geothermal Heating System and its use with this ordinance, the Township's Comprehensive Plan, the Wellhead Protection Overlay District Ordinance and all other applicable laws, ordinances, and regulations.

d. The basis for the design of the proposed Geothermal Heating System and its necessity for the system to operate properly and efficiently.

Section 12. Geothermal Wells for Closed Loop, Vertical Systems — Procedures.

The procedure for opening a permit to drill a well and then closing this permit within the Township shall be as follows:

a. Before any drilling or site preparation begins, the well driller shall apply for a Well Permit from the Township Zoning Officer. At this time, the Zoning Officer shall provide a copy of the requirements of this Ordinance.

b. During the well drilling and construction process, the Township Zoning Officer may enter the premises to determine if the well is being installed according to the requirements of the Township.

c. Within four (4) weeks of the completion of the well, the well owner or driller shall submit a copy of the Pennsylvania Department of Conservation and Natural Resources (PADCNR) Water Well Completion Report to the Township Zoning Officer. In addition to this report, the well owner or driller shall submit the following at this time:

i. The address and mapped location of the well.

ii. Depth of the well from land surface.

iii. Casing length, type, material, and volume.

iv. Total well depth.

d. Upon receipt of the data required above, the Zoning Officer shall check this information for compliance with the requirements of this section. Within two (2) weeks receiving this information, the Zoning Officer shall issue the well permit provided that all requirements of this Ordinance have been met.

e. No geothermal well shall be put into service without receiving a well permit and meeting the requirements of this Ordinance.

Section 13. Well Construction Requirements.

A well installed for the purposes of heating and cooling a facility must adhere to the International Ground Source Heat Pump Association's (IGSHP) Design & Installation Standards and the well driller must be certified by the IGSHP.

The following requirements are based on the American Water Works Association (AWWA) Standard AI 00-06. AWWA Standard AI 00-06 or its successors provide the basis for these requirements and shall be followed in the Township.

- a. Construction by Licensed Driller
 - 1. All geothermal wells in the Township shall be constructed in accordance with PA Act 610 (Water Well Drillers License Act).
 - 2. The well owner or driller shall submit a copy of the PADCNR Well Completion Report to the Township within four (4) weeks of the completion of the well.
 - 3. The depth of any well shall not exceed 200 ft.
- b. Casing: not required unless a determined otherwise by the Township.
- c. Grout Requirements: A statement that the well has been grouted in accordance with this Section shall be submitted to the Township along with the Water Well Completion Report.
 - i. Bentonite grout may be utilized if the manufacturer's specifications for use in water well construction are followed.
 - ii. Such grout shall be applied from the bottom of the well continuously to the top of the well, until the surface of the ground or such location where the piping for the system is placed in a trench and directed into the dwelling on the property.

Section 14. Well Siting Requirements.

- a. Wells must not be sited in floodplains unless this is not feasible within the parameters of the parcel.
- b. Wells must maintain the required minimum isolation distances from the potential pollution sources listed in the table below unless doing so is not feasible and the Owner can provide a basis acceptable to the Township for a lesser distance, which distance shall still further the purposes of this Ordinance.

POTENTIAL POLLUTION SOURCE	MINIMUM ISOLATION DISTANCE
Animal enclosures or barnyards	100 ft.
Stormwater drains	25 ft.
Building foundations	25 ft.
Buried petroleum tanks	50 ft.
Cemetery or grave site	50 ft.
Chemical storage without containment	300 ft.
Chemical storage with containment	100 ft.
Roads	25 ft.
Landfill	1000 ft.
Farm silos	10 ft.
Gravity sewer lateral	25 ft.
Gravity sewer mains/interceptors	50 ft.
Lakes, ponds, or surface water	25 ft.
Manure or garbage piles	100 ft.
Fertilizer storage	300 ft.
Property lines	10 ft.
Salt piles	300 ft.
Salvage yards	300 ft.
Septic tanks - active	0 ft.
Septic tanks – inactive	25 ft.
Septic drain fields, seepage pits, privies, or cesspools - active	50 ft.

Septic drain fields, seepage pits, privies, or cesspools - inactive	25 ft.
Sewer mains or interceptors (unless encased in concrete)	200 ft.
Spray effluent irrigation sites	300 ft.
Stormwater retention/detention ponds	25 ft.
Swimming pools	25 ft.

Section 15. Additional Requirements. Since the technology surrounding Geothermal Heating Systems continues to evolve and change, the Township reserves the right to impose additional requirements on an Owner seeking to install or maintain a system, if the Township or its representatives determine that such requirements are necessary to further the purposes of this ordinance. Additionally, the Township may impose further requirements to supplement this ordinance, or amend existing requirements, by resolution duly adopted at a meeting of the Council.

Section 16. Inspection. The following inspections shall be required the Township:

- a. Site inspection before any work is done, showing the location of proposed work.
- b. Inspection of the installed loop (pressure test).
- c. Inspection of grouting.
- d. Inspection of the completely installed system before operations commence and upon commencement of operations.
- e. Periodic inspections no less than once every three years.

- f. Inspection if geothermal system or well is abandoned.
- g. Any other inspections required by applicable law, including the Uniform Construction Code.

Section 17. Well Abandonment.

- a. All abandoned wells must be filled and sealed by a PADCNR licensed water well driller according to the PADEP/DCNR Water Well Abandonment Guidelines. A copy of the PADEP/DCNR Water Well Abandonment form shall be submitted to the Township within thirty (30) days of abandonment.
- b. Abandonment procedures shall be subject to Township inspection.

Section 18. Surface Discharges. No Geothermal Heating System constructed or altered after the effective date of this Ordinance shall be operated or altered in such a manner as to cause Geothermal Fluids or Thermal Groundwater to be discharged onto the surface of the ground or into any public ditch or drainage facility.

Section 19. Township Monitoring of Geothermal Facilities. In connection with the principal functions and activities of the Township resource management responsibility, Township officials may, upon reasonable notice to the owner, enter upon any property within the Township for purposes of inspecting geothermal facilities, or monitoring the operational characteristics of such facilities, when such inspection or monitoring is reasonably necessary to the assessment of other indices related to geothermal or groundwater reservoir management, or protection of the public safety and welfare. The Township shall provide affected property owners or occupants with reasonable prior notice, describing the nature, purpose, and duration of the necessary inspection or monitoring; such inspections or monitoring shall be conducted in accordance with applicable Township and state procedures for inspections. If any person refuses to permit any officer or employee to enter and inspect, the Township officer or employee shall not attempt to force entrance, but shall with the assistance of the Township's attorney, seek a search warrant or other appropriate court order.

Section 20. Defective Geothermal Heating Systems. Whenever the Township determines that any Geothermal Heating System within the Township is by the nature of its construction, installation, or operation is adversely interfering with other Geothermal Heating Systems, or is polluting groundwater or surface water, the Township shall promptly notify the affected owner of the wasteful or defective Geothermal Heating System and require said owner cease operation thereof immediately. Such notice may be verbal and/or written. If the system is causing any adverse effects, then repairs shall be commenced immediately and completed as

promptly as possible. If the system is not causing any adverse effects, the owner shall be allowed no more than fifteen days to repair the system. In either instance, if the Owner fails to act promptly, the Township may take such action as may be necessary, in its discretion, and the Owner shall be liable for all Costs related thereto. A Geothermal Heating System continuing wasteful or defective operation after the expiration of the time provided by notice shall be prosecuted as a violation of this ordinance.

Section 21. Enforcement.

a. Upon the receipt of a written complaint setting forth the existence of unauthorized construction, modification, or use in violation of this Ordinance, or other notice thereof, the Township Secretary, Superintendent of Public Works, Zoning Officer, Code Enforcement Officer, Solicitor or other representative that may be authorized by Township Council shall cause written notice to be given either by personal service or registered or certified mail to the Owner of the Property upon which the violation exists, to immediately cease the construction, modification or the unauthorized use of the system. Such a notice shall be required to enforce the remedies set forth in this section. However, the Township shall still be entitled to give a verbal notice for defective systems as authorized above.

b. The Owner shall not be entitled to written notice for any subsequent or similar violations of this Ordinance that occur within 180 days of the service of the first notice. The first notice shall be deemed ongoing for any violations within that time period, and the Township may proceed immediately with enforcement.

c. Upon failure of such Owner to comply as directed in said notice, the proper Township officials or the Township Solicitor may appear on behalf of the Township and initiate legal proceedings to enforce the provisions of this Ordinance before a District Magistrate.

d. Any Owner who or which shall violate or permit to be violated the provisions of this Chapter shall, upon being found liable therefore in a civil enforcement proceeding brought by the Township before a District Magistrate, pay a fine of not less than three hundred (\$300.00) nor more than six hundred (\$600.00) dollars, plus all court costs, including reasonable attorney's fee's incurred by a Vanport Township as a result thereof. No fine shall commence or be imposed, levied, or be payable until the date of the determination of the violation by a District Magistrate. Each day that a violation exists and is continued shall constitute a separate offense, unless the District Magistrate who determines that a violation has occurred further shall determine that there was a good faith basis for the defendant to have believed that there was no such violation, in which event there shall be deemed to have been only one such violation until the fifth day following the date of determination by such District Magistrate and thereafter every day shall constitute a separate offense.

e. The Township shall also be entitled to recover from any Owner all Township costs or fees (the "Costs") arising out of or related to the application or enforcement of this ordinance. Such Costs may also include those to remedy violations of this Ordinance, protect the water supply, and abate nuisances. The Costs shall include, but not be limited to, engineer fees, geologist fees, attorney fees, zoning officer fees, and staff/employee time. The Costs may be collected as a Municipal Claim under applicable law against the property.

Section 22. Effective Date. This Ordinance shall become **effective five (5)** days after its enactment.

ENACTED AND ORDAINED this 13 of February, ~~2022~~ ²⁰²³

ATTEST:

VANPORT TOWNSHIP COUNCIL

Paula Feduzzi
Secretary

By: [Signature]
President

Approved this 13 day of February, ~~2022~~ ²⁰²³

~~_____
Mayor~~