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| OFFICE OF APPRENTICESHIPBULLETIN | **NO.**2025-146 |
| **DATE**July 30, 2025 |

**TO:** NATIONAL APPRENTICESHIP SYSTEM STAKEHOLDERS

 OFFICE OF APPRENTICESHIP STAFF

 STATE APPRENTICESHIP AGENCIES

**FROM:** MEGAN BAIRD /s/

 Acting Administrator, Office of Apprenticeship

**SUBJECT:** New National Occupational Framework (NOF) Apprenticeable Occupation: Ground Heat Exchanger Installer

1. **Purpose.** To inform the staff of OA, State Apprenticeship Agencies (SAA), Registered Apprenticeship program sponsors, and other Registered Apprenticeship partners of the following new National Occupational Framework (NOF) to an apprenticeable occupation: Ground Heat Exchanger Installer.
2. **Action Requested.** OA staff should familiarize themselves with this bulletin and the attached Work Process Schedule and Related Instruction Outline, as a source for developing apprenticeship standards and/or providing technical assistance.

Ground Heat Exchanger Installer will be added to the List of Occupations Recognized as Apprenticeable by OA located on www.apprenticeship.gov. A suggested Work Process Schedule and Related Instruction Outline are attached.

1. **Summary and Background.**
	1. Summary – The occupation Ground Heat Exchanger Installer was submitted by Mr. Zachary Boren, Senior Policy Program Manager on behalf of Urban Institute, was processed by Dr. Ricky C. Godbolt, Program Analyst, and approved by the OA Acting Administrator on July 28, 2025.

The National Office has approved a new National Occupational Framework (NOF), developed in partnership with the Urban Institute. This NOF has met industry standards and approval; it covers job titles and occupational pathways, related functions, and performance criteria, as well as academic, workplace and personal competencies for job success. While use of NOFs in developing standards utilizing the competency-based training approach is voluntary, no additional vetting of a Work Process Schedule (WPS) utilizing the NOF should be required where a program aligns to the occupational framework described in a NOF, beyond the basic requirements set forth in 29 CFR Part 29. While on-the-job learning (OJL) is ordinarily outlined in the WPS, sponsors who utilize a NOF must develop the Related Instruction Outline, which should be included in the standards. Within certain limits, the sponsors of NOF apprenticeship programs are permitted to customize the job functions or competencies contained in a NOF for the Ground Heat Exchanger Installer occupation.

However, OA encourages the use of all core competencies to be included in the approved WPS.

* 1. Background –

***New/Revised Occupation Background -*** Under 29 CFR section 29.4, an occupation for a RAP must meet the following criteria to be determined apprenticeable:

1. Involve skills that are customarily learned in a practical way through a structured, systematic program of on-the job supervised learning;
2. Be clearly identified and commonly recognized throughout an industry;
3. Involve the progressive attainment of manual, mechanical, or technical skills and knowledge which, in accordance with the industry standard for the occupation, would require the completion of at least 2,000 hours of on-the-job learning to attain; and
4. Require related instruction to supplement the on-the job learning.
5. **New NOF Apprenticeable Occupation.** The occupation Ground Heat Exchanger Installer was submitted for an apprenticeability determination.

Ground Heat Exchanger Installer
O\*NET-SOC CODE: 49-9099.01

RAPIDS Code: 4017

Type of Training: Time-based, Hybrid, Competency-based

Term Length: Time-based 4000, Hybrid 4,000 – 8,000, Competency-based 2 years

Ground Heat Exchanger Installer performs the following duties:

* Practices proper safety, documentation, and communication practices.
* Adopts various drilling methods to create boreholes for horizontal or vertical loops.
* Utilizes other tools as necessary to install loop wells.
* Oversees the mixing and placement of grout.
* Demonstrates customer service and professional skills.

Ground Heat Exchanger Installers support the ground heat exchanger designers’ intention and specifications by providing a quality installation of a ground heat exchange (GHX) system. The scope of this occupation includes multiple phases of installation, such as drilling bore holes, installing heat exchangers, testing piping systems by pressurization before and after pipe burial, and grouting. Ground heat exchanger installers utilize a wide range of tools, including drilling, grouting, small hand tools, pipe fusion tools, pipe pressurization testing tools, and flushing equipment used for flushing debris. They also purge air and charge the GHX system with the specified heat transfer fluid. Additionally, they must exhibit strong customer service skills by working with clients to determine optimal installation plans and explain licensing and permit requirements.

The job titles of Ground Heat Exchanger Installers include ground source heat pump technician, vertical loop driller, horizontal loop driller, ground heat exchanger grouter, ground heat exchanger looper, ground heat exchanger fusion technician, ground heat exchanger field quality control technician, horizontal ground heat exchangers, surface water heat exchangers, and hybrid ground heat exchangers.

Apprenticeship Prerequisites:

Apprentices may be required to have a high school diploma or equivalent.

1. **Inquiries.** If you have any questions, please contact Dr. Ricky C. Godbolt, Program Analyst, Division of Standards and Quality at (202) 693-3815 or Godbolt.Ricky.C@dol.gov .
2. **Attachments.**

