

**NUCLEAR REGULATORY COMMISSION**

**[Docket No. 30-30429; NRC-2025-0099]**

**ProTechnics, A Division of Core Laboratories LP;**

**Alternate Disposal Method for Well Logging Sand-Outs or Well Logging Returns**

**Containing Residual Amounts of NRC-Licensed Materials;**

**Environmental Assessment and Finding of No Significant Impact**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Notice; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is issuing a finding of no significant impact (FONSI) and accompanying environmental assessment (EA) for an alternate waste disposal method request from ProTechnics, a division of Core Laboratories LP (ProTechnics), for the disposal of well logging sand-outs or well logging returns containing residual amounts of NRC-licensed materials into Class I disposal wells in North Slope, Alaska. Based on the analysis in the EA, the NRC staff has concluded that there would be no significant impacts to the environment from ProTechnics' proposed exemption request and therefore, a FONSI is appropriate.

**DATES:** The EA and FONSI referenced in this document are available on June 24, 2025.

**ADDRESSES:** Please refer to Docket ID **NRC-2025-0099** when contacting the NRC about the availability of information regarding this document. You may obtain publicly available information related to this document using any of the following methods:

- **Federal Rulemaking Website:** Go to <https://www.regulations.gov> and search for Docket ID **NRC-2025-0099**. Address questions about Docket IDs in Regulations.gov to Bridget Curran; telephone: 301-415-1003; email:

Bridget.Curran@nrc.gov. For technical questions, contact the individual(s) listed in the “For Further Information Contact” section of this document.

- **NRC’s Agencywide Documents Access and Management System**

**(ADAMS):** You may obtain publicly available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, select “Begin Web-based ADAMS Search.” For problems with ADAMS, please contact the NRC’s Public Document Room (PDR) reference staff at 1-800-397-4209, at 301-415-4737, or by email to [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov). For the convenience of the reader, instructions about obtaining materials referenced in this document are provided in the “Availability of Documents” section.

- **NRC’s PDR:** The PDR, where you may examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov) or call 1-800-397-4209 or 301-415-4737, between 8 a.m. and 4 p.m. eastern time, Monday through Friday, except Federal holidays.

- **FOR FURTHER INFORMATION CONTACT:** Roberto J. Torres, Region IV, U.S. Nuclear Regulatory Commission, Arlington, Texas 76011-4511; telephone: 817-200-1189; email: [RobertoJ.Torres@nrc.gov](mailto:RobertoJ.Torres@nrc.gov), and Christine Pineda, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-6789; email: [Christine.Pineda@nrc.gov](mailto:Christine.Pineda@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Introduction**

The NRC is considering a license amendment for an alternate disposal method, pursuant to part 20.2002 of title 10 of the *Code of Federal Regulations*, “Method for obtaining approval of proposed disposal procedures,” for residual radioactive material

possessed under NRC Byproduct Materials License No. 42-26928-01. ProTechnics seeks NRC approval to allow the injection of well logging sand-outs or well logging returns containing residual radioactive tracer material (non-hazardous oil and gas industrial waste) into specific Class I disposal wells located in the North Slope of Alaska. These Class I disposal wells have been approved under permits to accept non-hazardous industrial waste by the U.S. Environmental Protection Agency (EPA). Approval of this license amendment request would be based upon the NRC's review and evaluation of the licensee's proposal, current alternatives, and the NRC's radioactive waste disposal regulations in 10 CFR part 20, "Standards for Protection Against Radiation". The NRC staff has evaluated the potential environmental impacts of the licensee's proposal and developed an Environmental Assessment (EA) in accordance with the requirements of 10 CFR part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions". As required by 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments," the NRC staff prepared an EA that documents its independent evaluation of the potential environmental impacts of the alternate disposal method in light of ProTechnics' license amendment request. Based on the analysis in the EA, the NRC staff has concluded that there would be no significant impacts to the environment from ProTechnics' proposed alternate disposal method into Class I wells in North Slope, Alaska, and therefore, a FONSI is appropriate.

## **II. Summary of Environmental Assessment**

### *Description of the Proposed Action*

The proposed action is to issue an amendment to Byproduct Materials License No. 42-26928-01 for approval of an alternate waste disposal method for well logging sand-outs or well logging returns containing residual radioactive tracer beads produced

as a result of fracturing sand well logging operations. The licensee seeks approval to allow fracturing sand-outs or well returns that are below the levels considered to be "Radioactive Waste" in 40 CFR 144.3 and that are not considered hazardous waste to be disposed of by injecting into Class I industrial waste disposal wells in North Slope, Alaska. These Class I wells have been approved under permits issued by the EPA to accept this type of waste since EPA has jurisdiction for these wells in Alaska. The radioactive tracer materials would be in the patented Zero-Wash bead form. This method of disposal would be used as an alternative to existing methods of disposal authorized by the NRC in the current license issued to ProTechnics.

If approved, ProTechnics' 10 CFR 20.2002 alternate waste disposal method authorization for use of Class I disposal wells in North Slope, Alaska, would contain the following provisions: (1) the radioactive concentration of waste must be less than 1,000 picocuries/gram; (2) the half-life of the radioactive material being disposed of must be less than or equal to 120 days and include only the following tracers: scandium-46, bromine-82, zirconium-95, antimony-124, iodine-131, iridium-192, or gold-198 in the form of the patented "Zero-Wash" product in sand-outs and well returns; (3) the Class I disposal well accepting the non-hazardous oil and gas industrial waste that will be generated in part by ProTechnics from well logging operations must be permitted by the State, Territory, or Federal jurisdiction for which it is located; and (4) ProTechnics must maintain a written agreement with the Class I disposal well owner or operator to control access to the well until the radioactivity has decayed to unrestricted release levels.

*Need for the Proposed Action*

The purpose of the proposed action is to allow ProTechnics an additional disposal alternative because some locations where tracer operations are conducted do not allow the use of shallow pits and there are no Class II wells nearby for disposal of

well sand-outs or well returns. This proposed action is needed to allow the continued use of tracer beads in oil production in those areas. The use of radioactive tracer beads increases the efficiency of oil and gas production and reduces the cost of recovery to the well operators. The NRC is fulfilling its responsibility under the Atomic Energy Act and the National Environmental Policy Act to review the proposed action and approve it only if it would ensure adequate protection of the public health and safety and the environment.

#### *Environmental Impacts of the Proposed Action*

The NRC staff has assessed the potential environmental impacts from ProTechnics' request for approval of an alternate disposal method. The proposed action would authorize the disposal of specified NRC-licensed material in EPA approved operating Class I disposal wells in North Slope, Alaska, in which materials are injected below the water table. Class I wells allow injection far below the lowermost underground source of drinking water (USDW), with injection zones that typically range from 1,700 feet to more than 10,000 feet in depth. The injection zone is below and separated from USDWs by an impermeable "cap" rock called the confining layer. The confining layer may be associated with additional layers of permeable and impermeable rock and sediment to separate the injection zone from USDWs. Owners and operators of Class I wells in Alaska must meet specific requirements to hold an EPA permit. These requirements address the siting, construction, operation, monitoring and testing, reporting and recordkeeping, and closure of Class I wells.

Before allowing Class I wells to operate, the EPA assesses the potential socioeconomic and environmental impacts as part of their review and permitting processes. Because the proposed action would involve the use of existing EPA approved structures, the NRC staff concludes that the proposed action would not result

in significant impacts on historic and cultural resources, ecological resources, land use, or visual resources. In addition, due to the design of the patented Zero-Wash product (no wash off of radioactive material) and the crush strength of the Zero-Wash product (i.e., greater than 10,000 psi), the NRC staff concludes that the well logging sand-outs and well logging returns would not contaminate USDW and, as required for the permitting of Class I wells, would not migrate from the formation where injected.

Because the proposed action would only allow the use of pre-existing Class I disposal wells, there would be no increased air emissions, noise, or impacts on local or regional business conditions, populations, or demographics. In general, Class I disposal wells are not located in residential or business areas. Construction, permitting, operating, and monitoring requirements are more stringent for Class I waste disposal wells than for other Classes of injection wells. Approximately 800 operational Class I wells exist in the U.S. (about 17 percent of Class I wells are hazardous waste disposal wells, while 53 percent of Class I wells provide for injection of non-hazardous industrial waste). The proposed action could result in the use of non-hazardous industrial waste Class I wells in North Slope, Alaska, that are specifically permitted in 13 well permits issued by the EPA's Region 10 to accept non-hazardous industrial waste, depending on availability. These 13 Class I well permit numbers are: AK1I001-B, AK1I002-C, AK1I003-C, AK1I005-C, AK1I008-B, AK1I009-B, AK1I010-B, AK1I011-C, AK1I015-B, AK1I017-A, AK1I019-A, AK1I024-A, and AK1I025-A. These permits can be found on the EPA website at <https://www.epa.gov/uic/uic-permits-issued-epa-region-10>. The EPA has determined for all these 13 permits that the injection zones for the Class I wells identified on these permits are in areas that are not considered underground sources of drinking water (USDW).

Increased radiation exposure to the general public from transporting waste containing residual radioactive tracer beads to the disposal site would be negligible. There are two routes of exposure possible, external and internal. The internal exposure route would be from ingestion of the tracer material since the particle size is such that it's not respirable. The material is not soluble in the body, thereby reducing the residence time. At the concentrations expected, an individual would need to ingest 200 pounds of the material to receive 1/10 of the regulatory annual limit of intake specified in 10 CFR part 20, appendix B. The maximum radiation exposure level at a distance of one foot from a vehicle transporting this waste would be on the order of 0.1 millirem per hour. The radiation level in the cab of the transport vehicle would be on the order of 0.004 millirem per hour. Using an average transport time of one hour and assuming the same driver would transport all the expected disposals (10 per year), the exposure to the driver of the vehicle would be 0.04 millirem. Due to the waste's low radiation level and radioactive concentration, an accident causing the release of the sand-outs or well returns from the transport vehicle would result in minimal exposure to workers or members of the public during the subsequent cleanup efforts (i.e., less than 0.04 millirem).

Tracer injection operations at the disposal wells are automated to minimize the time required for personnel to be in the immediate area of the injected material. Assuming an injection time of four hours per disposal and an individual within one foot of the radioactive material during the injection operation, the NRC staff expects that the total exposure per year would not exceed four millirem from this operation. The disposal site would be surveyed to verify that the site meets the NRC criteria for unrestricted use in accordance with 10 CFR part 20 after each time the waste (well logging returns or sand-out material) is injected into a Class I disposal well. Because ProTechnics uses short-lived radionuclides in well logging operations, the residual radioactive material

concentrations that would be shipped for disposal in Class I wells would be below the 1,000 picocuries/gram limit proposed as a condition in the NRC license. There would be no increase in the amounts or types of wastes or in the number of transport vehicles on the highways due to this proposed disposal option. The current practice of transporting well logging sand-outs or well returns to a decay-in-storage facility, shallow disposal pit, or Class II disposal well requires that at least one transport vehicle be used, and this practice would continue. Procedures would continue to be in place to handle any emergency situation arising from any incident involving the handling or transportation of this material.

Where Class I disposal wells in North Slope, Alaska, are available, the proposed action would result in reducing the use of other methods of disposal that have a greater potential for worker and public exposure. These methods include disposal in shallow earthen pits and decay-in-storage facilities that require additional handling as described in the EA.

Based on the discussion above, the NRC staff expects that the environmental impacts resulting from the disposal of this material into Class I disposal in North Slope, Alaska, would not be significant. The NRC staff assumes that the EPA permitting process for the operation of Class I waste disposal wells sufficiently addressed the potential radiological and non-radiological environmental impacts of operating these wells.

#### *Environmental Impacts of the Alternatives to the Proposed Action*

An alternative to the proposed action is the no-action alternative. Under the no-action alternative, the NRC would not grant ProTechnics' approval of an alternate disposal method in Class I wells in North Slope, Alaska. The no-action alternative would result in fewer options for disposing of well logging sand-outs or well logging returns

containing radioactive tracer beads. This alternative would likely result in no change to the frequency of use of currently in-use, approved disposal methods such as shallow earthen pits and decay-in-storage facilities. When compared to disposal in Class I industrial waste wells, these methods involve a slightly higher risk of exposing workers and members of the public to radioactive material. ProTechnics' use of shallow earthen pits and decay-in-storage facilities requires additional handling of the radioactive material, which slightly increases the potential for exposure. For disposal in shallow earthen pits, ProTechnics transports the sand-out material to the new pits, covers the disposal pits with at least two feet of soil, and marks the disposal sites in order to control access to the public. Storage in leased decay-in-storage facilities occurs before unrestricted disposal or burial in shallow earthen pits.

#### *Agencies and Persons Consulted*

The NRC staff has prepared this environmental assessment with input from the Alaska Oil & Gas Conservation Commission and the EPA's Division of Underground Injection Control (UIC). The EPA UIC confirmed that the permitting review for each Class I well includes an appropriate environmental review.

Because the proposed action would allow disposing of well logging sand-outs or well returns containing residual amounts of NRC licensed radioactive material in existing Class I wells deep underground, the NRC has concluded that there is no potential to affect threatened or endangered species. Therefore, consultation under Section 7 of the Endangered Species Act is not necessary. Likewise, the NRC staff has determined that the proposed undertaking is not a type of activity that has the potential to affect historic

properties, and therefore the NRC has no further obligations under Section 106 of the National Historic Preservation Act.

### **III. Finding of No Significant Impact**

The NRC staff has concluded that, given the depth, location and mechanical barriers of EPA-approved Class I wells in North Slope, Alaska, and ProTechnics' identified administrative items, there would be no impacts to land use, transportation, geology and soils, surface water and ground water, ecology, air quality, noise, historic and cultural resources, socioeconomics, visual and scenic resources, and waste management. Additionally, the NRC staff evaluated the potential radiological impacts and found those to be minimal and not significant.

The NRC staff has prepared this EA to evaluate the potential environmental impacts of the proposed action to approve ProTechnics' alternate disposal method procedures for the disposal of well logging sand-outs or well logging returns containing residual radioactive tracer material (non-hazardous oil and gas industrial waste) into specific Class I disposal wells located in the North Slope of Alaska. Based on this EA, NRC has concluded that there are no significant environmental impacts and the license amendment request does not warrant the preparation of an Environmental Impact Statement. Accordingly, the NRC has determined that a FONSI is appropriate. In accordance with 10 CFR 51.32(a)(4), this FONSI incorporates the EA set forth in this notice by reference.

### **IV. Availability of Documents**

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated.

<b>Document Description</b>	<b>ADAMS Accession No. or Federal Register Notice</b>
"Radiological Criteria for License Termination," 10 CFR Part 20, Subpart E, published July 21, 1997, November 2, 2001, and August 28, 2007	62 FR 39058 66 FR 55789 72 FR 49485
"Waste Disposal," 10 CFR Part 20, Subpart K (56 FR 23403, published May 21, 1991, November 2, 2001, and October 1, 2007	56 FR 23403 66 FR 55789 72 FR 55922
NUREG-1757, Volume 1, Revision 2, "Consolidated Decommissioning Guidance, Decommissioning Process for Materials Licensees, Final Report," published September 2006	ML063000243
NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs, Final Report," published August 2003	ML032450279
"Environmental Assessment and Finding of No Significant Impact Related to Materials License No. 42-26928-01, Core Laboratories, Inc. (dba ProTechnics) of Houston, TX, License Amendment Request for Approval of an Alternate Disposal Method" (Class II wells), published October 28, 2003.	68 FR 61472
License Amendment Request for ProTechnics' Division of Core Laboratories LP to allow disposal of well logging returns containing residual tracer material into Class I disposal wells, dated February 19, 2025	ML25051A343
License Amendment Request for ProTechnics' Division of Core Laboratories LP to allow disposal of well logging returns containing residual tracer material into Class I disposal wells, dated December 13, 2023	ML23352A126

Dated: June 18, 2025.

For the Nuclear Regulatory Commission.

**/RA/**

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