



Who initiated this request?	ConocoPhillips, Alaska Inc. (CPAI) applied to the U.S. Environmental Protection Agency, Region 10 on February 3, 2026. CPAI has sought a change to the existing permit.
What is the proposed action?	In this action, the EPA proposes to modify the permit in response to a request from CPAI to increase the maximum allowable inner annulus pressure for one of the wells covered under this permit (CD1-47A) from 1,500 pounds per square inch (psi) to 2,000 psi.
Why has this modification been proposed?	CPAI wishes to increase the maximum allowable inner annulus pressure for the Class I non-hazardous injection well CD1-47A. CPAI has documented that injection operations in permafrost conditions have led to notable thermal effects, which cause expansion and contraction of fluid within the well's inner annulus. These temperature-driven changes result in pressure swings that approach the current permit limit, leading to operational disruptions. To address this, CPAI has requested a permit modification to raise the inner annulus pressure ceiling from 1,500 psi to 2,000 psi. To ensure the ability to detect mechanical integrity concerns, the EPA is requiring a 100 psi pressure differential between tubing and inner annular pressures.
How is the EPA protecting human health and the environment?	The EPA has determined that the proposed permit modification aligns with applicable regulations, best practice, and engineering standards. There is no expected increase in the risk to human health or the environment.
How can I comment and/or request a hearing?	The EPA will accept public comments during the public comment period, which begins on July 22, 2026, at 5:00 PM Alaska Time and ends on August 26, 2026, at 5:00 PM Alaska Time. The EPA will host a web-based public hearing if we receive a significant degree of public interest. Information on how to call into this meeting will be provided by email to those who request a hearing.
Where can I find more information?	Additional information on how to provide comment or request a hearing are provided on the EPA Region 10 UIC webpage . You may also directly contact the permitting lead, Evan Osborne, for more information (osborne.evan@epa.gov , 206-553-1747).

A. Proposed Action

The U.S. Environmental Protection Agency (EPA) proposes to modify UIC Class I Permit AK-1I003-C to revise operating conditions for the CD1-47A disposal well at the Alpine Field on Alaska's North Slope. ConocoPhillips Alaska, Inc. (CPAI) has requested an increase in the maximum allowable inner annulus (IA) pressure, raising the limit from 1,500 pounds per square inch (psi) to 2,000 psi. This is proposed as the fourth modification of AK-1I003-C, so the EPA is proposing the naming convention "AK-1I003-C4."

This modification would bring CD1-47A into alignment with other similar Class I disposal wells at the facility—specifically CD1-01A and CD1-33A—which have operated with a 2,000-psi IA limit under comparable injection conditions. The EPA is considering this modification because CPAI has demonstrated that the increased limit is necessary to accommodate temperature-related pressure fluctuations during batch waste injections, and that the change would not diminish the well's mechanical-integrity protections.

B. Regulatory Framework

The UIC program is authorized by Part C of the Safe Drinking Water Act ([SDWA](#)) for the principal purpose of protecting underground sources of drinking water (USDWs) from endangerment by injection wells. A USDW is an aquifer which currently serves as a source of potable water or which, by its potential productivity and natural water quality, could serve as a public water supply. It is defined in the CFR at [40 CFR §144.3](#).

Primary responsibility for implementing the UIC program in Alaska is shared between the EPA and the Alaska Oil and Gas Conservation Commission. The EPA regulates Class I injection wells, which are used to dispose fluids beneath the lowermost USDW. Class I non-hazardous wells may only inject materials defined as non-hazardous by the Resource Conservation and Recovery Act (RCRA) and materials exempted from RCRA classification due to their origination from oil and gas exploration and production.

Applicable regulations concerning injection well requirements can be found in 40 C.F.R. Sections 144 and 146. Criteria and standards applicable to Class I wells are found at 40 C.F.R. Section 146 Subpart B. For more information on injection well classes, see: www.epa.gov/uic/underground-injection-control-well-classes.

The EPA previously determined—first in 1998 and reaffirmed in 2007—that no USDWs exist beneath the permafrost within the Colville River Unit (CRU) because all aquifers have total dissolved solids (TDS) concentrations exceeding 10,000 mg/L. This "No USDW" determination applies to all wells authorized under Permit AK-1I003-C.

The CD1-47A disposal well is a Class I non-hazardous industrial injection well, designed and constructed for isolating injected fluids in deep, confined geologic formations. Since injection wells inject neither into, through, or above USDWs at this location, the Director has chosen to waive certain permit requirements.

C. Facility Overview

The CRU is a remote field accessible primarily by seasonal ice roads, supplemented by air or barge transport during the rest of the year. Waste transport offsite is limited so injection wells play an important role in on-site waste management.

The CD1-47A disposal well, located on the CD1 pad, will be used to inject non-hazardous waste fluids generated at the facility. The well's design includes multiple cemented casings, corrosion-resistant components, and continuous monitoring systems. According to CPAI's planning documents, CD1-47A is expected to operate as a waste-injection well for approximately 20 years.

Geologically, the disposal intervals include the Sag River and Ivishak Formations. These intervals are overlain by shale sequences—including the Kingak and Shublik Formations—that act as confining layers. The EPA's previous reviews confirm that faults in the area do not extend upward through these confining formations near the CD1-47A location.

D. Proposed Modification

1. Increase in Inner Annulus Pressure Limit

CPAI requests an increase in the allowable IA pressure for CD1-47A from 1,500 psi to 2,000 psi. This change is necessary because batch waste streams—typically 500 to 3,000 barrels of drilling muds, cuttings, and associated fluids—can produce rapid swings in annulus pressure due to temperature-driven effects. Batch fluid injection temperatures are significantly higher than the prevailing temperatures of the wellbore and surrounding rock formations under the effects of permafrost. The resulting thermal gradient causes the fluids contained within the inner annulus to heat, resulting in expansion and subsequent increase in pressure. While CPAI can reduce and increase the pressure of the inner annulus by removing (i.e., “bleeding”) and adding fluid, this work is both time consuming and presents risk of surface spills of freeze protect materials.

Continuous monitoring devices and alarm systems are installed to ensure rapid detection of abnormal pressure behavior. The proposed modification would require the IA alarm setting for CD1-47A to be set at 1,900 psi to maintain a safety margin below the maximum allowable limit. CPAI would be required to operate the well to ensure the inner annulus pressure does not exceed the 2,000 psi limit.

The EPA evaluated whether the increase to the maximum allowable inner annulus pressure would present additional risks to USDWs, and finds that the proposed change will not present such risks. Class I non-hazardous permits are required to inject into formations separated from the surface by low-permeability confining intervals that prevent the upward movement of fluids. These permits, along with regulatory requirements under 40 CFR Sections 144-146, stipulate that injection wells are required to maintain mechanical integrity and continuously monitor the pressure of the tubing and inner annulus. Similar wells at the CRU, including CD1-01A and CD1-33A, have safely operated with a 2,000-psi IA limit, demonstrating that the higher value is consistent with sound mechanical-integrity practices. Additionally, CPAI has determined through an engineering analysis of well components that the materials used to construct this well are rated to withstand the requested pressure increase.

2. Pressure-Differential Requirement

To ensure mechanical integrity, the EPA proposes adding a permit condition requiring the operator to maintain a minimum 100-psi pressure differential between the tubing and the inner annulus for all wells authorized under Permit AK-1I003-C. This requirement reflects information submitted by CPAI regarding their expected operational wellhead injection and inner annulus pressures. CPAI estimated the expected wellhead pressures to range from 1,000 to 3,500 psi, depending on the well's operating status- injecting or shut-in - and the duration it has remained in that condition. The expected range of wellhead tubing pressure during injection is expected to be 1,900 – 3,500 psi. This range overlaps with the proposed increase in inner annulus pressure.

The proposed maximum allowable inner annulus pressure (up to 2,000 psi) overlaps with the range of expected wellhead tubing pressure while on injection (1,900-3,500 psi). Maintaining a consistent pressure differential between the inner annulus and tubing is a proven method for identifying potential tubing-annulus communication and other mechanical integrity concerns. Increasing the maximum allowable annulus pressure introduces the possibility that the pressure differential between inner annulus and tubing is insufficient to reliably detect fluid communication between the tubing and inner annulus. One established method for addressing this concern is to operate an injection well with a mandatory minimum pressure differential. For example, a 100 psi differential is required by permits proposed and issued by the North Dakota Department of Health^a and U.S. EPA Region 5^b.

The EPA proposes a mandatory minimum pressure differential of at least 100 psi between the inner annulus and tubing pressures, as measured at the wellhead. This condition aligns with previously-established practice, and is designed to ensure that CPAI can reliably detect any communication between tubing and annulus and begin efforts to stop injection and investigate the source of possible integrity failure. Requiring a pressure differential is a common regulatory requirement for Class I injection well permits and provides an effective, low/no cost preventative method of ensuring an operator and/or the regulatory agency is able to quickly detect possible loss of mechanical integrity.

The EPA acknowledges that there may be instances in which the pressure differential between the inner annulus and tubing falls below 100 psi unrelated to possible mechanical integrity failure. This is especially true when considering the reasoning behind CPAI's request to modify this permit; batch injection of warm fluids create large pressure swings within the inner annulus. To avoid unintended disturbances to operations the EPA proposes that the 100 psi pressure-differential requirement would not apply in the following limited circumstances:

- *Instantaneous pressure swings lasting less than 30 minutes.* Rapid operational changes or momentary instrument fluctuations may cause temporary pressure deviations not indicative of mechanical integrity issues.
- *Periods of construction, maintenance, workover, or abandonment when the well is not injecting.* During activities other than typical injection operations, maintaining a differential may be physically impossible or impractical. Examples of such events include slickline work, e-line work,

^a <https://deg.nd.gov/PublicComment/UIC-DGC-20230213.pdf>, <https://deg.nd.gov/PublicComment/UIC-RainbowEnergy-20221205.pdf>

^b <https://19january2021snapshot.epa.gov/sites/static/files/2020-10/documents/draft-permit-mi-139-1i-0001-2020.pdf>

well sidetracking, tubing replacement, mechanical integrity testing, and abandonment operations.

- *Any other instances when approved in writing by the Director or an EPA authorized representative.* The EPA acknowledges that there may be certain situations in which it is impractical or impossible for the permittee to maintain a pressure differential and that these situations may not present any risk or impair the ability to detect mechanical integrity concerns. This condition allows for the EPA Director or an authorized representative to determine that a pressure differential is not needed. This exception is intended to cover time-limited situations where failure to maintain a pressure differential may be reasonably attributed to other factors besides mechanical integrity status. During steady-state operating periods, —such as shut-in conditions or stabilized injection—EPA requires the operator to consistently maintain the 100 psi differential.

To support this requirement, CPAI must use instrumentation alarms that notify operators if the pressure differential drops below 100 psi.

3. Correcting naming conventions

The EPA is proposing the modification of language related to well naming conventions. This permit now identifies CD1-47A as a well authorized by this permit, following prior approval of well construction change request (see, the EPA’s letter, Approval of Construction Change, CD1-47A, from November 3, 2025).

E. Endangered Species

The proposed modification does not introduce new activities beyond adjusting pressure limits and adding a monitoring safeguard. It does not change injection intervals, waste types, or overall operational scope. Based on the geologic confinement, the long-standing “No USDW” determination, and absence of new environmental pathways, the EPA has not identified any potential for this change to affect any endangered species or critical habitat, consistent with the EPA’s previous findings for this facility.

F. Public Comment

The EPA will accept comments on this proposed permit modification during the public comment period, as described in the public notice document. If the EPA receives significant public interest, the Agency will host a web-based public hearing. Instructions for participating in the hearing and submitting comments will be provided in the EPA’s official public notice.