NOTICE OF INTENT TO GRANT A PERMIT AUTHORIZING THE USE OF WATER FOR INDUSTRIAL-TYPE PURPOSES (GEOTHERMAL HEATING AND COOLING) IN LINN COUNTY, IOWA

Notice is hereby given that pursuant to Iowa Code Chapter 455B, there is now on file with the Iowa Department of Natural Resources, Water Supply Engineering Section, 6200 Park Avenue, Suite “200” Des Moines, Iowa 50321 an application as described below.

The Cedar Rapids Community School - Harrison Elementary, Iowa DNR Log Number 34,185, requests one new industrial-type water use permit for geothermal heating and cooling for the Harrison Elementary School, authorizing withdrawals of water from two new Silurian Dolomite withdrawal wells and two Silurian Dolomite water re-injection wells, each about 560 feet deep, on land generally described as the SE ¼ of the NW ¼ of Section 20, T83N, R07W, Linn County, Iowa, in the maximum quantity of 158.0 million gallons per year at a maximum rate of (up to) 300 gallons per minute throughout each year for geothermal purposes (heating/cooling/reinjection) within and without the Permittee's school district property.

The analysis indicates that the requested amount of water is available, and can be used in a beneficial way.

The Department has determined that this use of water conforms to the relevant criteria (Iowa Code Chapter 455B and Iowa Administrative Code Chapter 567) and recommends the permit be granted. A copy of the summary report is available upon a request to the Department at the address listed above. Comments on the report and on this use of water must be received by January 26, 2026, and should be addressed "ATTN.: Water Supply Engineering Section" and should specify the applicant's log number.

(By Michael K. Anderson, P.E.)

IOWA DEPARTMENT OF NATURAL RESOURCES
WATER USE PERMIT SUMMARY REPORT

Applicant: Cedar Rapids Community School – Harrison Elementary

Application Log No.: 34,185

Cedar Rapids Community School - Harrison Elementary, Iowa DNR Log Number 34,185, requests one new industrial-type water use permit for geothermal heating and cooling for the Harrison Elementary School, authorizing withdrawals of water from two new Silurian Dolomite withdrawal wells and two Silurian Dolomite water re-injection wells, each about 560 feet deep, on land generally described as the SE ¼ of the NW ¼ of Section 20, T83N, R07W, Linn County, Iowa, in the maximum quantity of 158.0 million gallons per year at a maximum rate of (up to) 300 gallons per minute throughout each year for geothermal purposes (heating/cooling/reinjection) within and without the Permittee's school district property.

1. The analysis indicates that the requested amount of water is available, and can be used in a beneficial way.

2. The proposed source of water and the land in question are located near the City of Cedar Rapids in Linn County, on the eastern side of the Cedar River about 2 miles SE of the City, which flows in a southerly to easterly direction south of applicant's land. The drainage area of the Cedar River catchment just downstream of the land in question is 6,486 square miles. Cedar Rapids, which lies in the south-central part of Linn County, has a population (2000 U.S. Census) of 120,758 and (2010 U.S. Census) of 126,326 and (2024 estimate) of 137,904. Thus, the water usage is in the acceptable range of water use for a facility of this size, with considerable commercial and industrial property, extensive development pressure in the adjacent area, and consequent demand for water usage.

3. The water source consists of Cedar River alluvial deposits overlaying Devonian limestone, which in this area is closely associated in general with the Cedar River alluvium. The alluvium in this area a well-established and extensively studied 60 to 70-foot unconsolidated glacial sediment aquifer located in near-exact proximity to the existing Cedar River channel system. The Devonian strata, in many areas essentially the same as or interconnected with alluvium in this area, can be characterized by moderate to large yields of water, and has been developed extensively for municipal and industrial purposes. The Iowa Geological Survey has reported that very large yields have been achieved in fractured limestone aquifer wells located in the Cedar River Valley, especially in the vicinity of the Cities of Cedar Rapids and Marion. Surface water in rivers and streams and water reaching the land surface in the form of precipitation moves quickly through the overlying deposits, to recharge the fractured rock strata. The Cedar River, in Linn County, is a major source of aquifer recharge. When the water elevation in the aquifer is lowered by pumping, it will be the beneficiary of recharge from the Cedar River itself, and therefore will not be subject to a significant impact, depletion, or experience an extended cone of depression as a result of proposed water withdrawals made at this magnitude and rate.

4. The project is being conducted as part of the City's School District's HVAC upgrade systematic plan. Water that is extracted as part of this project is intended to be recycled, with some minimal amount being discharged into the City of Cedar Rapids' storm sewer system. The discharge is covered under a NPDES General Permit.

5. Reference to the United States Geological Survey topographic map of the area reveals few non-municipal dwellings in the vicinity of the withdrawal site/s. Based upon the relatively great coverage of the municipal system, it is unlikely that any private domestic or agricultural wells associated with these dwellings will be adversely affected by the proposed withdrawal. In any event, the interests of individuals using water for domestic purposes, as well as those persons benefiting from the permits mentioned above, are protected, in the event of substantial injury, pursuant to Section 455B.271, Code of Iowa.

6. According to departmental records, the nearest privately owned well is located at least two-three miles south-southwest of the Applicant's facility. It is assumed that there are no privately-owned domestic wells in the immediate vicinity of the Applicant's facility because of the proximity to the municipalities. Based on reported yields in the limestone aquifer, it is unlikely that any properly constructed nearby wells withdrawing water from the same or other aquifer will experience any significant impacts from the withdrawals by the Applicant. In any event, the interests of individuals using water for domestic purposes, as well as those persons benefiting from the permits mentioned above, are amply protected, in the event of substantial injury, pursuant to Section 455B.271, Code of Iowa.

7. The nearest neighboring water users requiring the diversion of water in sufficiently large proportions to require a water use permit are the City of Cedar Rapids water plant located in excess of 2 miles north and west of Applicant's withdrawal site. Whereas there is a relatively significant distance between the Applicant's withdrawal site and these two users and whereas these neighboring users utilize different sources, there should be no negative impacts upon the neighboring user resulting from the Harrison Elementary School's withdrawal of groundwater at the site in question.

8. Because use of water for air conditioning purposes in a flow through type system is considered consumptive, the department requires the Permittee to submit a water conservation plan. The plan must outline procedures for obtaining water conservation in cases of well interference and during periods of water shortage due to drought conditions.

9. The applicant can devote a reasonable amount of water to a beneficial use (geothermal heating and cooling with water re-injection). The use is sufficiently on the beneficial side of things that it is supported by Federal and State tax and other financial incentives. Importantly, any articulable indirect risks are mitigated by other applicable laws. And public welfare is supported by this permit issuance by securing a necessary resource for a lawful business that generates revenue, taxes, and creates employment opportunities and educational opportunities.

10. In summary, in the opinion of this reviewer, there is no evidence that the use of water pursuant to a permit granted in accordance with the conclusions contained herein will constitute a waste of the water resources of the State, will impair the effect of pollution control laws of this State or the navigability of and navigable watercourse, or will be detrimental to the public interest or to the interests of property owners who might be affected.

THEREFORE:

The requested use of water conforms to the relevant criteria in Division III, Part 4, Chapter 455B, Code of Iowa and Chapter 50 of Part 567, Iowa Administrative Code. No adverse effect upon other water users is foreseen at this time. Following publication of notice and subject to revisions in response to comments that may be submitted, the attached draft permit should be issued for a period of ten years.

Water Supply Engineering
Date: 12/22/2025

IOWA DEPARTMENT OF NATURAL RESOURCES

WATER USE PERMIT

Permit issued to:
Cedar Rapids Community Schools
Laurel A. Day, Board Secretary
346 Second Ave SE
Cedar Rapids IA 52404

Permit Number: xxxxx

Effective: xxxxx

Expires: xxxxx

The Permittee is authorized to:

withdraw water from two proposed Silurian Dolomite Formation wells at the site of Harrison Elenentary School, each about 560 feet deep, located in the SE ¼ of the NW ¼ of Section 20, T83N, R7W, Linn County, Iowa in the maximum quantity of 158 million gallons per year at a maximum rate of 300 gallons per minute throughout each year for use as non-contact geothermal cooling water (and potentially heating water) in the HVAC system at Harrison Elementary School, on said land. The process is more properly called a GeoExchange System.

inject water which has only been thermally altered into two proposed 560 foot deep Silurian Dolomite heat pump return flow well (e.g., re-injection well) for non-contact geothermal water at the same site. The addition of chemicals or altering the physical, chemical, biological, or microbiological characteristics to this or any water which will be returned by injection or other methods into the aquifer is strictly forbidden. This includes any additives designed to control heat exchanger scaling and corrosion, or for treatment of any other undesirable qualities exhibited by the groundwater. This GeoExchange System will constitute an “open-loop” “once-through” system with return flow to the aquifer, in the quantity described above.

This authorization to withdraw water has been granted pursuant to the provisions of Part 4 of Division III of Chapter 455B, Code of Iowa, and Chapter 50 of Part 567, Iowa Administrative Code, and is further subject to the general permit conditions within this permit.

Conditions of this permit may be appealed as provided in rule 567--50.9, Iowa Administrative Code. Appeal must be in writing and must be received at the Iowa Department of Natural Resources, ESD/Water Supply Engineering Section, 6200 Park Avenue, Suite “200”, Des Moines, Iowa 50321 within thirty days of the date of the certification of the mailing of the permit.

FOR THE DIRECTOR:

By: _____ Date Executed: _____

cc: Field Office No. 1 - Manchester
Permit File

CERTIFICATE OF MAILING

On the date shown below, a copy of the foregoing permit was mailed to the Permittee and to each person entitled to receive a copy as provided by rule 567--50.8(2), Iowa Administrative Code.

Certified by (initials): _____ Date: _____

GENERAL PERMIT CONDITIONS

1. Permittee shall maintain accurate and up-to-date records of water use from said sources and submit them annually to the department. Additional records on pumping rates from said sources, water levels in said wells, and other data related to the regulation of this use of water shall be maintained and submitted as directed by the department.

2. Once each spring at a time before the cooling season begins the Permittee shall be responsible for accurately measuring the distance to water (static water level) from the access port in one of the permitted wells. The distance to water shall be submitted to the department annually as part of the records of water use.

3. Permittee shall be responsible for securing such other permits or approvals as may be required by this department, federal, or local governmental agencies for the operation of said cooling system or the discharge of water or other materials due to this operation.

4. Permittee is responsible for compliance with all applicable provisions of state law and the rules and regulations of this department and of federal and local health and water pollution control agencies in the operation of its cooling system and in the disposal of its wastes.

5. Permittee shall construct, maintain, and monitor observation wells, as directed by the department to define the effects of permittee's water withdrawals on groundwater resources or on other water users who might be affected by the withdrawals authorized herein.

6. Water withdrawn pursuant to this permit shall be discharged to the City of Cedar Rapids storm water drainage system in accordance all applicable rules and regulations, shall be of suitable quality, and shall be so discharged as to preclude flooding, erosion, or other adverse effects.

7. Existing wells shall not be replaced without notifying the Iowa Department of Natural Resources. Changes to the location, depth, source aquifer, or other physical features of said wells may require that this permit be modified to accommodate the changes.

8. With respect to each proposed well authorized as a source of water in this permit, withdrawals of water may be made only after the Permittee has made the following information available to the Iowa Geological Survey: well location, well log, casing and grouting schedule, results of yield tests, and cutting samples.

9. Each proposed well authorized as a source of water in this permit must be equipped with an access port having a minimum diameter of three-fourths inch. The access port must be equipped with a threaded cap or plug. The access port must be located to allow insertion of a steel tape or electric probe into the well casing for measurement of water levels.

10. Within 90 days of system start-up, permittee shall submit to the department a plan for implementing routine day-to-day water conservation measures and for implementing emergency water conservation measures during periods of water shortage. Until such a plan has been submitted to and approved by the department, permittee shall implement those emergency water conservation measures determined to be necessary by the department pursuant to Iowa Code Sections 455B.265 and 455B.266.

CAVEAT

Permittee is advised that pursuant to Section 455B.271, Code of Iowa, the authority to withdraw water provided by this permit may be modified, canceled or suspended in case of any breach of the terms or conditions herein, in case of any violation of state law pertaining to the permit, or if found necessary to prevent substantial injury to private or public interests.