

NOTICE OF INTENT TO MODIFY A PERMIT AUTHORIZING THE USE OF WATER FOR LIVESTOCK PRODUCTION IN CEDAR 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 Ave. Suite 200, Des Moines, IA 50321, an application as described below.

Aquamarinebrook, LLC, Iowa DNR Log Number 34,189, requests a new water use permit to withdraw water from one Devonian aquifer well, located on land generally described as the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ T97N, R13W, S34 Chickasaw County, Iowa, in the maximum quantity of 12.8 million gallons per year, at a maximum rate of 120 gallons per minute during the period April 1 to September 30 of each year for operation of a confined animal feeding operation on said land.

The Department has determined that this use of water conforms to the relevant criteria (Iowa Code Chapter 455B and Iowa Administrative Code 567) and recommends the permit be granted. A copy of the summary report for the application is available upon request to the Department at the address listed above. Comments on the report and on this use of water must be received by March 27, 2026, and should be addressed "ATTN: Erik Day" and should specify the applicants log number (Log Number 34,189).

**IOWA DEPARTMENT OF NATURAL RESOURCES
WATER USE PERMIT SUMMARY REPORT**

Applicant: Aquamarinebrook, LLC
1020 Pembroke Ave
Lawler, IA 52154

Application Log No.: 34,189

Permit Request

Aquamarinebrook, LLC, requests a new water use permit to withdraw water from one Devonian aquifer well at a maximum pumping rate of 120 gallons per minute (GPM), and a maximum annual water allocation of 12.8 million gallons per year (MGY); all from one distinct source: the Devonian Aquifer (one well).

The public land survey system (PLSS) location of the well and use site is generally described as:

- The NW ¼ of the SE ¼ T97N, R13W, S34

The intake and use site are located in Chickasaw County, Iowa. The site address is 1271 Jasper Ave, New Hampton, Iowa.

The total annual allocation from the Devonian aquifer is 12.8 MGY at a maximum rate of 120 GPM. Water in this permit is to be used for continuous operation of a confined animal feeding operation for swine on said land.

Beneficial Use

Water use for the permit is for swine production. Iowa Code 455B.266 identifies water for livestock production as a priority beneficial use.

Source Details

Only the Devonian aquifer will be detailed in this summary report, because this is the only source of water for the permit.

The applicant's well and use site are located on the lowan Surface which is characterized as gently rolling with long slopes and low relief. The last glacial event was during the Pre-Illinoian State, between 0.2 to 2.5 million years ago. Since then, the surface has been formed by multiple episodes of weathering, soil development, erosion, and loess deposition. The layer of unconsolidated sediments is approximately 80-170 feet thick based on drillers logs in the region. In this region, first bedrock is Devonian age carbonate of the Cedar Valley formation, which is approximately 100-200 feet thick, overlying upper Ordovician bedrock of the Maquoketa Formation, which acts as a confining unit in the region. The applicant's well has a total depth of approximately 256 feet, which is deeper than all documented Devonian wells within a one-mile radius.

The Devonian aquifer in this region consists of carbonate bedrock and yields moderate quantities of water. Nearby wells are used for household, livestock, and municipal supply purposes and can yield up to hundreds of GPM. The City of Alta's Devonian aquifer well, located approximately 3 miles northwest, withdraws water at a rate of approximately 250 GPM for municipal purposes.

The applicant's well has a total depth of 256 feet BGS and an estimated surface elevation of 1212 feet above sea level (asl) with casing terminating at 163 feet BGS. The well log shows that it produced water at depths of 167 to 172 feet BGS, with a static water level of 83 feet BGS (1129 feet asl). The pumping water level was 150 feet BGS (1062 feet asl) at 50 GPM, and 256 feet BGS (dry well) at 250 GPM. The applicant's maximum proposed use rate is 120 GPM.

There are no nearby pumping tests to help characterize the aquifer properties.

Historic Water Use

This is the first application for water withdrawal at this site, so there is no historical water use data.

Nearby Wells and Potential Interference

Publicly available databases show that besides the applicant's well (IWIS # 2209331) there are nine other private wells within a one-mile radius of the applicant's well; eight household wells and one livestock well (Figure 1). Six of those wells also utilize the Devonian aquifer and have well depths ranging from 170 to 235 feet below ground surface (bgs), all shallower than the applicant's well which is 256 feet deep. The other livestock well was plugged in 2019, when the new well was drilled, according to the applicant. The IWIS database still shows it as active because a plugging record was not submitted.

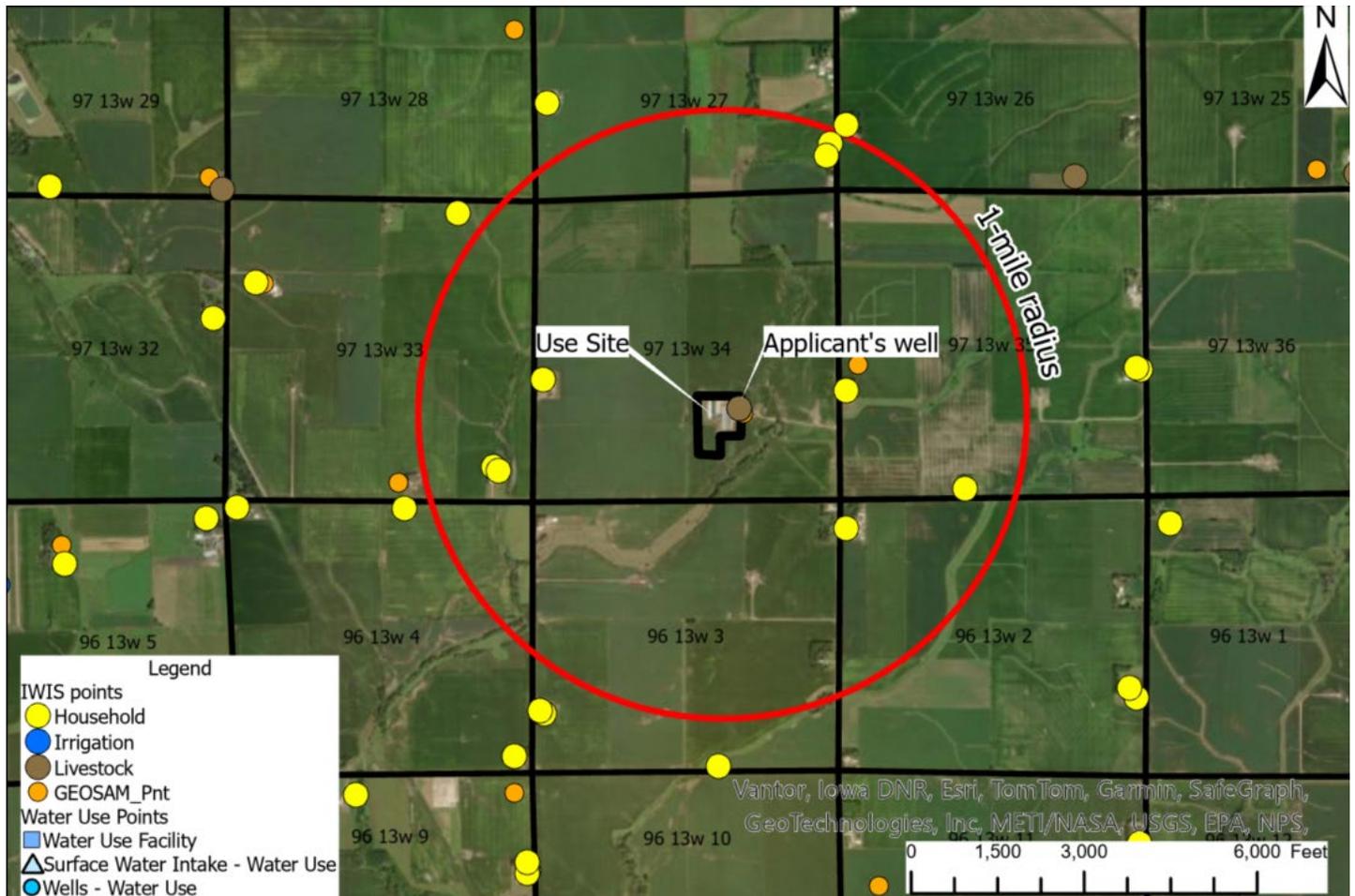


Figure 1 Nearby wells gathered from the Iowa Wells information (IWIS) database, the Iowa Geological Survey Sampling (GeoSam) database, and the Water Allocation Compliance and Online Permitting (WACOP) database. There are eight household wells within one mile.

The nearest household well is approximately 1780 feet east (IWIS #2116364). This well has a total depth of 170 feet (1057 feet asl). The PWL of the applicant's well is 1067 feet asl. The applicant's other livestock well showed a pumping water level of 1052 feet asl, which is lower than the bottom of the nearest household well. However, these wells are nearly one-third of a mile apart.

Table 1. All wells within a 1-mile radius of the applicant's well and proposed use site. The nearest well is approximately 1700 feet east of the applicant's site. The well that is crossed out was plugged in 2019.

IWIS #	GeoSam ID	Depth (ft)	Elevation (ft)	SWL (asl)	PWL (asl)	Rate (GPM)	Year	Use
2018965	2348	170	1206	1126	1126	20	1946	Household
2020675	5001	190	1239	1114	1107	14	1975	Household
2091911		100						Household
2111023		100						Household
2206601		100						Household
2116364	61507	170	1227	1132	1102	10	2006	Household
2185850	80760	235	1212	1132	1052	65	2015	Livestock
2217674	95189	174	1206	1131	1096	10	2021	Household
2209331	91839	256	1212	1129	1067	50	2019	Livestock
2219469	95724	195	1206	1135	1090	10	2021	Household

The closest permitted water user is the City of Alta Vista, located approximately 3 miles northwest. Alta Vista utilizes one Devonian aquifer well with a maximum rate of 450 GPM and a maximum allocation of 10.90 MGY. Well interference is not anticipated with this well due to the distance from the applicant's well.

The applicant is a registered animal feeding operation (AFO) with the department. This well will be used only to provide daily water to the livestock (swine) at the site. The applicant has requested a maximum annual allocation of 12.8 MGY, which implies an anticipated daily use of approximately 35,069 GPD. Using estimates for livestock consumption by animal type and classification, the average daily water use is estimated to be approximately 35,000 GPD based on the number and types of swine that are permitted at the facility (Table 2), nearly the same as the applicant's proposed maximum usage. The water quantity is justified based on the proposed use.

Table 2. The anticipated average daily water usage based on swine classification. The average daily total is approximately 35,000 GPD. Data based on publications from the Iowa Pork Information Center

(<https://www.ipic.iastate.edu/publications/310.nutrients.pdf>) and the Pork Information Gateway (<https://porkgateway.org/resource/water-recommendations-and-systems-for-swine/>)

Animal Type	Head	Est. Gallons / Head / Day	Total Est. Gallons / Day
Swine Sow and Litter	1,380	8	11,040
Swine Gilts (& Isolation)	1,250	3	3,750
Swine Gestation (& Boars)	4,869	4	19,476
Total	7,499		34,266

To estimate potential impact of the applicant's well on the nearest household well, a drawdown calculation was performed utilizing the average daily water use, the maximum withdrawal rate, and average textbook values of transmissivity, storativity, and hydraulic conductivity for karst/reef limestone, typical of the Devonian aquifer (500 feet/day). The applicant would need to run the well for approximately 292 minutes per day (0.20 days) based on the pump capacity of 120 GPM. The calculated drawdown at 1700 feet lateral distance from the applicant's well is approximately zero feet (Appendix A). There is no anticipated well interference with nearby wells.

Water Sustainability

The City of Alta Vista is the nearest water user with any continuous static and pumping water level measurements in their well since 2015. During the ten-year period, the static water level ranged from 39 to 43 feet above the sensor, and the pumping water level ranged from 30 to 33 feet above the sensor (Table 3).

The fluctuations in these water levels appear to be minor and do not indicate any issues with water sustainability in the Devonian aquifer.

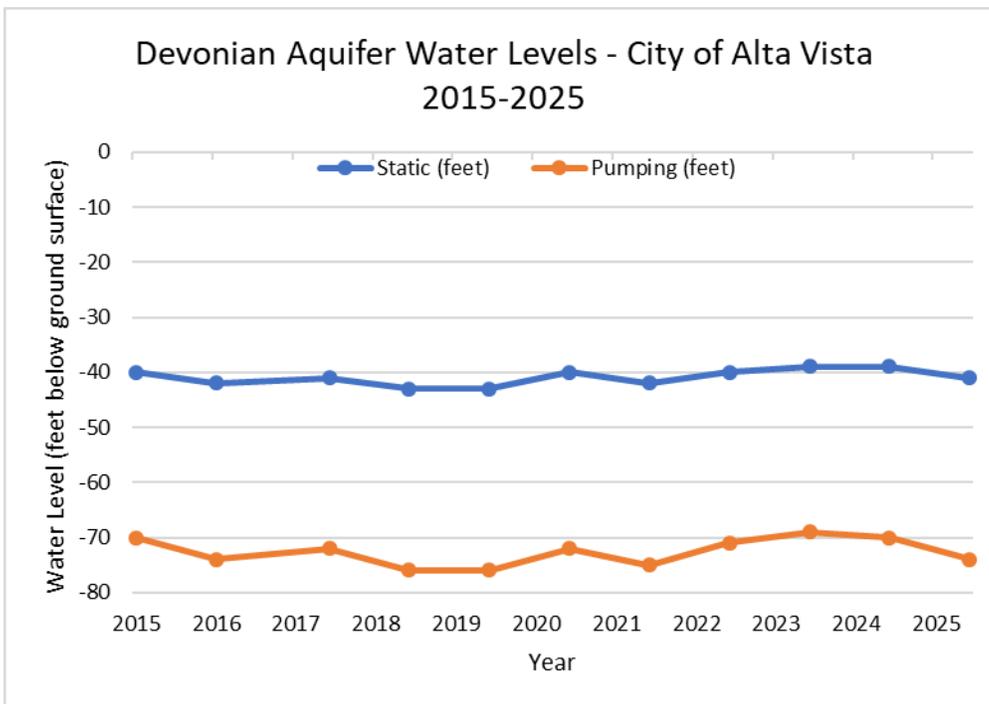


Figure 2 Devonian aquifer water levels from 2015 to 2025 from the City of Alta Vista. Static and pumping water levels have been steady with only minor fluctuations.

Findings

The applicant has demonstrated the ability and intent to use a reasonable quantity of water for beneficial purposes from the proposed well. No evidence suggests the proposed use would:

- Waste water resources.
- Conflict with Iowa's comprehensive water resource plan.
- Interfere with pollution control laws.
- Directly harm public interests or property owners with prior or superior water use rights.

All water users and wells that are connected to the Devonian aquifer, documented or undocumented, are protected in the event of substantial injury or well interference pursuant to Iowa Codes 455B.271 and 455B.281.

THEREFORE:

The requested water use conforms to Division III, Part 4, Chapter 455B of the Iowa Code and Chapter 50 of Part 567 of the Iowa Administrative Code. No adverse impacts are anticipated for nearby permitted use wells or nearby private wells. Subject to a public comment period, comments received, and modifications based on comments received, a permit shall be issued for a period of ten years.

Water Supply Engineering
Date: February 20, 2026

Appendix A

CALCULATED THEIS:

Given input:

 Constant pumping rate (Q): 0.267361 cfs
 Aquifer transmissivity (T): 500 ft²/day or 0.005787 ft²/second
 Time since pumping began (t): 0.20 days
 Radial distance from well (r): 1,700.00 feet
 Aquifer storativity (S): .0004

$$h_o - h = \frac{Q}{4\pi T} W(u) \quad u = \frac{r^2 S}{4Tt}$$

$$h_o - h = \frac{Q}{4\pi T} \left[-0.5772 - \ln u + u - \frac{u^2}{2 \cdot 2!} + \frac{u^3}{3 \cdot 3!} - \frac{u^4}{4 \cdot 4!} + \dots \right]$$

Q is the constant pumping rate (L³/T; ft³/day or m³/day)
 h is hydraulic head (L; ft or m)
 h_o is hydraulic head before pumping started (L; ft or m)
 h_o-h is the drawdown (L; ft or m)
 T is aquifer transmissivity (L²/T; ft²/day or m²/day)
 t is time since pumping began (T; days)
 r is radial distance from the pumping well (L; ft or m)
 S is aquifer storativity (dimensionless)
 b is aquifer thickness (L; ft or m)

u: 2.890000

W(u) series: -2.10141218827855E-02

Drawdown (h_o-h) at day 0.20: -0.08 ft using series calculation of W(u) to u⁶

Calculator: https://waterrights.utah.gov/wellinfo/theis/theis_input.asp

IOWA DEPARTMENT OF NATURAL RESOURCES

WATER USE PERMIT

Permit issued to:

Aquamarinebrook, LLC
1020 Pembroke Ave
Lawler, IA 52154

Permit Number: XXXX

Effective: XXXX

Expires: XXXX

The Permittee is authorized to:

withdraw water from one Devonian aquifer well, located on land generally described as NW ¼ of the SE ¼ T97N, R13W, S34 Chickasaw County, Iowa, in the maximum quantity of 12.8 million gallons per year, at a maximum rate of 120 gallons per minute during the period April 1 to September 30 of each year for operation of a confined animal feeding operation on said land.

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, 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--50.8(3), Iowa Administrative Code. Appeal must be in writing and must be received at the Iowa Department of Natural Resources, Water Supply Engineering Section, 6200 Park Ave. Suite 200, Des Moines, Iowa 50321-1371 within thirty days of the date of the certification of the mailing of the permit.

FOR THE DIRECTOR:

By: _____ Date Executed: _____
cc: 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 monthly water use from each authorized source and submit them annually to the Department.
2. Permittee may be required to submit other information related to the regulation of this use of water as directed by the Department.
3. This Permit is issued pursuant to Iowa Code chapter 455B.265(1) to authorize the withdrawal and use of water by the permittee, subject to the terms contained herein and to the laws and rules of the Department that regulate the withdrawal and use of water. Issuance of this permit does not relieve the permittee of the responsibility to comply with applicable local, state and federal laws, ordinances, regulations or other legal requirements.
4. Permittee shall be responsible for notifying the Department when there are changes to any conditions and authorizations given in this permit, including additional water source(s), well(s), intake(s), an expansion of the facility, or any other listed condition.
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. Each well authorized as a source of water in this permit must be constructed to allow for accurate measurement of water levels.
7. Withdrawals from permitted wells may be made only after the Permittee has made the following information available to the Department: well location(s), well log(s), and results of yield tests. Required chip samples shall be submitted to the Iowa Geological Survey.
8. Permittee shall be responsible for accurately measuring depth to water under non-pumping (static) conditions, depth to water under pumping conditions, and pumping rate(s) for all active wells listed in this permit, at a minimum of one measurement per year. These records shall be submitted annually to the Department.
9. Permittee must apply to renew this water use permit using the appropriate DNR form prior to the expiration date of the current permit version.
10. Permittee shall submit to the Department within 90 days of being notified by the Department or no later than the expiration date of this permit, whichever first occurs, 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.