Plant

Continued from Page 1

Veldhouse said Qore's Eddyville plant flips that model by using locally grown corn to supply a domestic alternative.

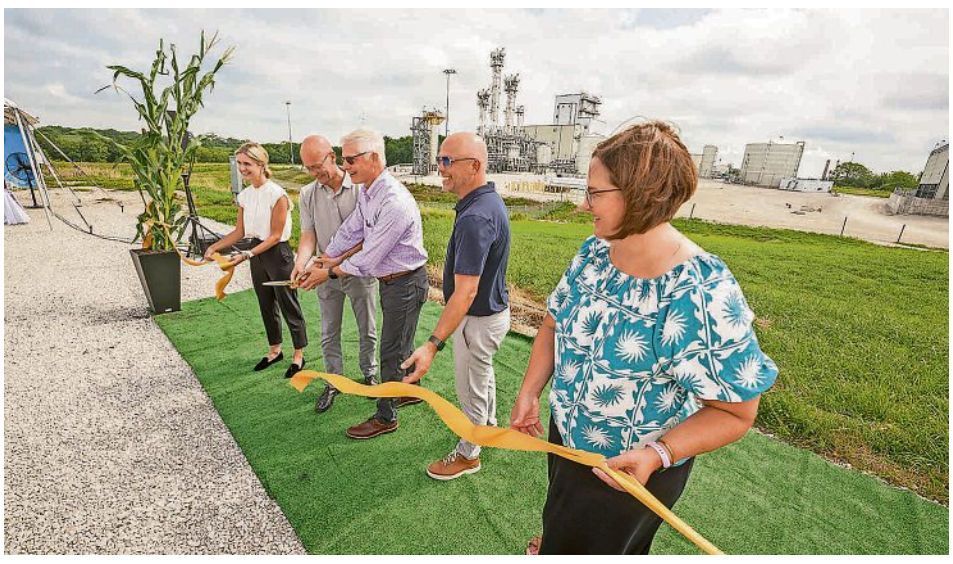
As a "drop-in" replacement, businesses can substitute QIRA for conventional BDO without retooling existing production lines, Veldhouse said.

Material producers, including LYCRA brand, already are planning to adopt QIRA made in Iowa for their spandex fibers.

Other common applications span denim, socks and athleisure wear, foams and air pillows in footwear, electric vehicle battery polymers and stabilizers, under-hood automotive plastics, and thickeners in lotions, hair gels, face masks and mascara, according to Veldhouse.

So far, LYCRA and German chemical company BASF are the only companies sourcing QIRA from the Eddysville plant, but Qore has hosted brand visits with companies including Spanx and Lululemon, connecting them with farmers and providing samples of the product, Veldhouse said.

Qore plans to ship QIRA globally.



Qore board members and CEO Jon Veldhouse (second from right) cut the ribbon at the July 22, 2025, grand opening of the $360 million QIRA plant in Eddyville, Iowa. PROVIDED BY JOE TRELEVEN/CORE

Why build this plant in Iowa?

Veldhouse said the plant is set to employ around 45 full-time staff and will consume annually, at capacity, 9 million to 10 million bushels of dent corn, field corn too starchy for eating and industrial uses.

Dent corn is Iowa's signature crop: the state produces more corn than any other U.S. state, though most of that harvest feeds ethanol plants.

Eddyville sits at the heart of this corn belt. According to Veldhouse, the town and state offered the right combination of tax incentives, a trained agricultural workforce and close proximity to corn growers. The Iowa Economic Development Authority provided $4 million in investment tax credits and $2 million in tax refunds to support the project. The Monroe County Board of Supervisors also provided $5.5 million in tax abatement.

Beyond $360 million, Qore invested about 1.2 million person-hours of local and regional labor into building its facility, according to Veldhouse. Cargill's onsite infrastructure — steam generation, water supply and wastewater treatment — helped slash both capital costs and construction time. Cargill is the majority owner of Qore; HELM AG is its minority shareholder.

Eddyville's facility is the first U.S. commercial-scale plant for corn-derived BDO and more than doubles the capacity of the previous largest bio-BDO site, a 30,000-ton Italian plant that opened in 2016.

How green is 'bio-based?'

Qore claims QIRA cuts greenhouse-gas potential by about 90% versus coal-derived BDO. That estimate rests on two pillars: carbon captured by corn through photosynthesis and milder processing conditions compared with petrochemical refining, according to Veldhouse.

He said that the Eddyville plant does not and will not in the future connect to any carbon sequestration pipelines.

Corn plants naturally absorb carbon from the atmosphere, storing it as starch that becomes feedstock for fermentation.

"Corn is a natural carbon-sequestration machine, right?" Veldhouse said.

Because Qore's process converts that biogenic carbon into 1,4-Butanediol rather than releasing it immediately as carbon dioxide, the net carbon footprint can be far smaller — provided that downstream energy inputs are low-carbon, he said.

Still, bio-based BDO is not zero-carbon. Fermentation releases carbon dioxide as a byproduct, and distillation demands steam and electricity. And those utilities often come from natural gas.

Veldhouse also said agriculture alone does not come close to replacing all petrochemicals in the near term, adding that recycling and material-efficiency improvements must accompany biofeedstock adoption.

Much of the environmental promise also hinges on farming practices.

Qore partners with the Iowa Corn Growers Association and local growers, paying a premium for corn grown using regenerative-agriculture practices — cover crops, reduced tillage and biological inputs — that aim to restore soil and ecosystem health, according to Veldhouse.

"At the heart of the environmental benefits are Iowa farmers who apply regenerative agriculture practices for growing dent corn," reads a Qore news release. "These practices are a holistic and inclusive approach to land management, meant to restore soil and ecosystem health."

A recent report indicates that Iowa farm runoff accounts for much of the pollution in state rivers and streams, including about 80% of the nitrates in the Des Moines and Raccoon rivers, driving concentrations among the highest in the nation and routinely exceeding the federal health-based drinking water standard.

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2024 WATER QUALITY REPORT FOR BONDURANT MUNI WATER SUPPLY

This report contains important information regarding the water quality in our water system. The source of our water is surface water. All of the water is purchased. Purchased water comes from Des Moines Water Works. Our water quality testing, shows the following results:

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
Total Trihalomethanes (ppb) [TTHM]	80 (N/A)	LRAA	53.00 (46-61)	03/31/2024	No	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [HAA5]	60 (N/A)	LRAA	25.00 (16-40)	12/31/2024	No	By-products of drinking water disinfection
Lead (ppb)	AL=15 (0)	90th	1.30 (ND-9)	2024	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	AL=1.3 (1.3)	90th	0.0083 (ND-0.0111)	2024	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
950-DISTRIBUTION SYSTEM						
Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	2.2 (1.03-2.77)	12/31/2024	No	Water additive used to control microbes

Note: Contaminants with dates indicate results from the most recent testing done in accordance with regulations.

DEFINITIONS

- Maximum: Contaminant Level (MCL) The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGS as feasible using the best available treatment technology.
- Maxinum Contaminant Level Goal (MCLG) -- The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- ppb-parts per billion.
- ppm parts per million.
- PCi/L- picocuries per liter
- N/A - Not applicable
- ND - Not detected
- RAA - Running Annual Average
- Treatment Technique (TT)-A required process intended to reduce the level of a contaminant in drinking water.
- Action Level (AL) The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Maximum Residual Disinfectant Level Goal (MRDLG) - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- Maximum Residual Disinfectant Level (MRDL) - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- SGL-Single Sample Result
- RTCR-Revised Total Coliform Rule
- NTU-Nephelometric Turbidity Units

GENERAL INFORMATION

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that ,water posed a health risk. More information about contaminants or potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. BONDURANT MUNI WATER SUPPLY is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Our water supply has completed a service line inventory. Please contact us for information regarding the inventory and how you can access the results.

SOURCE WATER ASSESSMENT INFORMATION

This water supply obtains some or all of its water from another public water supply. It is a consecutive water supply, where an originating parent supply provides drinking water to one or more downstream supplies.

Original Supply ID	Original Supply Name
IA7727031	Des Moines Water Works

OTHER INFORMATION

Turbidity is an indicator of treatment filter performance and is regulated as a treatment technique.

CONTACT INFORMATION

For questions regarding this information or how you can get involved in decisions regarding the water system, please contact BONDURANT MUNI WATER SUPPLY at 515-985-5110.

PURCHASED WATER INFORMATION

Our water system purchases water from the system(s) shown below. Their water quality is as follows:

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
7727031 - DES MOINES WATER WORKS						
03 - MCMULLEN AFTER TREATMENT						
Fluoride (ppm)	4 (4)	SGL	0.72	04/05/2021	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminurn factories
Sodium (ppm)	N/A (N/A)	SGL	19.14	04/01/2024	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	8.35 (0.21-8.35)	2024	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Dalapon (ppb)	200 (200)	SGL	0.20	09/19/2022	No	Runoff from herbicide used on rights of way
04 - RACCOON, DES MOINES, & GALLERY FLEUR						
Fluoride (ppm)	4 (4)	SGL	0.73	04/05/2021	No	Water additive which promotes strong teeth, Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Sodium (ppm)	N/A (N/A)	SGL	30.14	04/01/2024	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	7.34 (0.23-7.34)	2024	No	Runoff from fertilizer use; Leaching from septic tanks, sewage, Erosion of natural deposits
Atrazine (ppb)	3 (3)	SGL	0.20	07/05/2022	No	Runoff from herbicide used on row crops
cis-1,2-Dichloroethylene (ppb)	70 (70)	SGL	0.50	07/30/2024	No	Discharge from industrial chemical factories
05 - LP MOON ASR S/EP AFTER TREATMENT						
Sodium (ppm)	N/A (N/A)	SGL	34.3	07/01/2024	No	Erosion of natural deposits: Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	3.33 (0.16-3.33)	2024	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
06 - MCMULLEN ASR & TREATMENT PLANT S/EP						
Sodium (ppm)	N/A (N/A)	SGL	17.48	07/01/2024	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppt)	10 (10)	SGL	8.16 (0.46-8.16)	2024	No	Runoff from fertilizer use; Leaching from septic tanks, sewage, Erosion of natural deposits
07 - SAYLORVILLE S/EP (AFTER TREATMENT)						
Fluoride (ppm)	4 (4)	SGL	0.69	01/27/2020	No	Water additive which promotes strong teeth; Erosion of natural deposits, Discharge from fertilizer and aluminum factories
Barium (ppm)	2 (2)	SGL	0.07	01/27/2020	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Sodium (ppm)	N/A (N/A)	SGL	22.91	02/19/2024	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	3.10 (0.12-3.10)	2024	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
08 - ARMY POST ASR (AFTER TREATMENT)						
Sodium (ppm)	N/A (N/A)	SGL	45.5	07/01/2024	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	5.06 (0.66-5.06)	2024	No	Runoff from fertilizer use: Leaching from septic tanks, sewage; Erosion of natural deposits
Dichloromethane (ppb)	5 (0)	SGL	1.20	07/05/2022	No	Discharge from pharmaceutical and chemical factories
Turbidity (NTU)	N/A (N/A)	TT	Enter highest single measurement and the lowest monthly percentage of samples meeting turbidity limits here.			Soil runoff