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Idea Exchange

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What's New

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FloodDefender

By Portadam

Billy Tiller

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Billy Tiller

Portadam

Director of Business Development

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PORTADAM

Deployable Flood Protection, Temporary Cofferdam & Water Storage Solutions

Decades of Water Control Expertise

PORTADAM®

Flood Risk Mitigation Solutions™

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WHEN TIME IS OF THE ESSENCE

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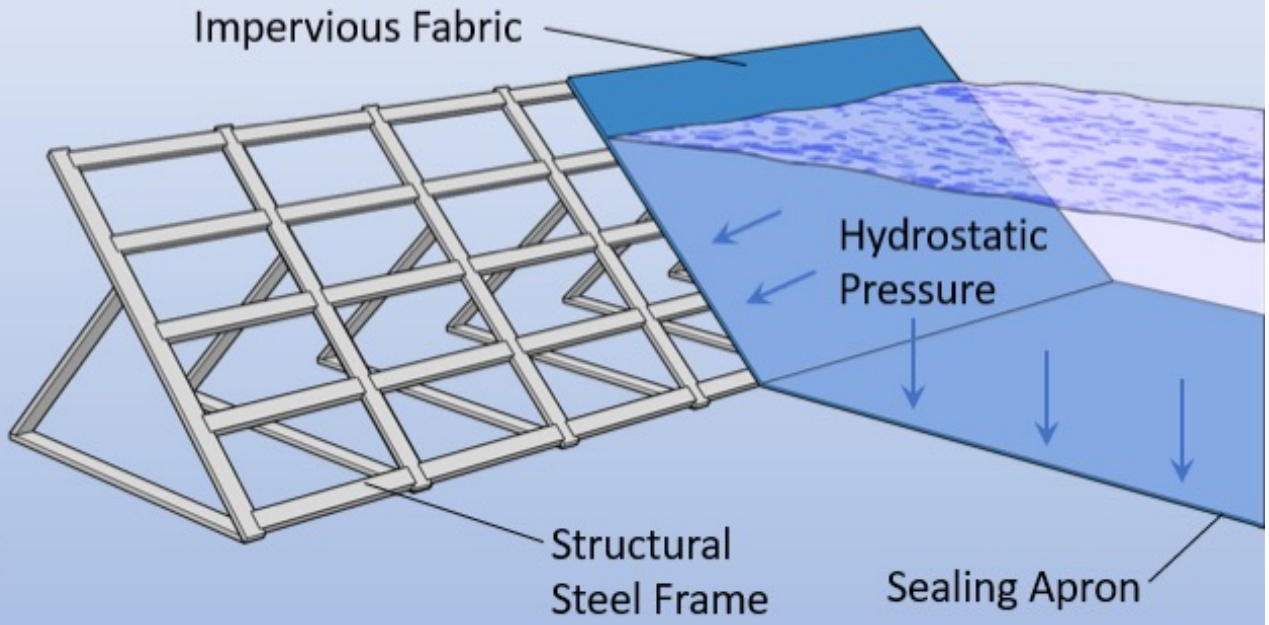
Portadam's Rapid Deploy Solution

- **Fully Engineered**
  - Resistance to Overturning
  - Resistance to Sliding
  - Frame Stress Analysis
  - Fabric Stress Analysis
- **Redistributes Load vertically and downward to secure structure**
- **Hydrostatic loading creates seal to surrounding ground**



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200X QUICKER THAN SANDBAGS

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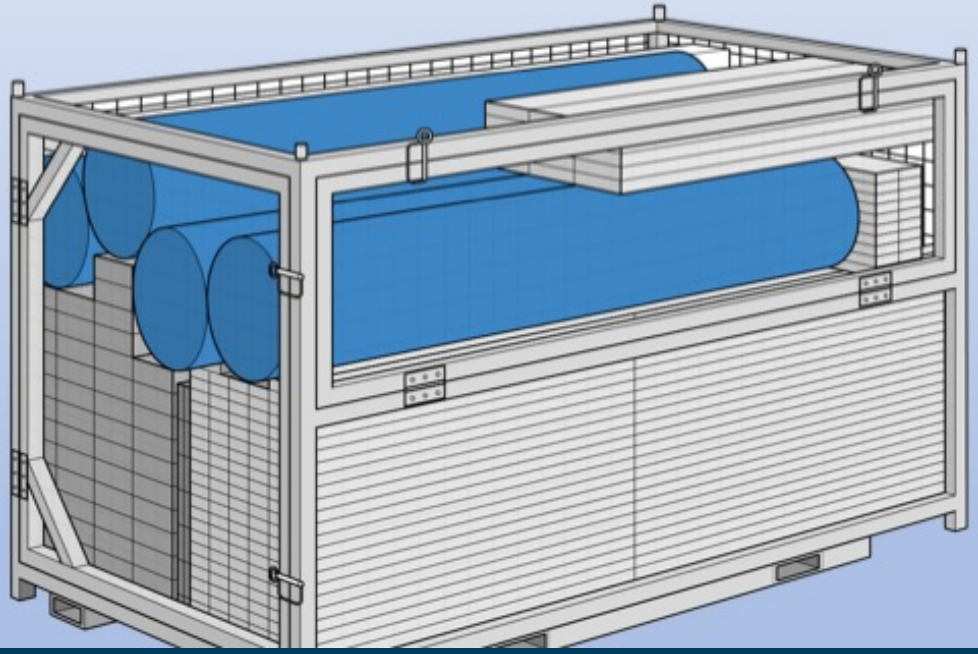
Compact Engineered Design

- Modular – Can be deployed in virtually any configuration
- Allows for storage near to high flood risk areas
- Ease of storage, transport and deployment of complete kits
- Example: 150 linear feet of 48" protection stored in a single 6' x ~4 x ~4' portable, stackable racks



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Thank you!

Visit us at our booth # **1544**

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Testing for Enogen® becomes New Norm at Major Corn Processors

Industry point of view from only Onsite Enogen Detection Test Kit provider

Enogen is a registered trademark of Syngenta Participations AG

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Akshay Vidwans

EnviroLogix

Product Manager

ENVIROLOGIX

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Testing for Enogen becomes New Norm at Major Corn Processors

Industry point of view from only Onsite Enogen Detection Test Kit provider

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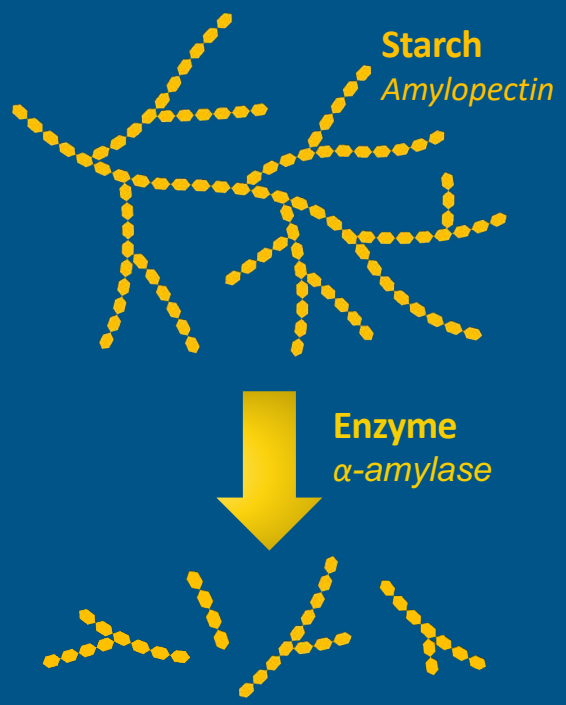
Alpha amylase breaks down starch into smaller chains, impacting starch functionality



Enogen Corn

Adoption achieving a tipping point 11 years in the making

Enogen Corn | Introduced for Ethanol production

- Enogen corn is a GMO corn that produces an endogenous α-amylase in endosperm that is activated in the presence of water and elevated temperature (>70°C) (Lanahan et al 2003)
- Enzyme acts as catalyst for breaking down starch into sugar- helpful in ethanol manufacturing and feed digestion. Not helpful in baking dough
- Licensed growers to produce Enogen grain to support a growing number of ethanol plants, representing approximately **3 billion gallons of ethanol capacity** - *Syngenta Website*

Feed Application | A Major Success Since Introduction

- Syngenta introduced a feed application for Enogen corn in 2018, claiming higher feed efficiency in dairy and beef production.
- The demand for Enogen corn for feed has rocketed over last three years and drove **double-digit growth in sales of the seed in 2021**.

- Syngenta 2021 financial Report

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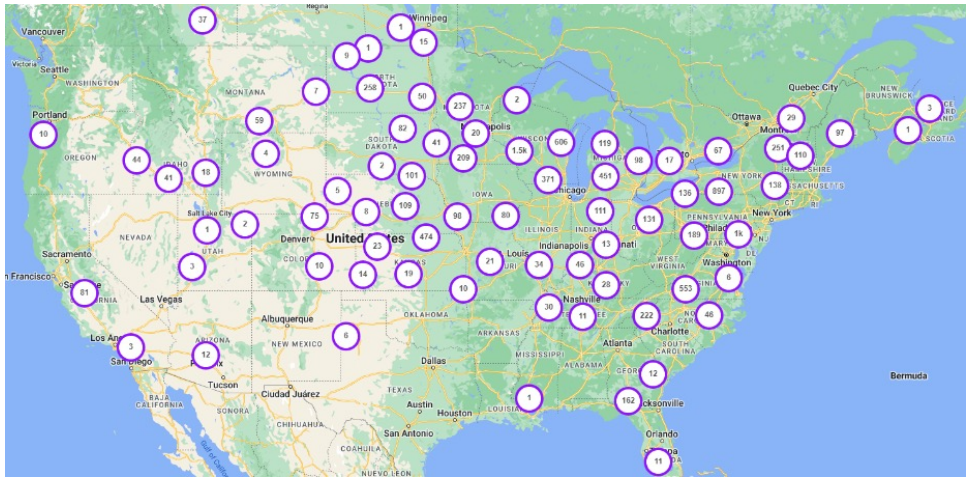
Contamination Risk is Real! | Feed Application growth has changed risk profile

2022 Crop Year Enogen Farms connected on IP360 platform



- With Enogen corn spreading to all corn producing areas in the US, there is a high overlap of Enogen corn growth areas and Milling capacity
- Risk of cross-pollination due to wind and weather
- Risk of cross-contact through shared equipment, storage, transport
- Recent enquiries and test sales to Central and South American customers importing food grade corn from US

"We cut about 400 to 500 feet off the end of 400 acres that we had to bin separately—and it was contaminated. We tested it and it wasn't going to meet specs."

-Mark Jost of Henderson, Nebraska

We see several **positive results of PCR tests** conducted at our lab **for customer samples** sent for routine testing or issue root cause analysis

SOURCE: US Corn Masa Industry: Structure and Implications for Great Plains region- Department of Agricultural Economics Kansas State University, https://ip360.agconnections.com
https://brownfieldagnews.com/rural-issues/enogen-vs-food-grade-coexistence-issue-nebraska/

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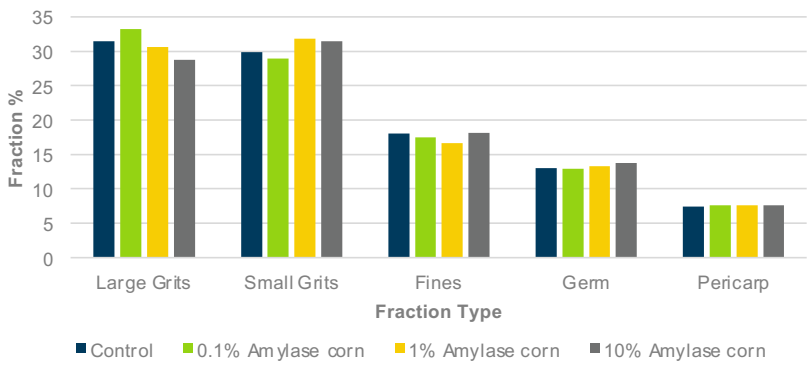
Impact on Dry and Wet Milling | Scientific Study by Dr. Vijay Singh, University of Illinois Urbana-Champlain

High Impact on Residual Enzyme

Residual Amylase Content (U/g)	Control	0.1% Amylase corn	1% Amylase corn	10% Amylase corn
Large Grits	0.04	0.04	0.08	2.13
Small Grits	0.01	0.02	0.09	2.88
Fines	0.03	0.01	0.07	2.44
Germ	0.09	0.14	0.63	1.87
Pericarp	0	0.01	0.2	1.51
Mean U/g	**0.17**	**0.22**	**1.07**	**10.83**

Limited Impact on Fraction Yield- Dry Milling



"The issue is a significant one for the milling industry, **not because it has an impact on the milling process but on the product millers ship to their customers**"

- R. Don Sullins, a member of the NAMA technical committee

- Reported that there is no impact of amylase corn addition in the dry/wet milling *yields* for dent corn but reported **growth in residual enzyme content**
- Enzyme activity values correlate with concentration of total Amylase corn with **1% Amylase corn correlating to 1U/g residual enzyme***
- The study concludes by recommending that **quality measurements are warranted** on final end-products of these fractions to determine the impact of these residual enzyme concentrations

*By our model that was reviewed by an enzyme industry expert, 1 U/g is enough Amylase content to catalyze conversion of 100% 300 chain length corn starch in 20 min at test specified conditions of 55C, pH 10.

Enzyme optima is >70C. Real world performance may be accelerated or inhibited based on temperature, pH etc. The actual acceptability of the degraded product will also depend on amount of dextrin-glucose created and required to make the starch dysfunctional

SOURCE: Wet-Milling and Dry-Milling Properties of Dent Corn with Addition of Amylase Corn- Singh et al 2006
Bakingbusiness.com- https://www.bakingbusiness.com/articles/43358-millers-fear-starlink-sequel-in-corn-amylase

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Real World Product Quality Issues

What I have heard over the last year

Product Quality Impact- Voice of Industry

- **Masa flour batch quality incidents** leading to tortilla product quality impact
- Enzymes can remain active well after the cooking process is over and **continue to impact the starch quality of the packaged foods**, making tortilla dough sticky or the product fragile
- **Cornbread** made using this enzyme containing corn flour **crumbles on its own** when stored in a hot box/ hot shelf
- **Soupy and runny corn grits**
- **Tamales don't bind**

Business Impact

- Customer complaints
- Loss of production
- Loss of customers
- "Enogen Free" claims and assertions to end-product customers in the know

To mitigate impact from even low levels of contamination, industry requested for more sensitive test capable of detecting <0.1% Enogen Corn, compared to earlier available test LoD at 0.25%

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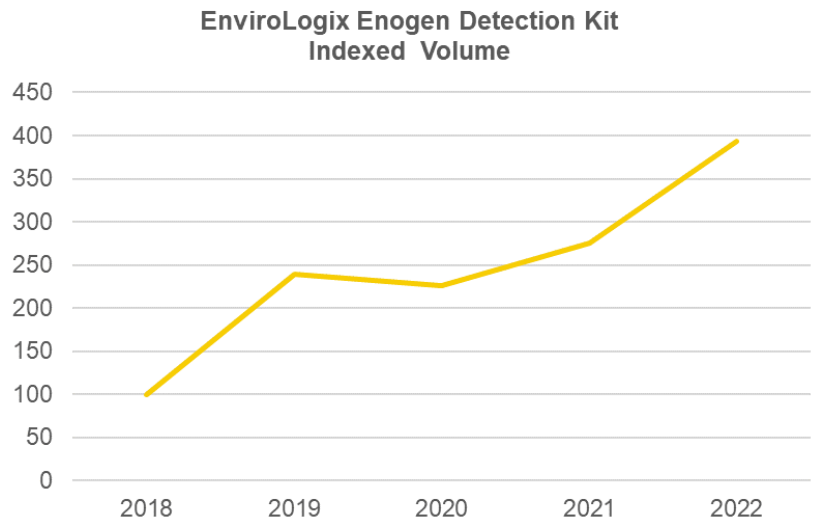
4x Growth in testing since introduction of Feed application of Enogen corn



Large processors clearly see Enogen cross-contact as a major risk, evidenced by the growth of testing at, both, wet and dry milling facilities

Recommendations

- ✓ **Senior Quality Managers most effective in protecting product quality and customer relationships.**
- ✓ **Include Enogen corn detection test during root cause analysis** of customer complaints that could be related to starch degradation
- ✓ **Measure your sourcing risk through supplier mapping and testing**
- ✓ **Understand end-customer impact for processes** where corn is cooked/kept at >50C for >10 min or soaked in acidic/alkaline environments e.g. baking, nixtamalization, boiling, etc.
- ✓ **Be proactive** to manage risk to product quality and brand reputation

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Solential ENERGY

Solar Strategies for Grain and Feed Operations

Presented by Jim Shaw

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Jim Shaw

Solential Energy

President

Solential ENERGY

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FEATURED PROJECT

THE MASCHHOFFS

America's First Solar Powered Feed Mill

3 MW Solar Array Griggsville, IL

> Rising energy costs were not something we could absorb and remain profitable - and that was before 2022 when energy costs really took off. We needed to do something"
>
> -Gerry Daignault
> The Maschhoffs

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THE CHALLENGE

THE MASCHHOFFS FACED SEVERAL CHALLENGES...

Energy costs at the primary feed mill had doubled

→

Electricity from rural electric co-op exceeded their grain costs

→

Electricity had become their biggest operating expense

→

Grain operations are critical to the health of their 150,000 sows

→

An interruption in power or loss of heat could alter the chemistry of their feed & impact the growth of their animals.

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PROJECT CONSIDERATIONS

CURRENT ENERGY CHARGES

The mill was served by an electric cooperative whose energy charges were 50% higher than market averages

ENERGY USE & UTILITY TARIFFS

Solential began modeling energy solutions that included microgrids, solar PV and energy storage.

FEDERAL & STATE INCENTIVES

The state of Illinois offers financial incentives to businesses for generating renewable energy.

SOLAR RENEWABLE ENERGY CREDITS (SRECS)

For each unit of energy a solar array produces, that unit is converted into a credit for the solar array owner to sell back to the state through the Illinois Shines Program.

CHOOSING THE BEST ENERGY SOLUTION

The family-owned company approved a plan to deploy a solar-only solution for the Griggsville mill.

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THE IMPACT

$320,000

FIRST-YEAR ENERGY SAVINGS

$700,000

ANNUAL ENERGY SAVINGS

5 YEARS

TIME IT TAKES PROJECT TO PAY FOR ITSELF

35 YEARS

AMOUNT OF ENERGY GENERATION CAPACITY TO POWER THE MILL

50%

ENERGY CONSUMPTION OFFSET BY SOLAR

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SOLENTIAL ENERGY
13277 ILLINOIS ST.
SUITE 110
CARMEL, IN 46032

317-441-1849

Visit us at Booth # 402!

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Utility Monitor

Understanding Your Power Consumption for Better Cost Management

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Dan Riley

Interstates

Analytics Manager

INTERSTATES

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Identify

Better understand your energy consumption on high-demand equipment

Impact

Set short and long-term strategies that lead to additional savings and improved operations

Connect

Bring any network metering system together giving you a central location to view and analyze data

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What Does This Look Like?

- Gain real-time analytics and monitoring
- Increase accessibility and connectivity
- Build a scalable solution

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Power: Data At All Levels

Service & Distribution

- Plant-Side Metering
- Live Utility Bill
- Power Quality
- Capacity Trending and Indexing
- Power Factor
- Harmonics

MCC & Sub-System

- Per Motor & Drive Data
- Load Monitoring
- Unit Efficiency
  - Compressed Air
  - Boiler

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Billing Savings

Audit your utility bill to challenge unplanned power expenses

Project Savings

Know your load capacity for future capital projects

Maintenance

Find what drives and motors are affecting your maintenance budgets

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THANK YOU!

For more information, visit Interstates at booth 2102.

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Electric Motor Maintenance

Common failures and predictive maintenance tips

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Matthew Rodebush

ABB Motors and Mechanical Inc.

Global Segment Manager – Food & Beverage, NEMA motors

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Electric Motor Maintenance

Common failures and predictive maintenance tips

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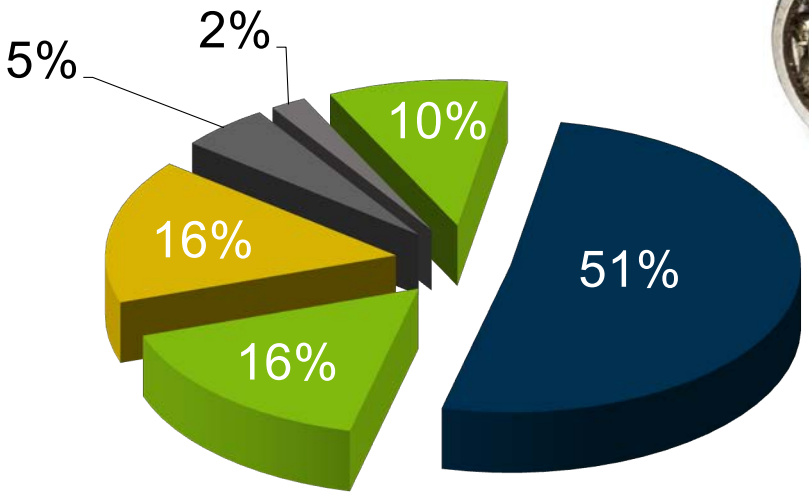
Did you know?

Most common failures in electric motors:



- Bearings
- Windings
- External Factors
- Rotor Bar
- Shaft/Coupling
- Unknown

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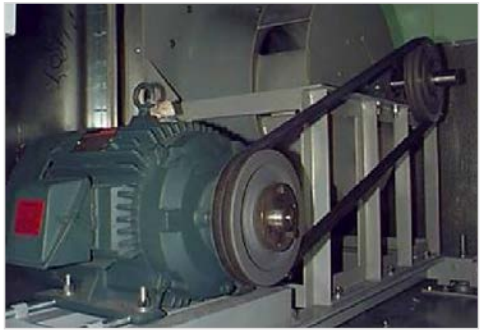
Predictive maintenance tips

Visual inspection

- Misalignment, securely mounted
- Damaged parts, missing components
- Cooling effectiveness, (Ambient)
- Shaft, gaskets, contaminants
- Cabling/grounds have good contact



Mechanical - bearings

- Regular greasing schedules
- Check for excessive axial movement
- Smooth, easy rotation of the motor shaft
- Inspect for noise during normal operation
- Use of bearing RTD's to record temperature

Electrical - winding

- Check incoming power voltage
- Overloaded phases (imbalance) causes overheating using multimeter or variable speed drive data
- Amperage draw of the motor to ensure you are not overloading or under sizing the motor
- Clean and dry windings and insulation are critical for long motor life

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Remoting monitoring with ABB Ability Smart Sensor

Affordable, clever and easy solution

- Improves safety
- Reduces downtime
- Saves energy
- Reduces your maintenance cost
- Optimizes your investment
- Mitigates your risks

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ABB Ability Smart Sensors

Baldor-Reliance motors smart sensor promotion

Upgrade new motors to Smart Motors for $175, and select motors are eligible for a no cost upgrade to Smart Motors. Ask your local sales representative for more information.

To learn more about ABB Ability

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ABB Motors and Mechanical Inc.

Booth 2126

Come see us!

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QR Technology

BCI

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Brett Buchanan

Bulk Conveyors Inc

CFO

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BCI's Intelligent QR Technology

A platform with infinite possibilities at your employees' fingertips.

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SCAN FOR SPARE PARTS AND SERVICE

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MAIN PAGE

Intelligent QR Technology Main Page

- Equipment Description
- Equipment Drawing
- Spare Parts for the Equipment
- Safety Guidance
- Maintenance Recommendations
- One-Touch Link to BCI Customer Service

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BCInsider
BCI DIY TECHNICAL RESOURCES

BCI MONTHLY CHAIN CONVEYOR INSPECTION

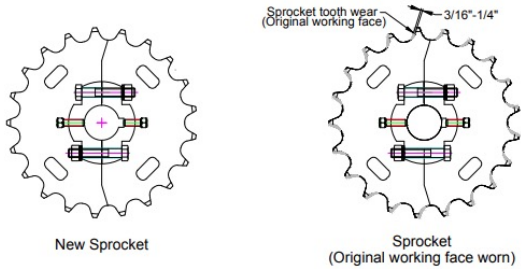
NAME OF INSPECTOR_____

DATE_____ CONVEYOR I.D. NO._____

DO NOT walk on chain conveyor covers, **DO NOT** perform any work on conveyor until all power has been locked out (with lock and key in you're possession).

BCI
BULK CONVEYORS INC.
"Where Customer Service is always FIRST"

Sprocket Wear



BCInsider
BCI DIY TECHNICAL RESOURCES

(c) Use a temperature gun to ensure the motor is operating at the appropriate temperature.	--	--
(d) Is the reducer oil level correct?	--	--
(e) Is the reducer breather cap clean?	--	--
(f) Are the coupling guard and drive guard in good operating condition	--	--
(g) Are the motor bolts tight and is the motor in line with the reducer shaft?	--	--
(h) Is the motor running quietly?	--	--
(j) Are the v-belts and sheaves in good condition?	--	--
(k) Are the roller chain and sprockets in good condition?	--	--

Safety/Maintenance Guidance

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BULK CONVEYORS INC.

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Spare Parts List

BULK CONVEYORS INC.

PAGE 1 OF 1

CUSTOMER:	GEAPS 2023	ORD. NO.	022-1051-003
SHIP TO:	Kansas City, MO	REQ. DEL.	
DATE	2/26/2023	STOCK INV.:	
		AQ	

SPARE PARTS LIST

ITEM #	QTY	PART #	DESCRIPTION	PO #	P.O. DUE
1	1	EP4B-IP-307R	3 7/16" DODGE IMPERIAL "E" 4-BOLT PILLOW BLOCK BEARING (NON-EXPANSION)		
2	1	EP4B-IP-307RE	3 7/16" DODGE IMPERIAL "E" 4-BOLT PILLOW BLOCK BEARING (EXPANSION)		
3	2		CENTER PULL TAKE-UP BEARING 2 15/16" B.		
4	1	10TW124307	10T, WH124, 3 7/16" BORE, SPLIT SPROCKET W/K.S.,S.S.,H.T.		
5	1	10TW124215	10T, WH124, 2 15/16" BORE, SPLIT SPROCKET W/K.S.,S.S.,H.T.		
6	4	BCI	SECTIONS OF WH124 CARBON STEEL ALL COTTERED CHAIN ASSY X 120" LG.		
7	1	BCI	SECTIONS OF WH124 CARBON STEEL ALL COTTERED CHAIN ASSY X 60" LG.		
8	7		WH124 HEAT TREATED COUPLING PINS W/ COTTERS		
9	1	M8001V10C	M800 SPEED SWITCH		
10	1	WG1-4B-4	WHIRLIGIG W/ 4 TARGETS		
11	1	81-10523-B2	MODEL 81 GO SWITCH		
12	1	0054SDSR41A-P	5 HP MOTOR, 1800 RPM,184T FRAME, TEFC MOTOR		
13	1	904000	TA4207H40 DODGE TAII REDUCER		
14	1	904022	TA4207TB X 2-7/16 TAPER BUSH KIT		
15	1	904109	TA4207RA ROD ASSEMBLY		
16	1	904090	TA4207MM INCH MOTOR MOUNT ASSY (SET AT M3)		
17	1	904096	TA4207BG BELT GUARD - POS.B		
18	1	904110	3/4 SITE TUBE KIT TA4-TA12		
19	1	112187	2-3V3.15-1210 SHEAVE		
20	1	117080	1210 X 1 1/8-KW		
21	1	112196	2-3V6.0-1610 SHEAVE		
22	1	117162	1610 x 1-7/16 -KW BU		
23	2	102354	3V830 BELT		

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BULK CONVEYORS INC.

Spare Parts

- Part/Model Number
- Description and quantity
- Order the correct spare parts in a timely manner

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Equipment Drawing

- Rated Capacity
- Equipment Model/Size
- Key Part Sizes (sprockets, shaft, motor, reducer)
- Chain Speed

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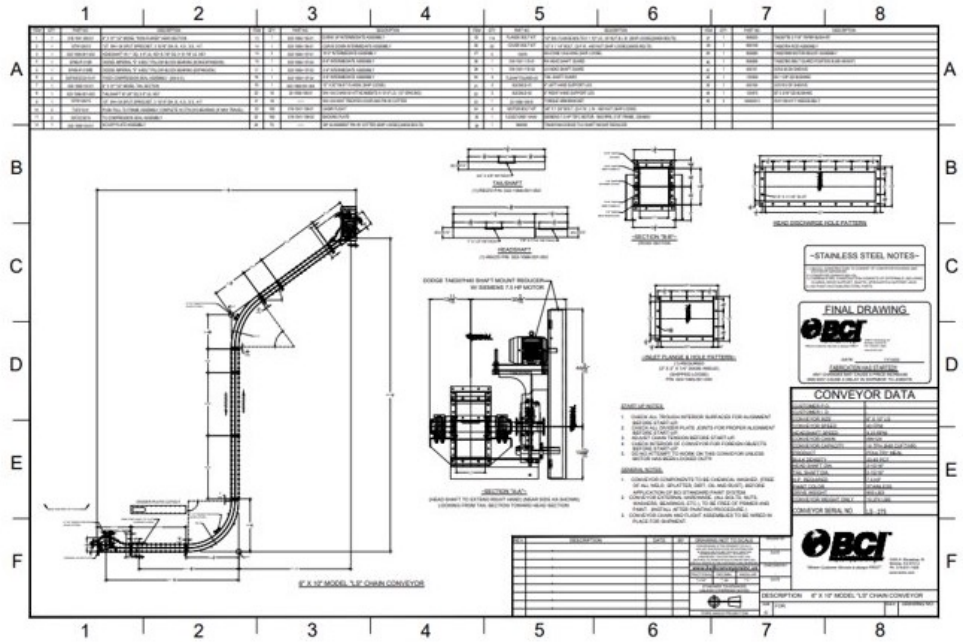
Conveyor Drawing



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Rapid Testing Solutions for the Future of Grain & Feed

VICAM

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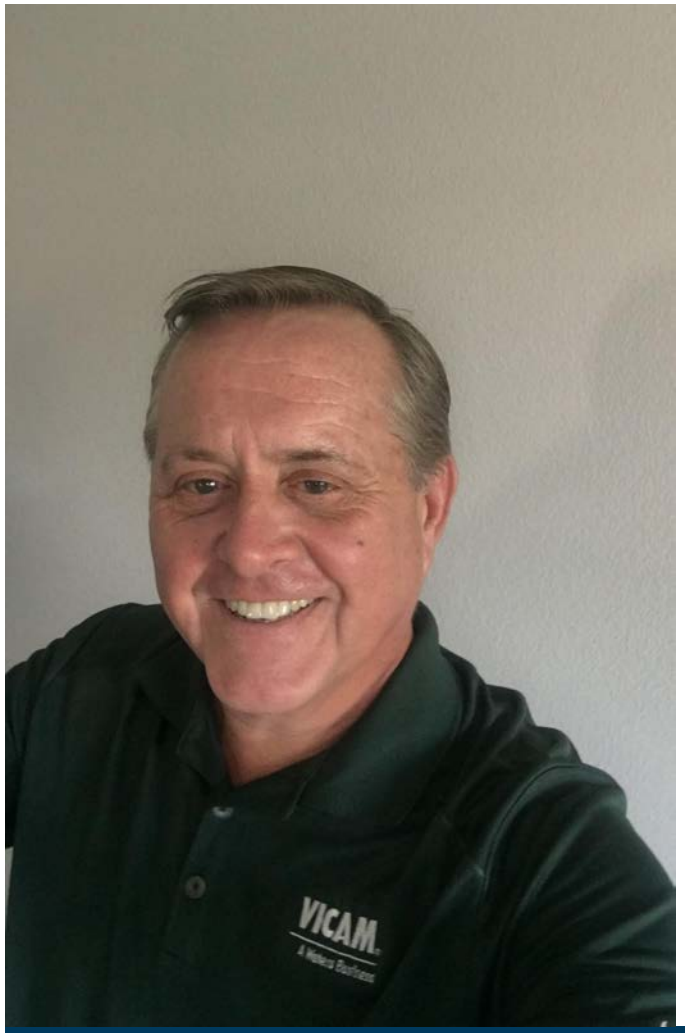

Carlton Skipper

VICAM

Regional Sales Manager

Waters™ | VICAM™

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Why Testing for Mycotoxins Has Become Essential

- Secondary metabolites of naturally occurring, soil-borne molds
- Toxic at very low concentrations
- Global regulatory limits & guidelines for animal feeds are common
- Early detection supports prevention

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Optimizing For Multi-Mycotoxin Testing

- One Extraction Enables up to 6 Different Toxins to be Tested
- Ideal for incoming raw materials
- Select only the toxins you are targeting
- 30-Second Extraction, Filter, Apply 100 uL of filtered extract to each strip
- Results for **up to** 6 toxins in less than 10 minutes

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Finished Feed: One Method Covers All

- Single, universal barcode calibrates strip test reader
- Replaces traditional, toxin-based calibration approaches
- On-board calibration storage, recall and reuse
- Automated calibration management, deletion when strip test lot is beyond expiration date

Afla-V *ONE* Procedure Overview

5 Minutes

- Weigh 5g ground sample
- Add 30 mL mL 80:20 Methanol:Water

- Extract: 90s

- Filter

- Dilute Sample:

<u>Range 1</u>: *2-80 ppb*

- Mix 200 µL *ONE* Diluent w/ 100 µL filtered sample extract

<u>Range 2</u>: *5-300 ppb*

- Mix 200 µL 80:20 Methanol:Water w/ 100 µL filtered sample extract
- Transfer 100 uL to vial containing 200 µL *ONE* Diluent

- Transfer 100uL to Afla-V HS Strip
- Develop 5 Minutes
- Read result

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Afla-V™ ONE
QUANTITATIVE STRIP TESTS

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Performance Data: 20ppb Aflatoxin Spiked Samples

Afla-V™ ONE
QUANTITATIVE STRIP TESTS

Total aflatoxins (B_1, B_2, G_1 and G_2) determination using Afla-V *ONE* for finished feeds – spike level: 20 ppb

Feed	Mean	STD	CV%	Recovery (%)
Hog finisher	20.1	1.4	7.0	100.3
Pig starter	19.8	0.3	1.6	97.9
Laying chickens	20.1	0.6	3.2	100.3
Bird/turkey	19.6	0.1	0.6	95.3
Dog food 1	19.4	3.8	19.8	87.6
Dog food 2	19.7	1.4	6.9	97.1
Horses	17.9	0.2	1.3	89.5
Equine senior	19.9	0.9	4.7	96.8
Equine/beef	22.2	0.1	0.2	108.4
Beef calves	18.7	1.6	8.6	88.5
Cattle	20.6	0.1	0.7	101.1
Goat grower	18.6	0.5	2.9	85.0
Goat snax	18.8	0.7	3.5	89.3
Cat food	19.3	0.9	4.6	93.4
Rabbit	18.1	0.5	2.9	89.3
Fish	22.4	1.4	6.4	104.9

DON-V *ONE*: Universal Calibration for Vomitoxin Detection

- Barcode Based Calibration
- Dual Range Options
  - 0.2 – 10 ppm
  - 0.8 – 40 ppm
- Total Test Time: < 8 Minutes
- One Method For “All” Complete Feeds
- Introduced Afla-V *ONE in 2022*

DON-V™ ONE
QUANTITATIVE STRIP TESTS

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Glyphosate-V - *The World's First Fully Quantitative Lateral Flow Strip Test For Glyphosate in Cereal Grains and Water*

- Full range, quantitative Glyphosate testing
- Rapid, on-site results (<15 Minutes)
- Cereal Grain Samples
  - Range: 0-2ppm
- Water Samples
  - Range: 0-0.5ppm

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Questions? Visit Us at Booth #2515

Waters™ | VICAM

©2022 Waters Corporation

Encoder-Flex 1024

Multi-purpose position
& speed monitor!

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Anthony Leali

4B COMPONENTS LIMITED

Business Development Manager,
Electronic Products

4B COMPONENTS LIMITED

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Encoder-Flex 1024

Multi-purpose position
& speed monitor!

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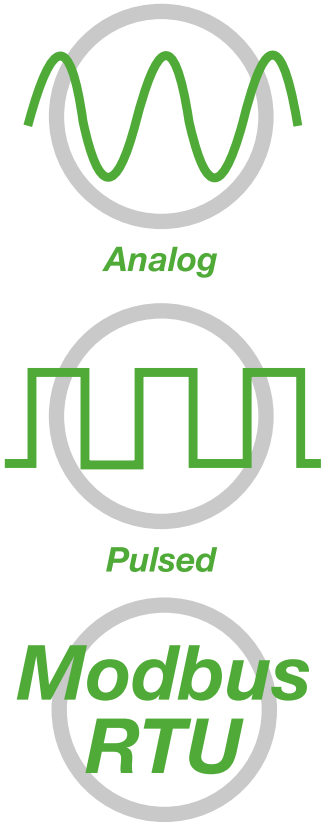
Encoder-Flex 1024

- Position or Shaft Speed Monitoring
- 3 Outputs: 4-20 mA, Quadrature Pulsed, and Modbus RTU
- Configurable for 1-1024 PPR
- CSA/UL Class II Approval (Pending)



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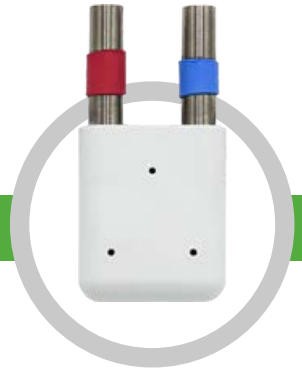
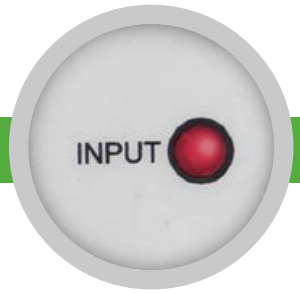
Encoder-Flex 1024

- Lightweight Compact Design – Magnet Mountable
- Sealed Stainless Steel Construction
- Simple External Magnetic Calibration
- LED Status Indicators





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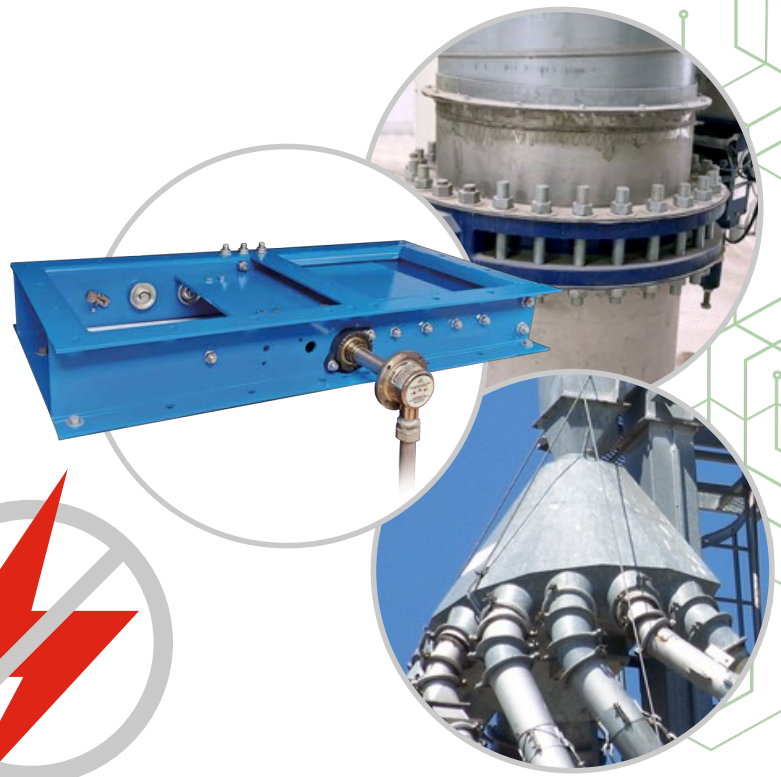
Encoder-Flex 1024

- Slide Gates
- Valves
- Distributors
- Virtually unlimited multi-turn calibration
- Position retention AFTER power loss



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Encoder-Flex 1024

- Dryers
- Bin Sweeps
- Mixers
- Slow Moving Conveyors

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Encoder-Flex 1024

- Real-time Display
- Calibration Assistant
- Configure Resolution
- Diagnostics

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See it live in

BOOTH #918

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3D Scanning Applications in the Ag/Industrial Sector

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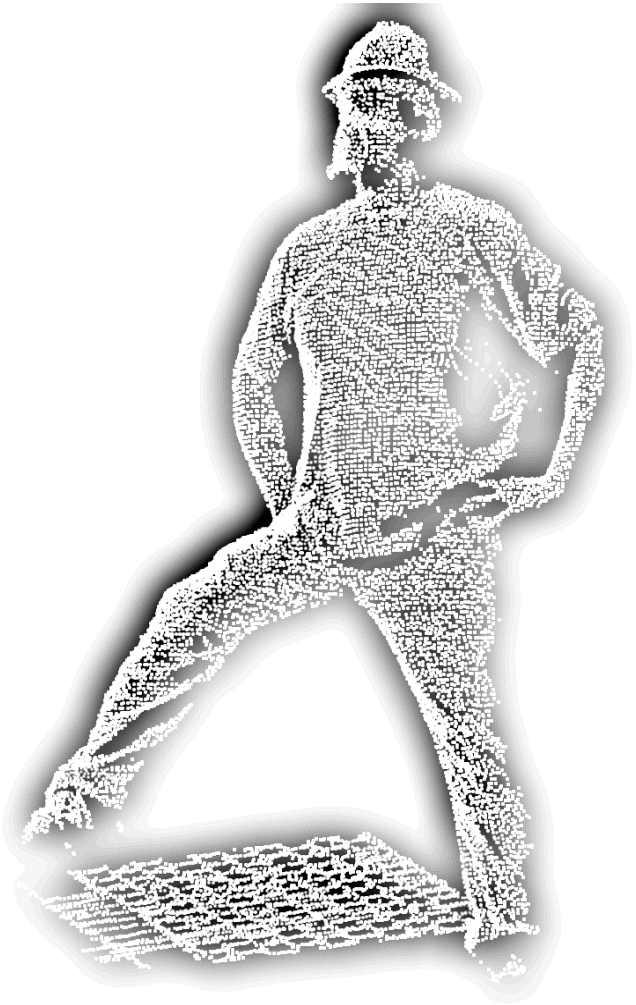

Daniel Starr

SCANSTAR, LLC

COFOUNDER

SCANSTAR

DATA DRIVEN GEOSPATIAL SOLUTIONS

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3D Scanning Applications in the Ag/Industrial Sector

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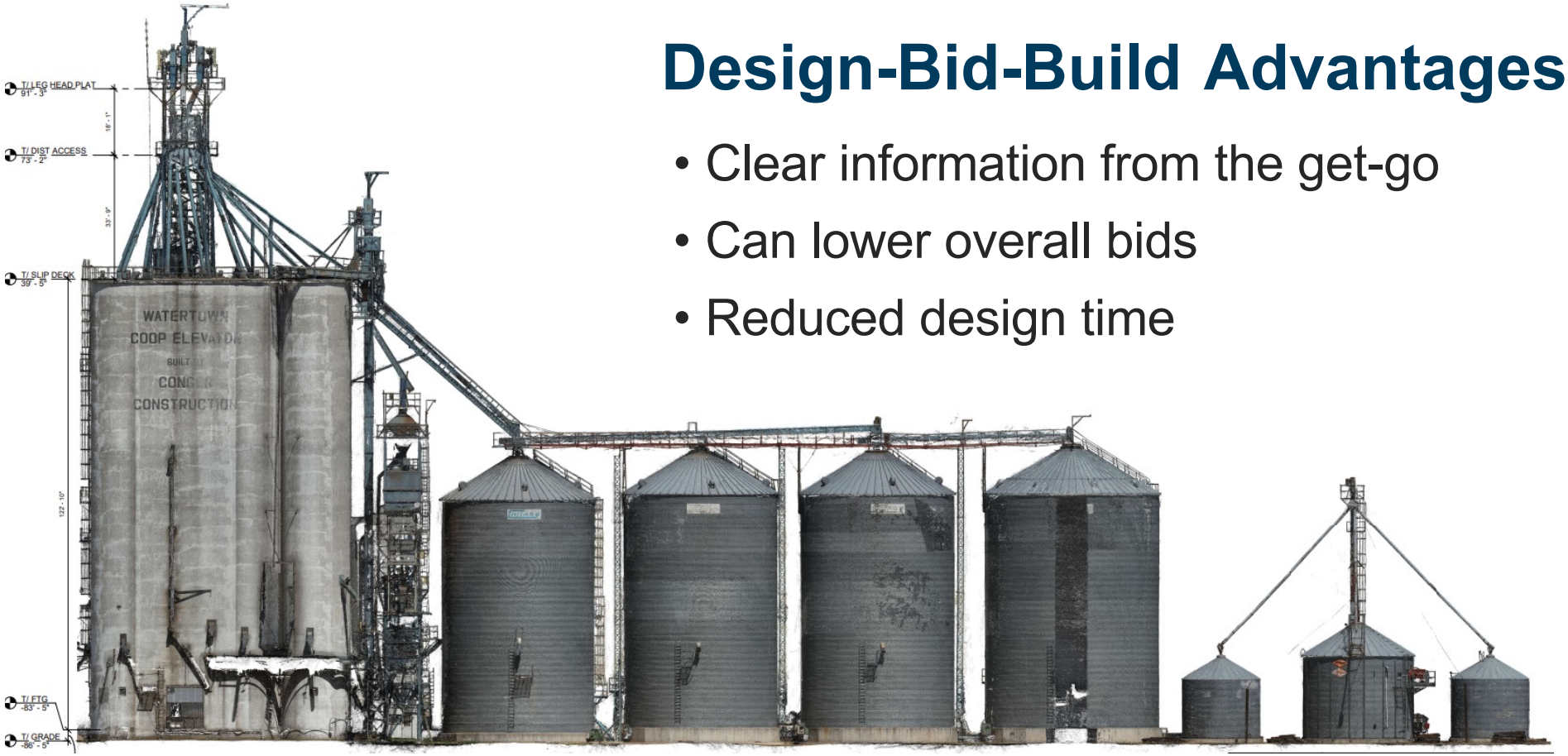

Design-Bid-Build Advantages

- Clear information from the get-go
- Can lower overall bids
- Reduced design time

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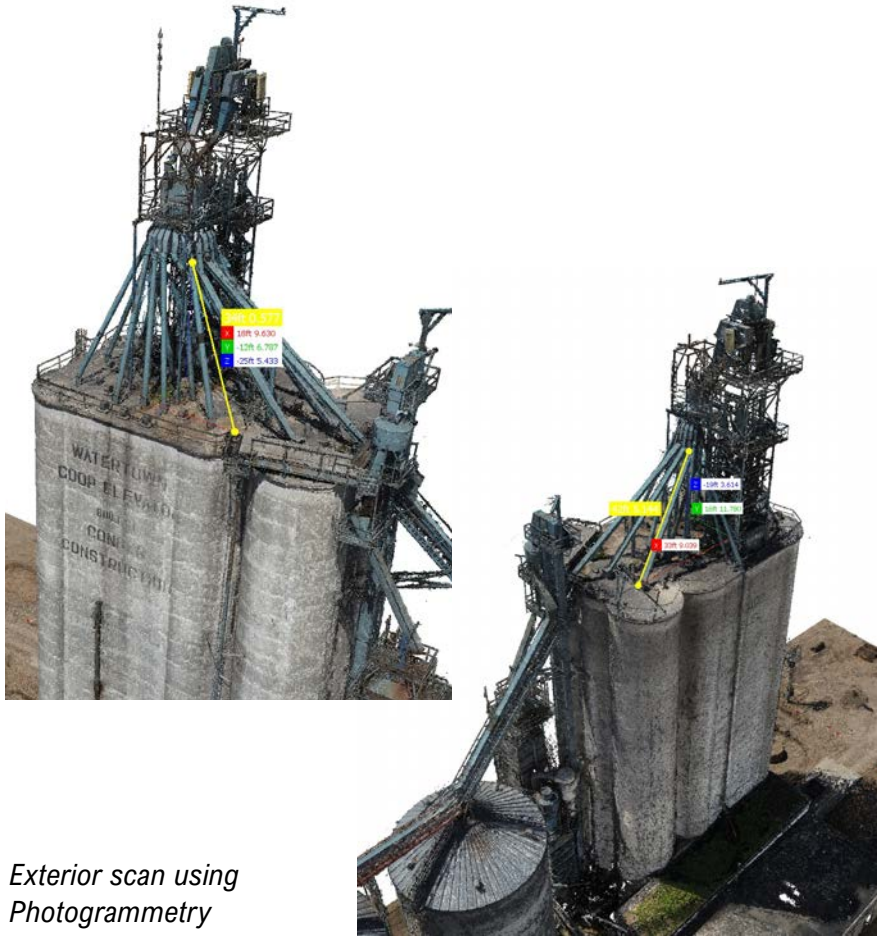

Exterior scan using Photogrammetry

Owner Advantages

- Facility Data readily available for:
  - planning & design
  - records & documentation
  - Insurance & asset tracking
- Reduced need to expose facility workers to elements and hazards
- Share facility information with contractors

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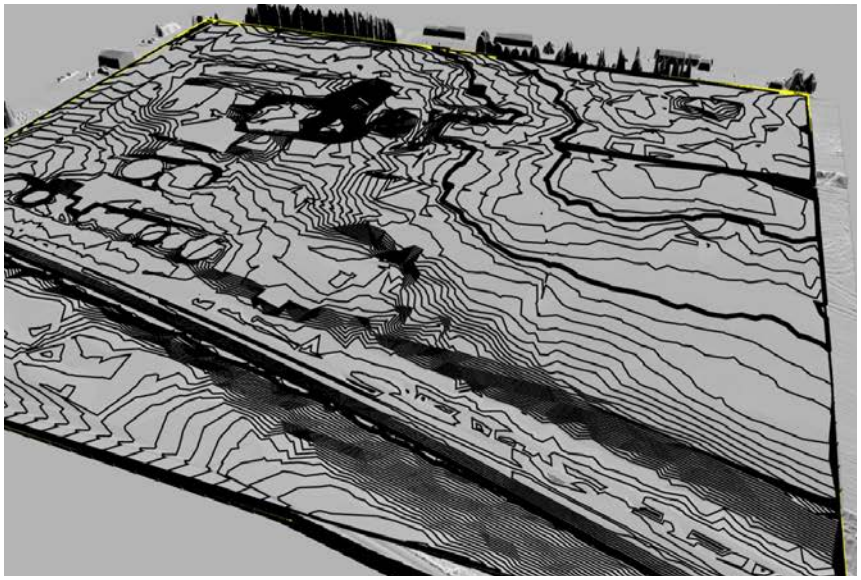
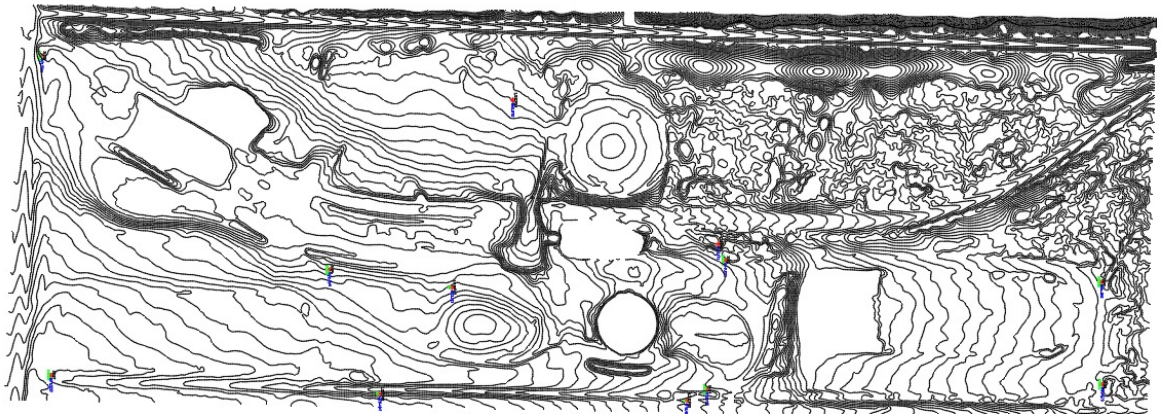


Topographic Data

- All points in scans are geo-located (UTM/lat-long/MGRS/etc)
  - centimeter level accuracy
- Coordinate site data in with Surveyors and Civil Engineers



- Perform accurate take-offs of cut/fill
- Layout Rail and Truck Corridors

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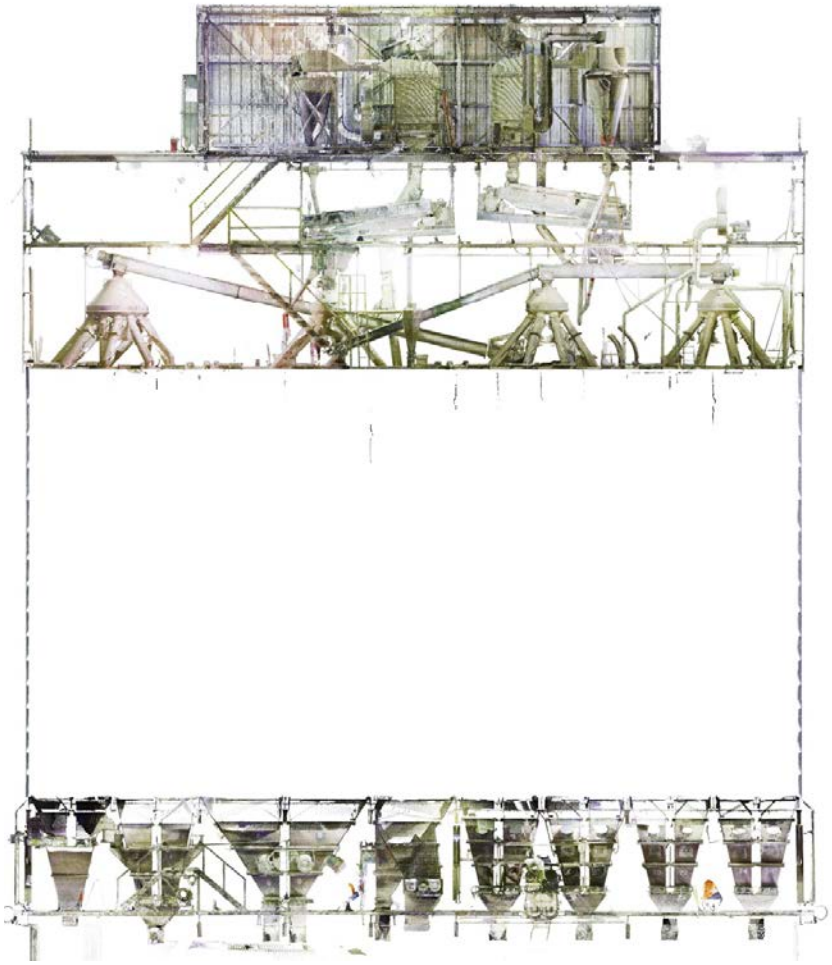
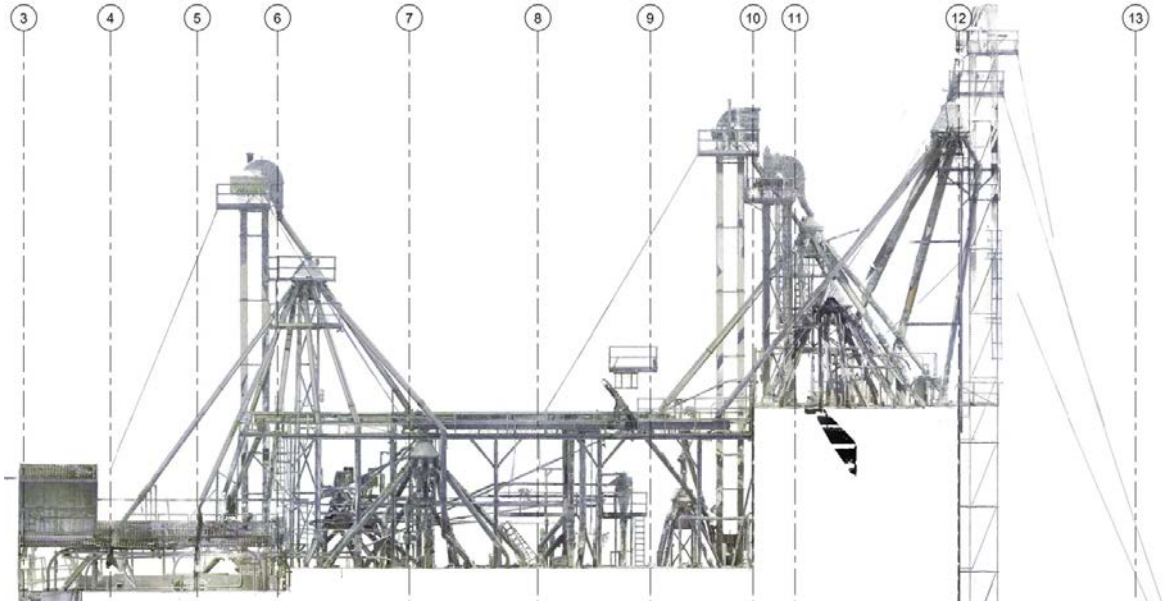


Scanning Equipment & Technology

- Traditional tripod mounted laser scanners
- Robot & Drone mounted Systems



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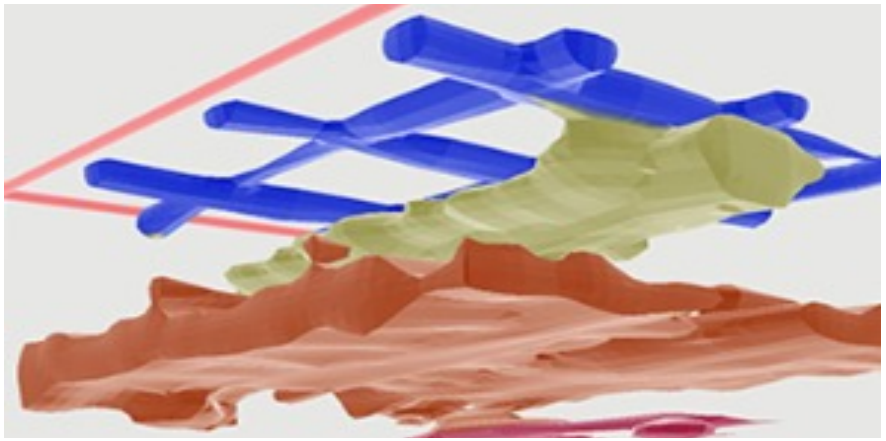

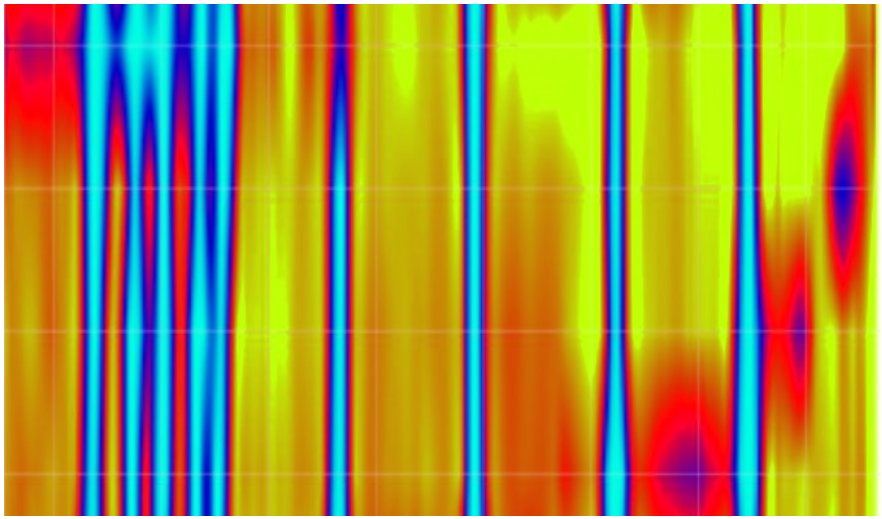

Scanning Equipment & Technology cont.

- Photogrammetry
  - Age old 3D tech still used today
- GPR (Ground Penetration Radar)
  - For use in rebar & void detection
- Ultrasonic Sensors
  - Used in void and rebar corrosion detection for concrete
- Multispectrum Cameras
  - For use in blight & drought detection as well as crop yield estimates

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SCANSTAR

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amber
AGRICULTURE

Finally. The no-cables way…

to manage grain like a pro.

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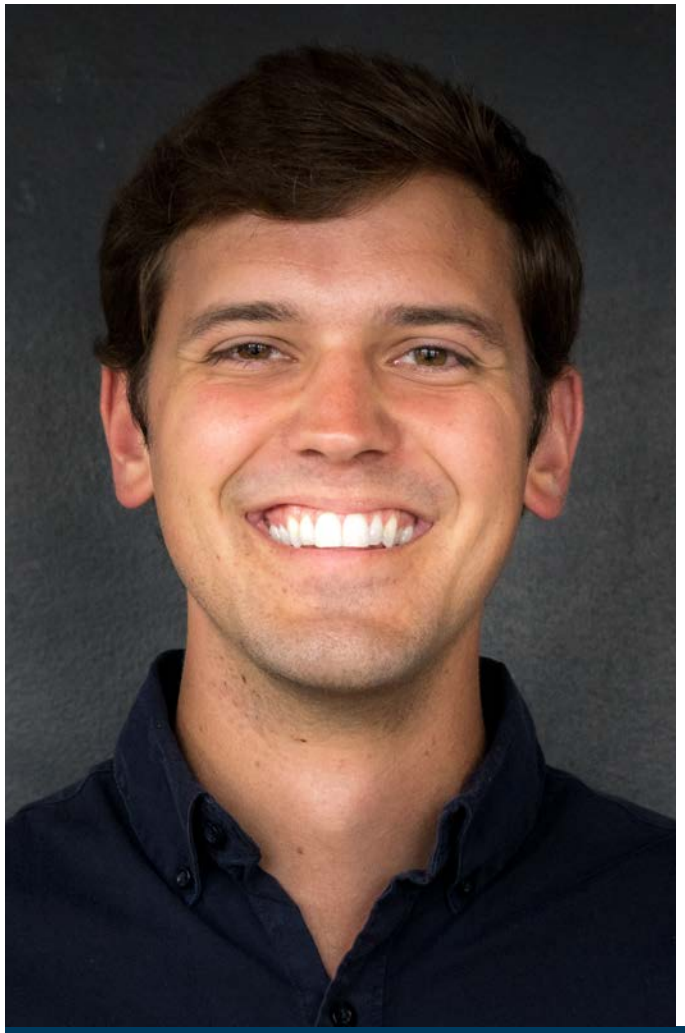

Lucas Frye

Amber Agriculture | www.amber.ag

Founder

amber AGRICULTURE

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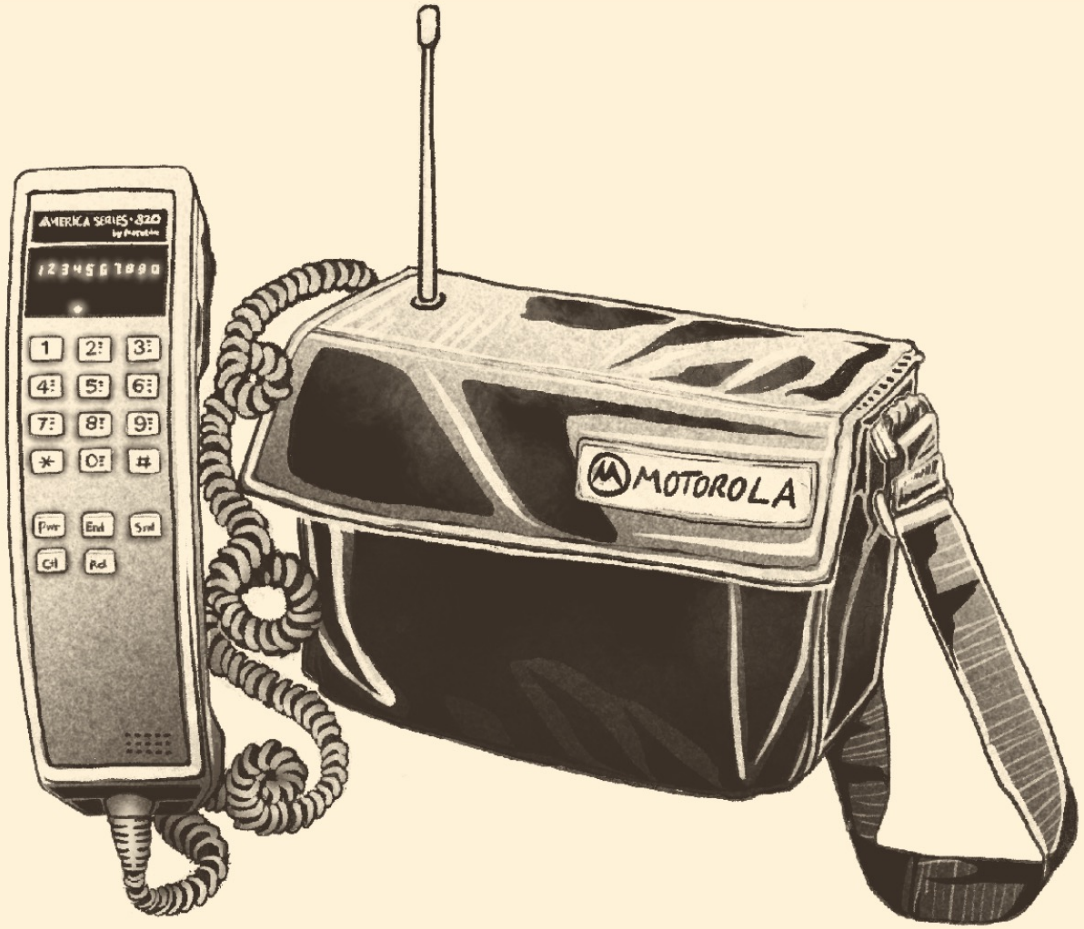

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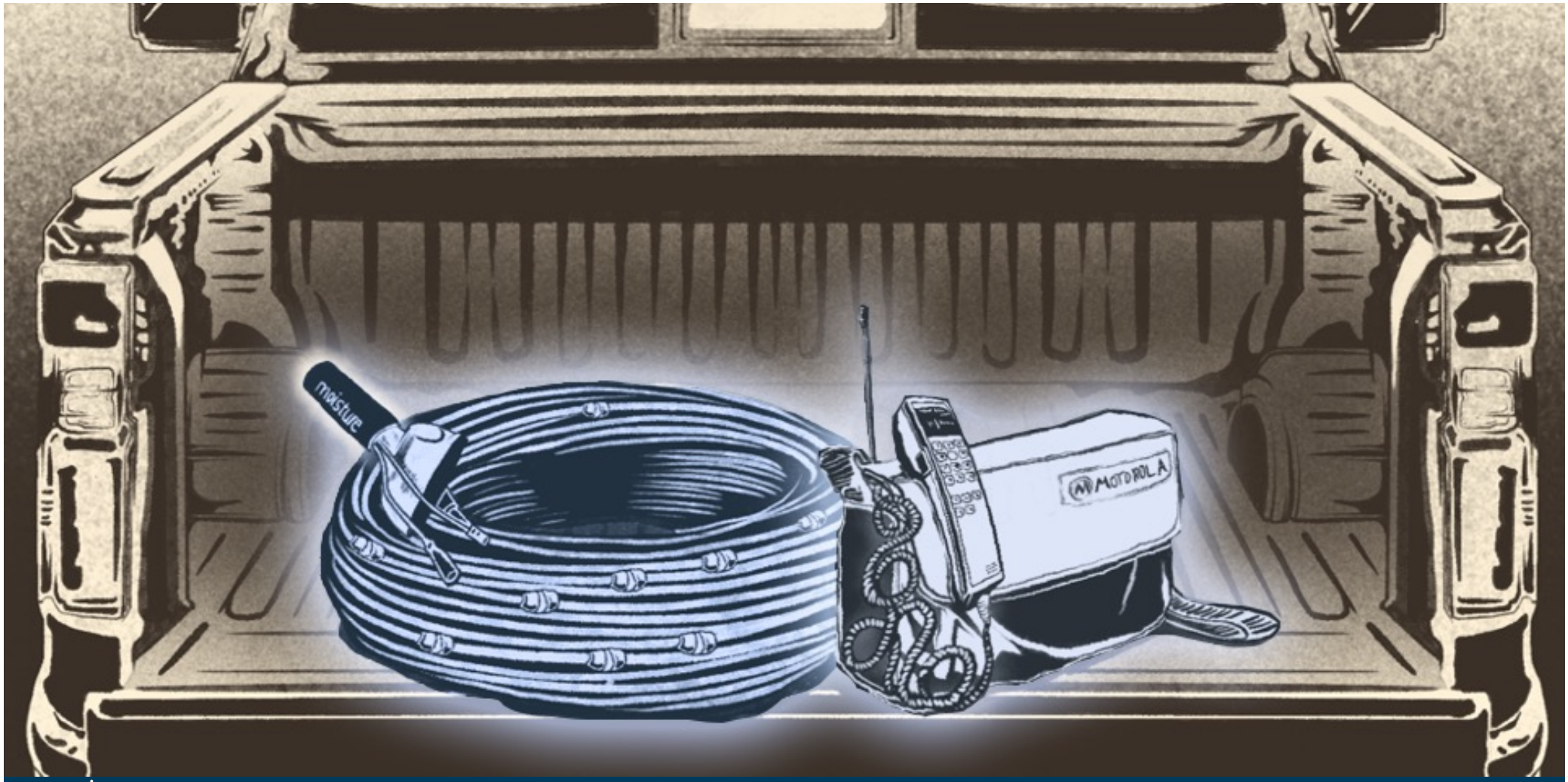

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ACE AIR

Finally. The no-cables way
to monitor grain
like a pro

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the earliest alert to grain tipping out of spec

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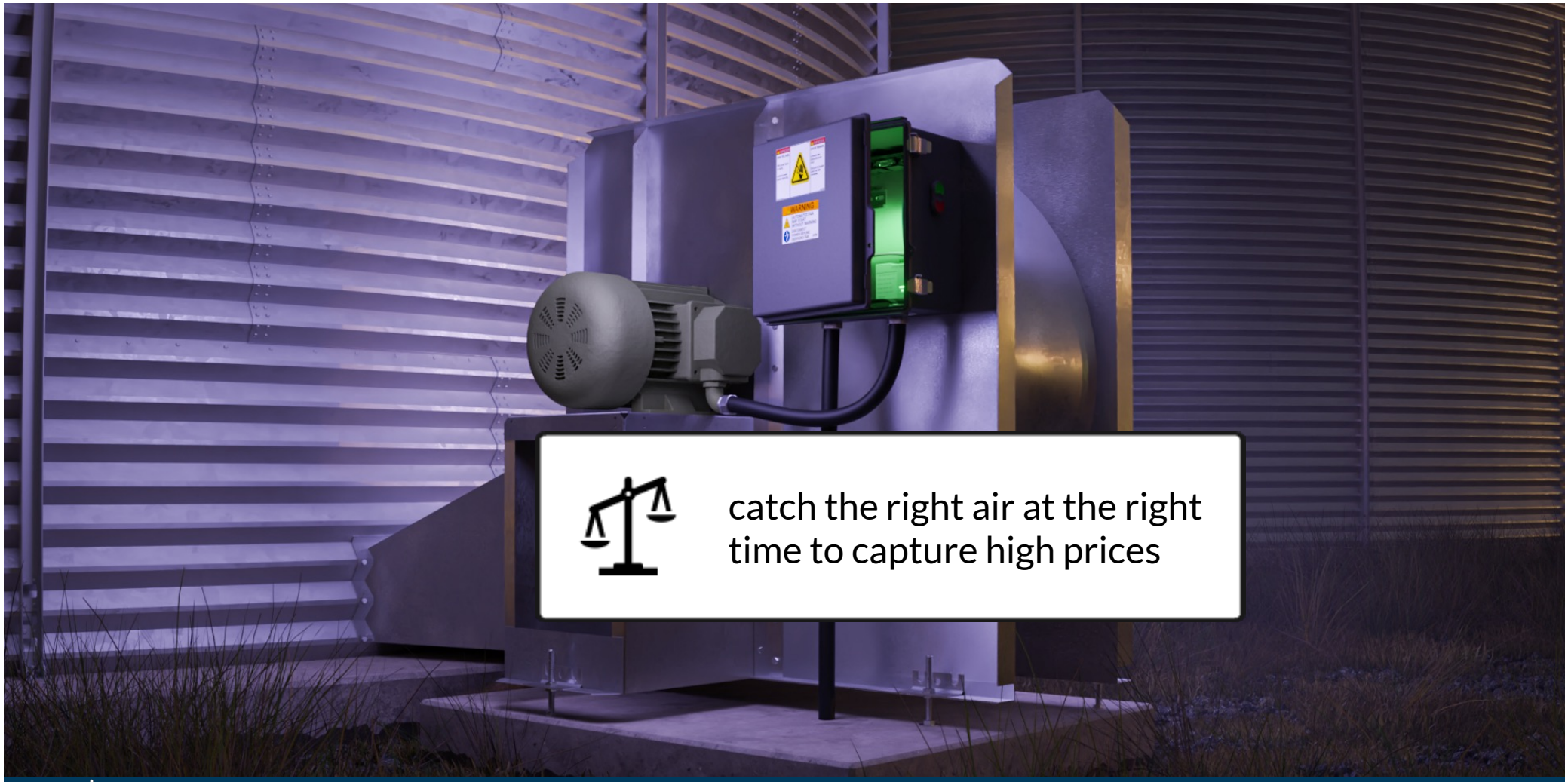

catch the right air at the right time to capture high prices

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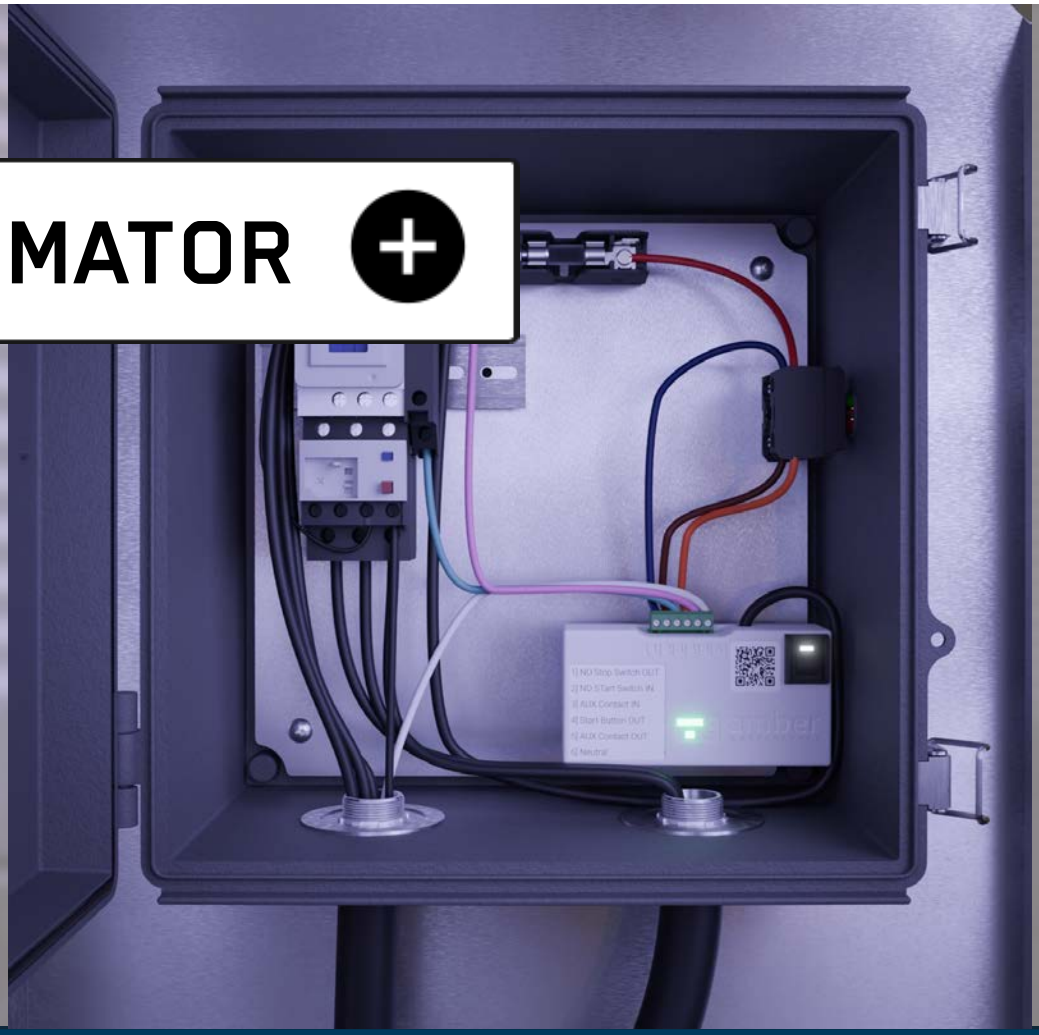
AUTOMATOR +



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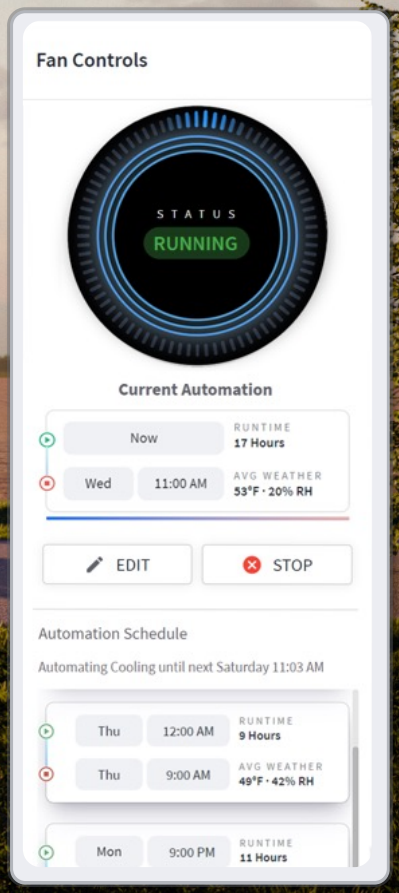
THE FUTURE

IS FINALLY HERE



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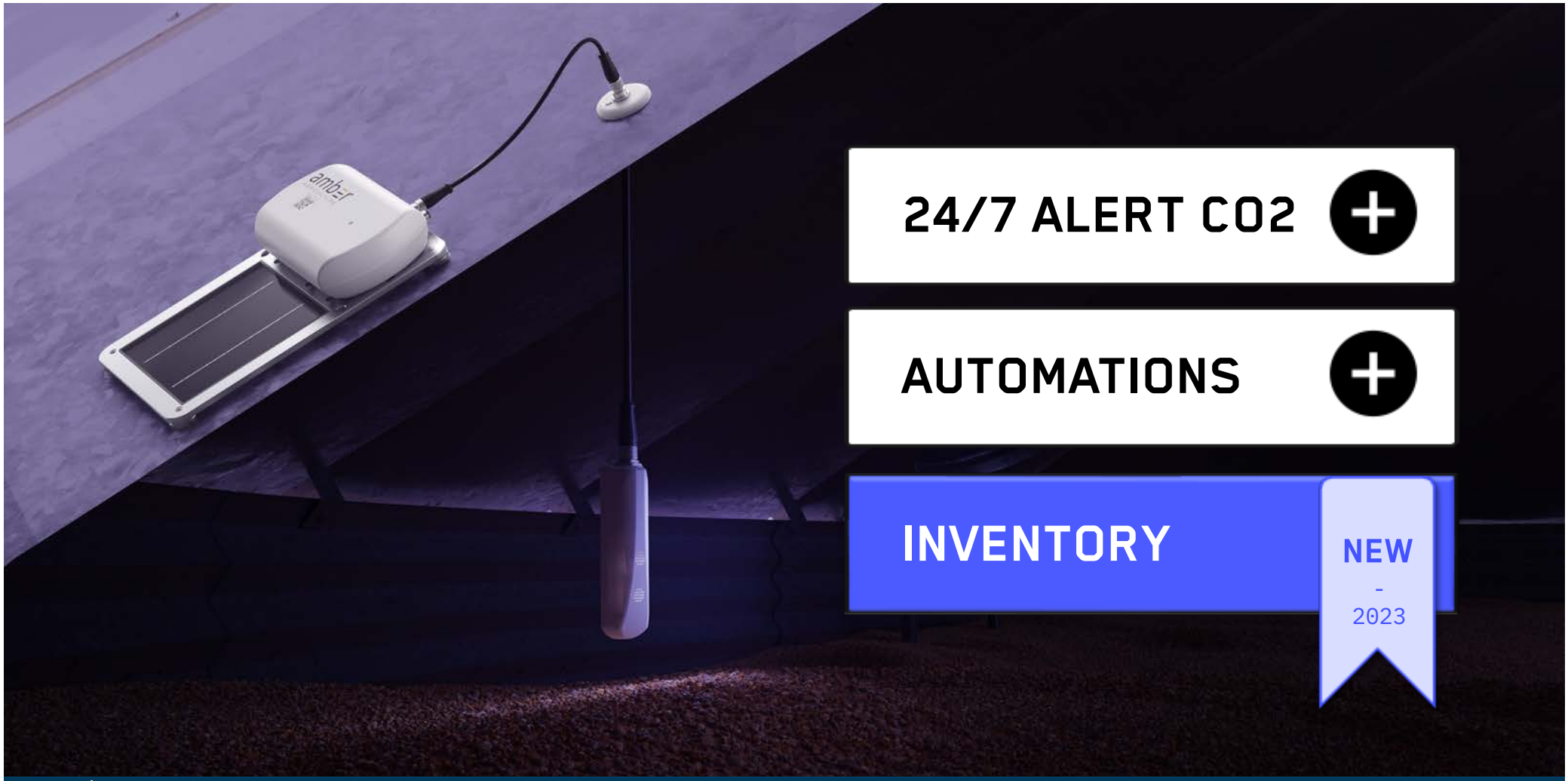

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GO HERE

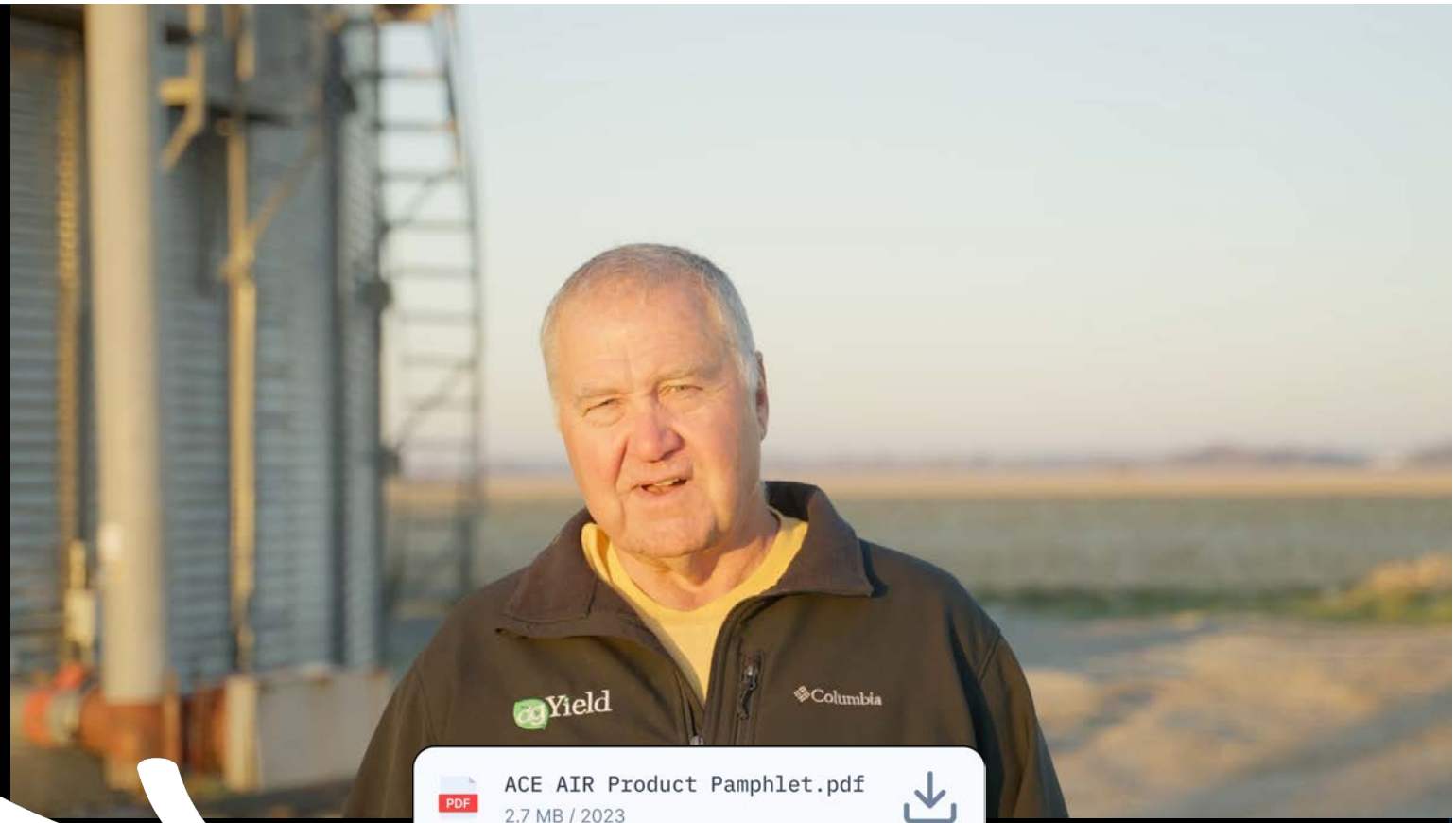
-

in next minute…

-

for Early Offer

(and full pamphlet)



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INTEGRATED CAMERA LOADOUT

EAI | EASY AUTOMATION INC.

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BRADY GAALSWYK

EASY AUTOMATION, INC.

OWNER & CO-PRESIDENT

EAI | EASY AUTOMATION INC.

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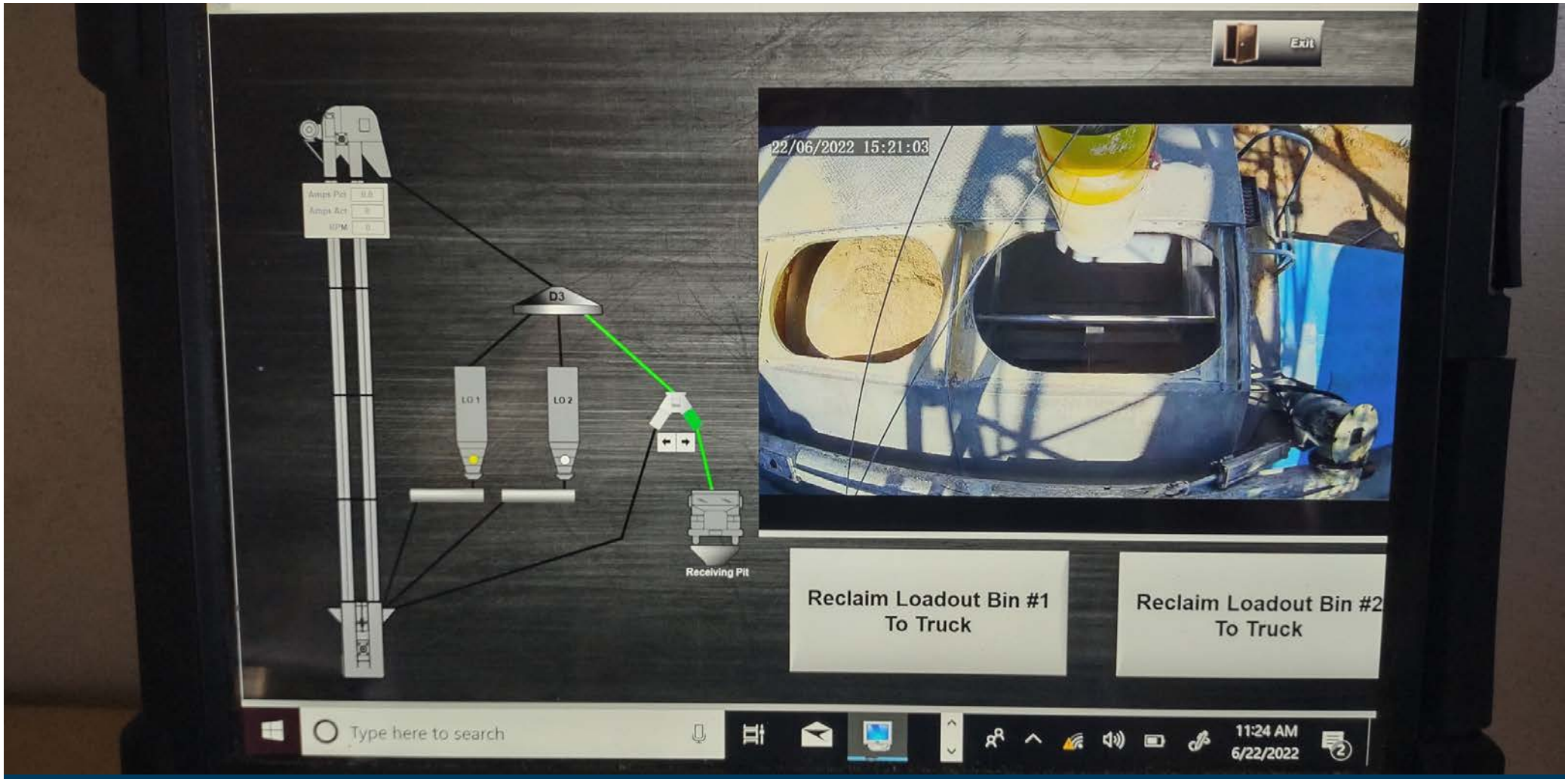

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Integrated Camera Loadout

BENEFITS & PURPOSE

- Reduce the # of people needed to run a facility
- Creates enhanced viewability of facility for operator
- Increase truck loadout numbers and decrease loadout wait times

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Integrated Camera Loadout

WHAT IT IS

- Installation of cameras at each loadout location that link with facility automation.
- Grain operators can view cameras and control loadout gates remotely via cameras and automation.
- Truck drivers can load themselves out via a tablet without having to leave their seat.

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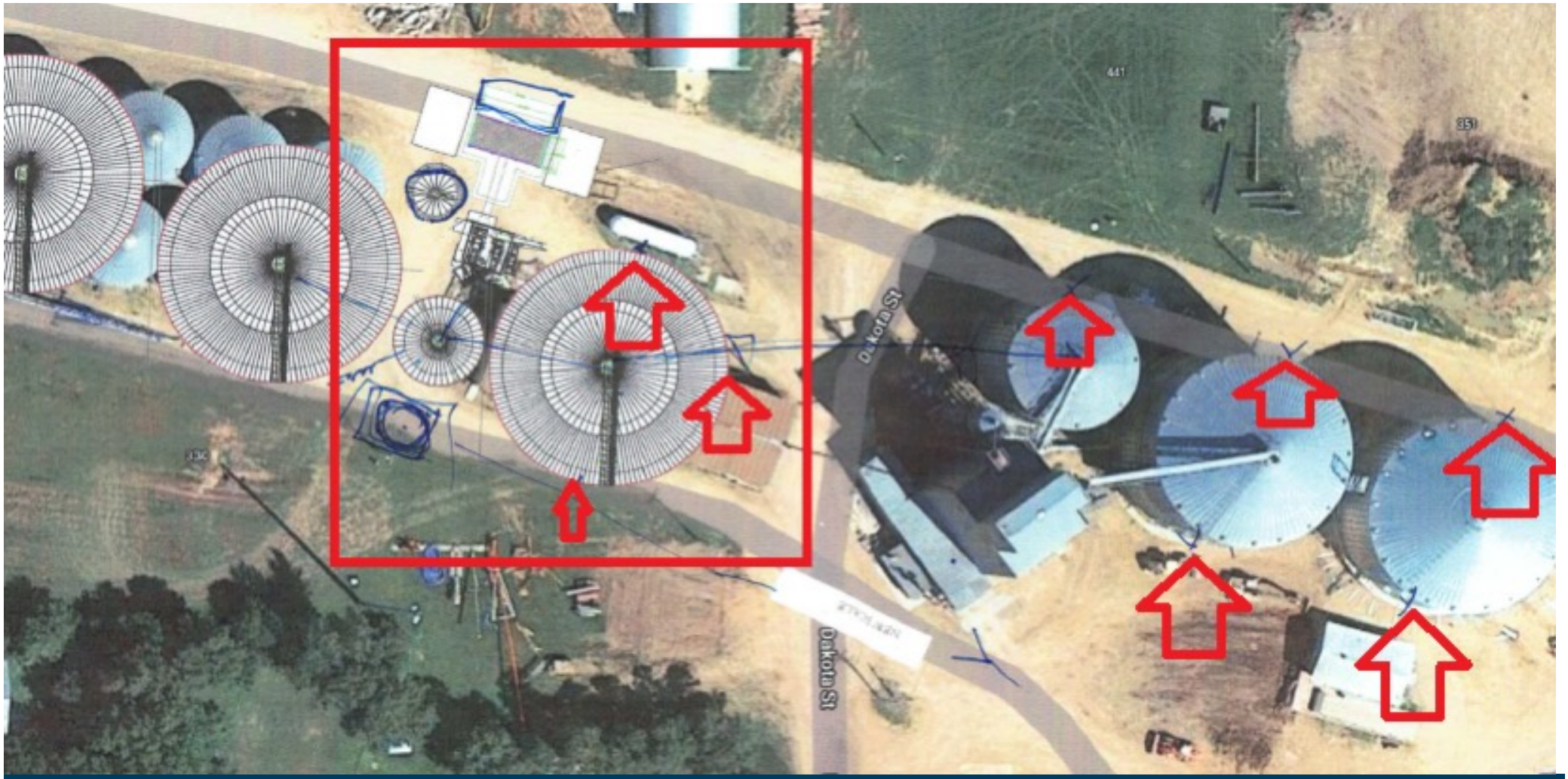

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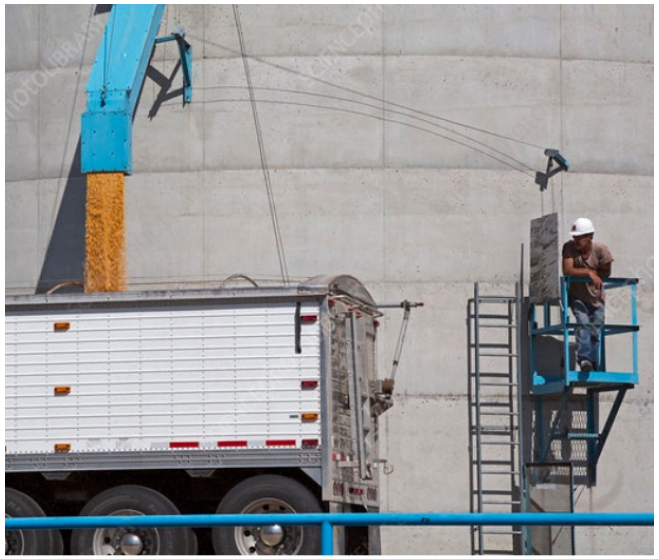
Integrated Camera Loadout

SAFETY & EFFICIENCY BENEFITS

- Reduces the # of people needed to run receiving and loadout at a facility
- Reduces the # of times an operator must climb ladders to open gates and watch loading trucks
- Reduces the # of times a driver must leave their truck, reducing risk for cross contamination
- Increases the # of trucks that can be loaded in a day



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Integrated Camera Loadout

INTEGRATION IN AUTOMATION

- Integrated Camera Loadout is just one available feature of Easy Automation's complete Grain Handling Controls and Automation
- Other features include:
  - Control of receiving and reclaim equipment
  - Hazard monitoring sensors and devices
  - Interfacing to dryers
  - Equipment maintenance timers

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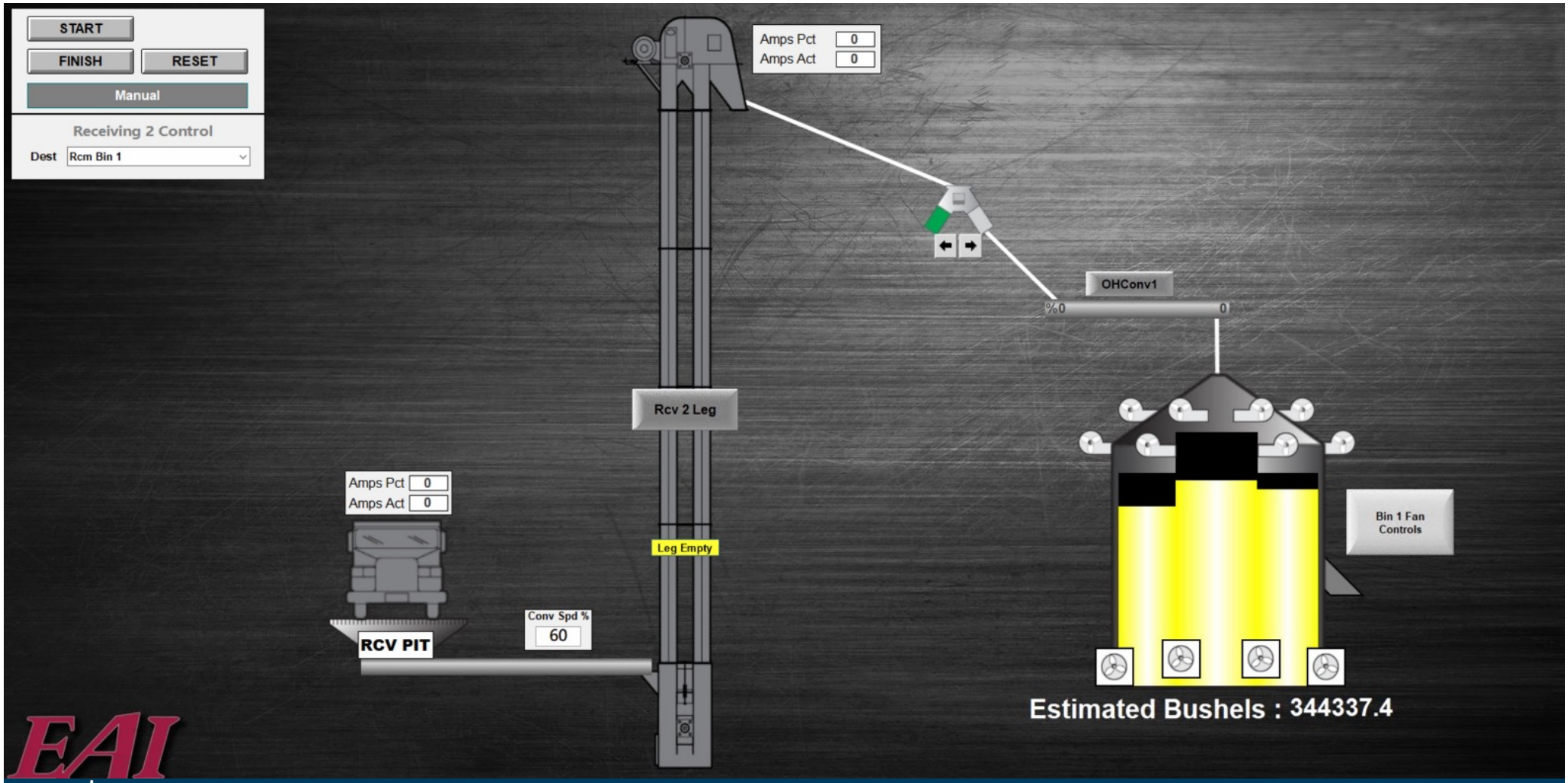

EAI

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EAI | EASY AUTOMATION INC.

NexGen Feed Mill Platform

NexGen Agronomy Platform

NexGen Grain Platform

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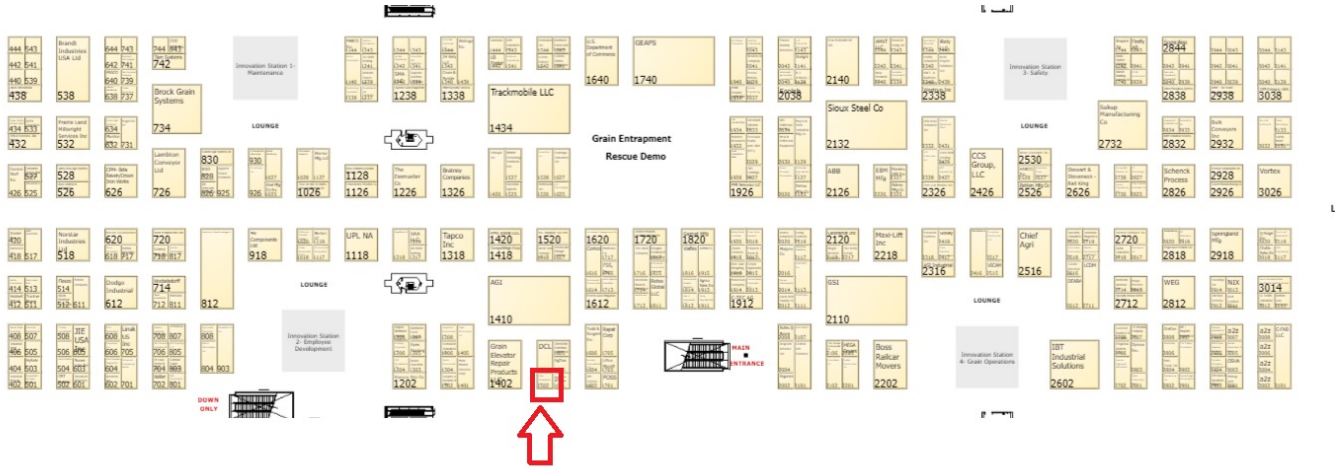
STOP BY BOOTH 1502 AND SAY HI!



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Small Changes...Big Impact!

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Utility Bills – Big Impact?

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Tim Nelson

KC Energy, LLC

President

KC ENERGY

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Evergy Kansas Central service area

CURRENT CHARGES

Billing Factors			
Rate code (See Definitions)	WCSGS	WCSGS	WCMGS
Meter #/Service ID #	40670588	40536449	40666174
Billing period	06/07/22 - 07/07/22	06/07/22 - 07/07/22	06/07/22 - 07/07/22
Billing days	30	30	30
Present meter read	01692	06092	27759
Previous meter read	01612	06047	26872
Billing multiplier	400	40	160
Energy use kWh	31,804.4000	1,802.1200	141,855.6900
Actual demand kW	90.0800	8.6240	352.8960
Power factor %	69.2994	51.1854	81.9875
Adjusted demand kW	116.9880	8.6240	387.3839
Summer peak kW	-	-	399.2914
50% of summer peak kW	-	-	199.6457
Peak demand month			September 2021
Tariff minimum demand kW	-	-	200
Billing demand kW	116.9880	8.6240	387.3839
Cost of fuel per kWh	0.043956	0.043956	0.043956
Charges			
Basic service fee	$22.73	$22.73	$118.42
Energy use	1,545.84	107.89	2,092.66
Demand	958.62	31.02	6,256.25
Fuel used in power generation	1,397.99	79.21	6,235.41
Property tax surcharge	51.84	2.94	231.22
Transmission	567.07	32.13	2,264.60
Energy efficiency	6.93	0.39	30.92
Total current charges	**$4,551.02**	**$276.31**	**$17,229.48**

RATE CODES & DEFINITIONS

WCMGS - Medium General Service

WCSGS - Small General Service

Definition of terms available at www.Evergy.com/BillDefinitions

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Sales Tax Exemptions

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SUMMARY

Previous balance	$9,195.54
Payments - **Thank you**	-9,195.54
Balance forward	0.00
Current charges	8,179.78
City franchise fee	408.99
Sales tax	772.99
Total due by December 8, 2022	**$9,361.76**

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Lighting Retrofits

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Power Factor Correction

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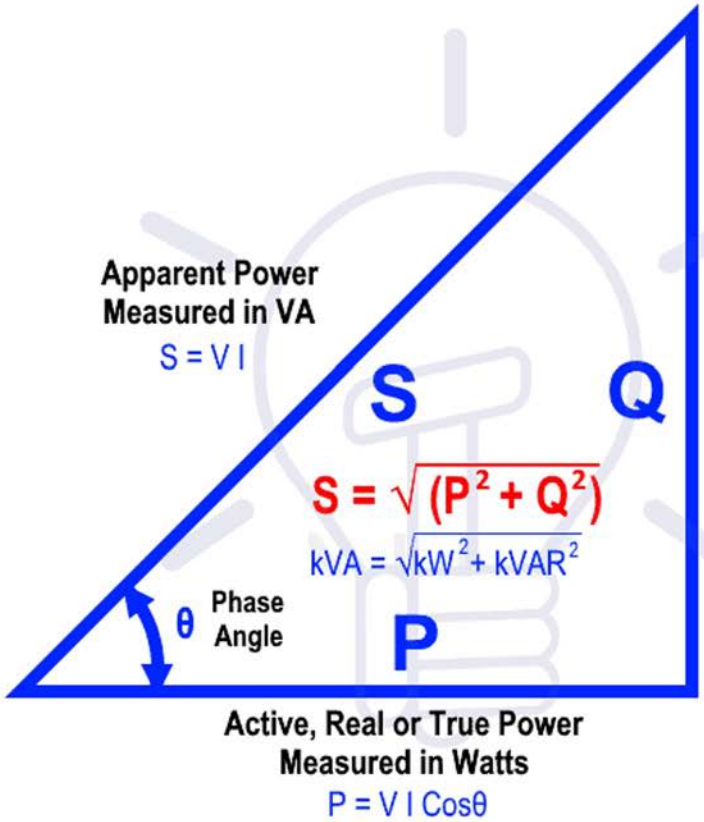
Power Triangle & Power Factor



Reactive Power
Measured in VAR
$Q = V\,I\,\sin\theta$

$$P = VI\cos\theta$$

$$\cos\theta = \frac{P}{V\,I}$$

$$\cos\theta = \frac{kW}{kVA}$$

$$\cos\theta = \frac{\text{True Power}}{\text{Apparent Power}}$$

$$\cos\theta = \frac{R}{Z}$$

$$\cos\theta = \frac{kW}{kVA} = \text{Power Factor}$$

$$\text{Power Factor} = \frac{\text{Active Power}}{\text{Reactive Power}}$$

www.electricaltechnology.org

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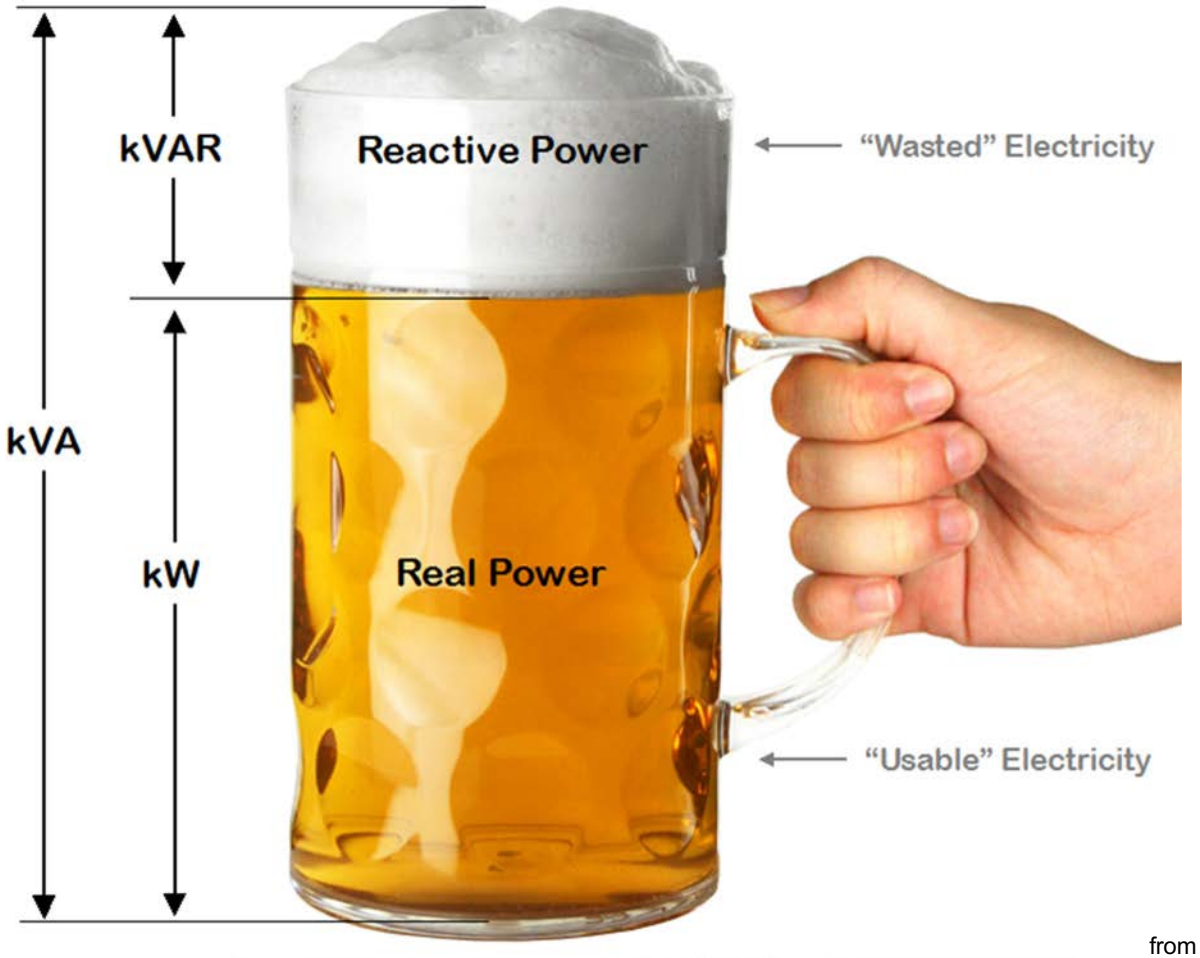

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How to Build a Training Center

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Scott Biel

MKC

Director of Safety

MKC Shared growth. Shared success.

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How to Build a Training Center

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Identify Location

- Under utilized building
- Build new
- Central location

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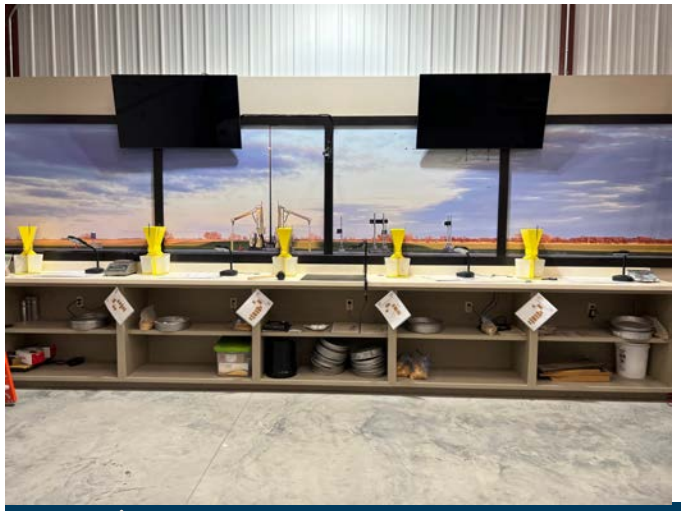

Identify Needs

- Safety
- Operations
- Meeting Space

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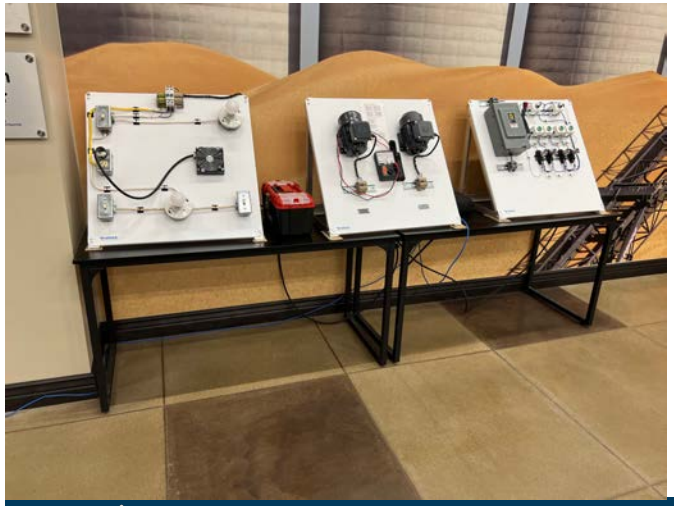
Acquire Exhibits

- Worn Examples
- Build Exhibits



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If Only

If Only LLC

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Dawn Chisholm

If Only LLC

Safety and Motivational Speaker

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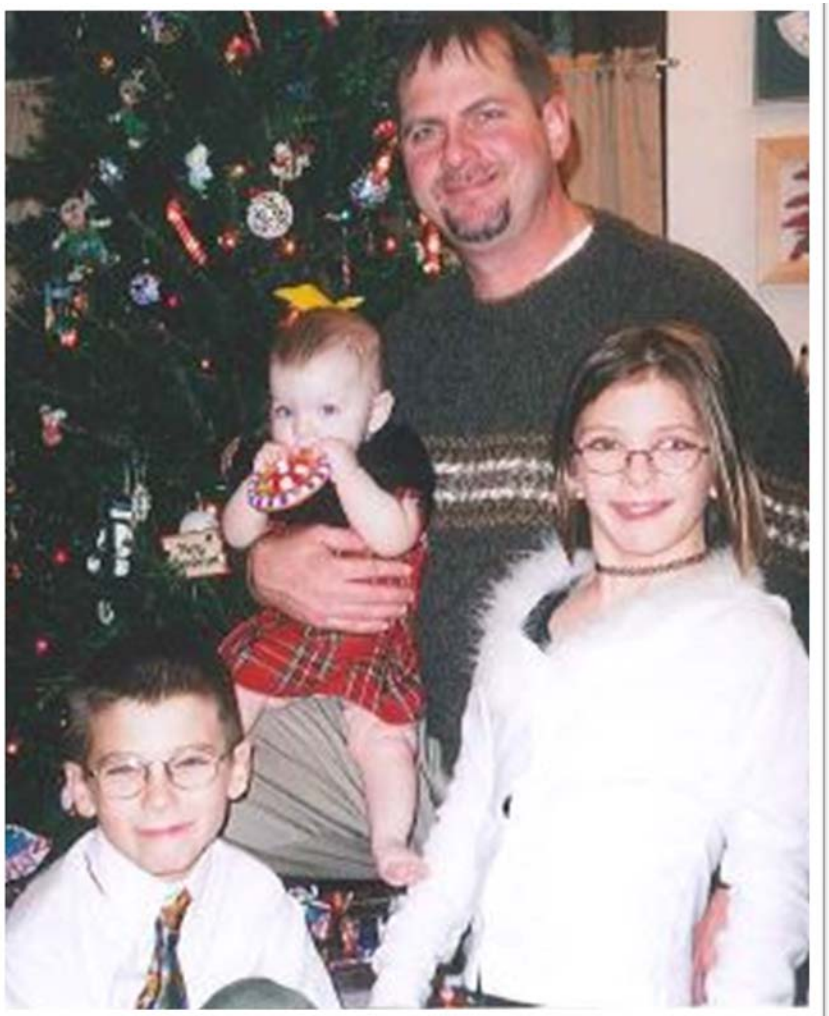

Christmas 2002

- The last picture our three children; Sara, Alex, and Anna got to have with their dad.

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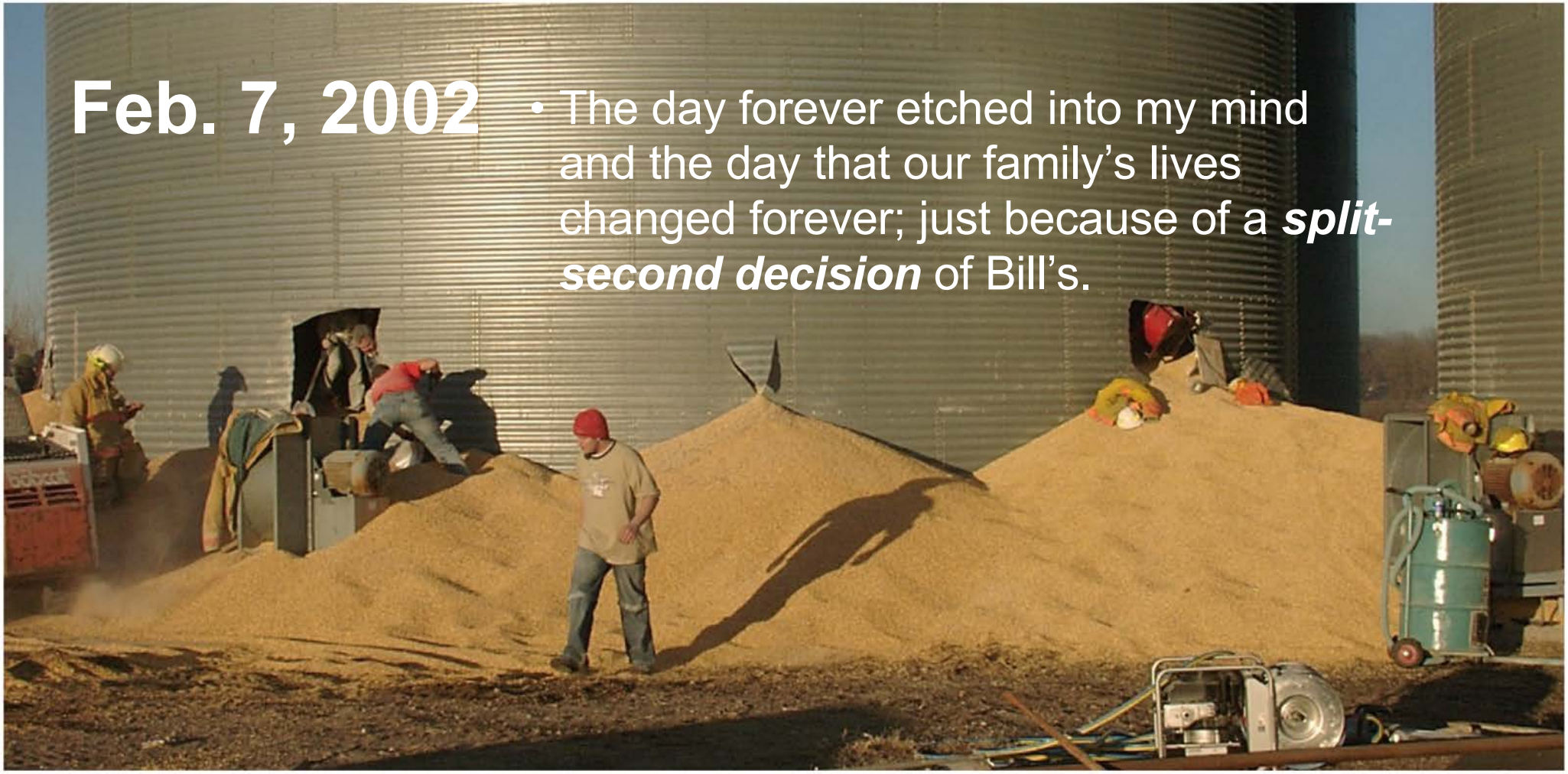
Feb. 7, 2002

- The day forever etched into my mind and the day that our family's lives changed forever; just because of a ***split-second decision*** of Bill's.



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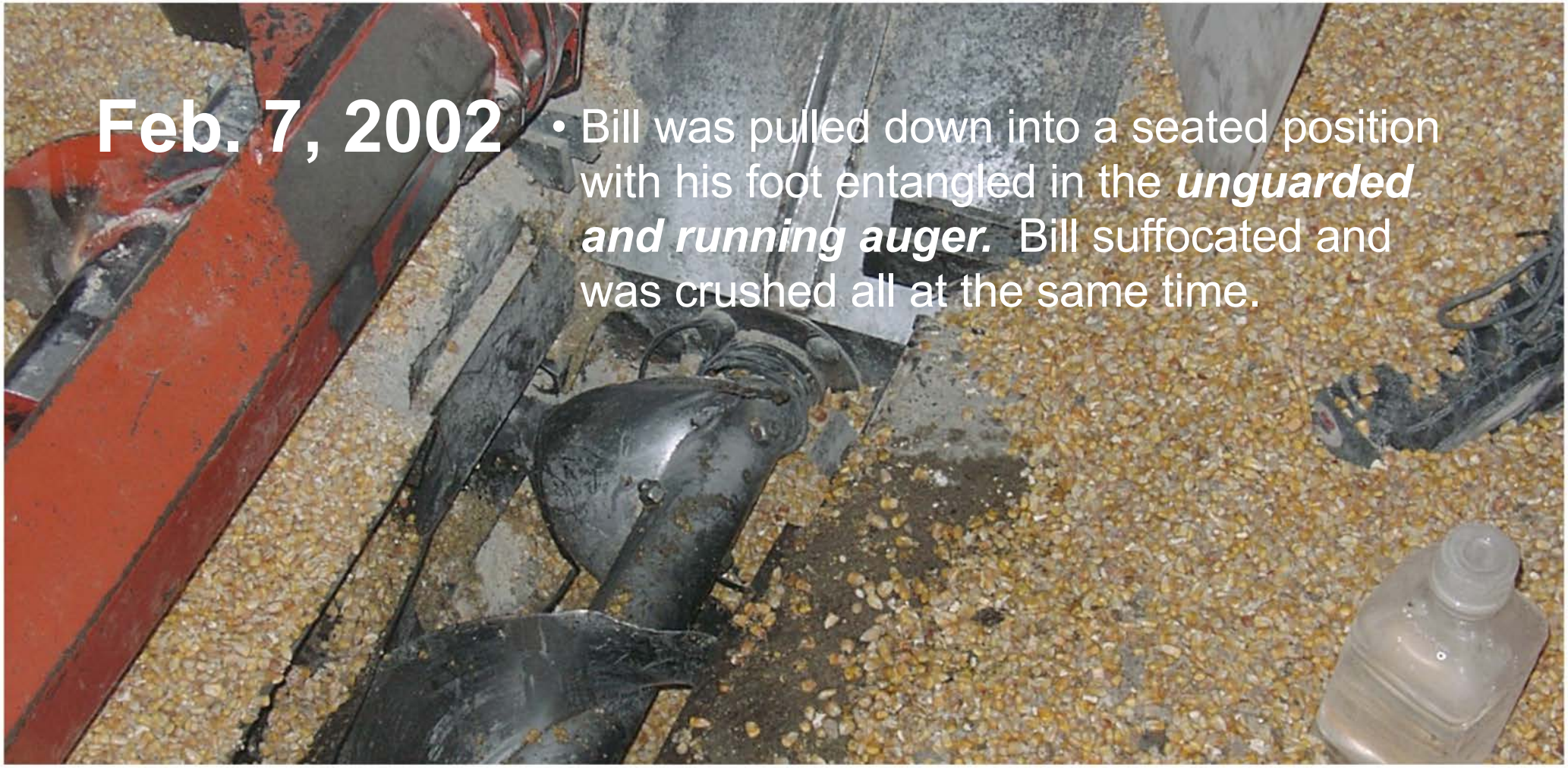

Feb. 7, 2002

- Bill was pulled down into a seated position with his foot entangled in the ***unguarded and running auger.*** Bill suffocated and was crushed all at the same time.

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- This is how our children must visit their dad now. Don't let this be how your family must visit you.

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Remember to “If Only…”

- To slow down.
- Be present.
- Think before you act.
- Reach out – ask for help for both your physical and mental health.
- Communicate with family, co-workers, and friends.
- Wear the correct P.P.E., keep safety guards and shields on equipment.
- **EVERYONE WANTS YOU TO COME HOME AT THE END OF THE DAY.**

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Thank You!

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- Raffle will be drawn at Closing Celebration, Tue 2/28

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