



**AQUACULTURE
RESEARCH
CORPORATION**

Asset Overview

2014

Property

- 105 East Russell Road, Tecumseh, MI 49286
- Tax #XTO-325-0251-00; LOT 25, Plat No. 6
- Assessed Value of \$133,800; based on Land and 6000sqft building, no personal property included
- Annual Tax ~\$4000/yr

Brownfield Teardown

Phase 3
Optional Low Cost/Free Land

Fire Station
City Inspector

Bank Back
Office Operations

Phase 2
Aquaponics
Or
Grow-Out

Optional
Expand

Phase 1
6000sqft
15,000gal

Phase 2
Aquaponics
Or
Grow-Out

S Evans St

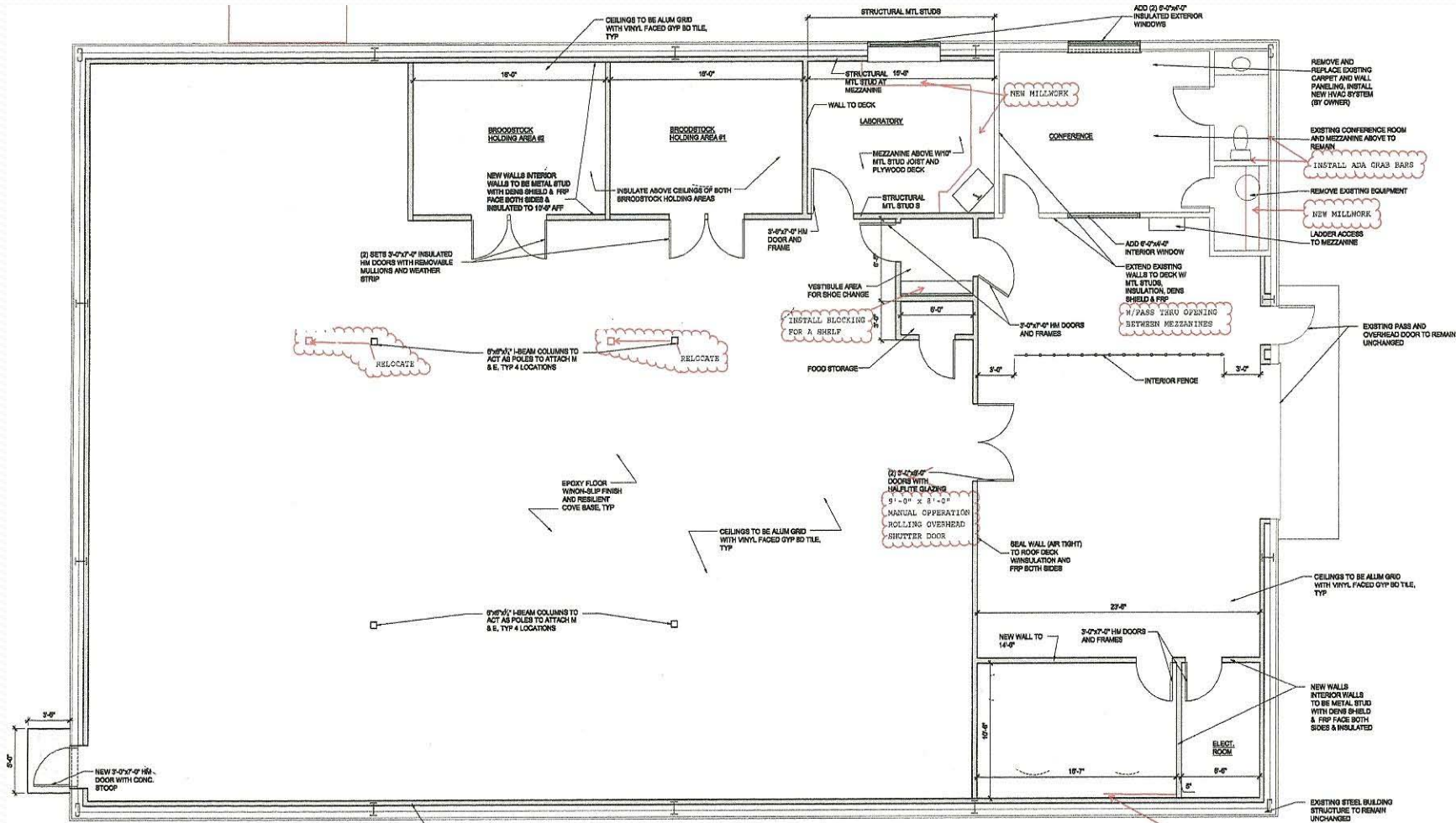
E Russell Rd

Property Improvements

- Phase I complete with 6000sqft steel building
- Phase II is possible expansion on existing property, including extension of the 6000sqft building
- Phase III is approximately 3 acres of land that is likely available. It is essentially landlocked and owner would likely gift the property; city would consider forgiving back taxes, in exchange for responsible paying in the future and maintenance (mowing) of the property. Some exchange with fire department is possible to improve ARC site dimensions.

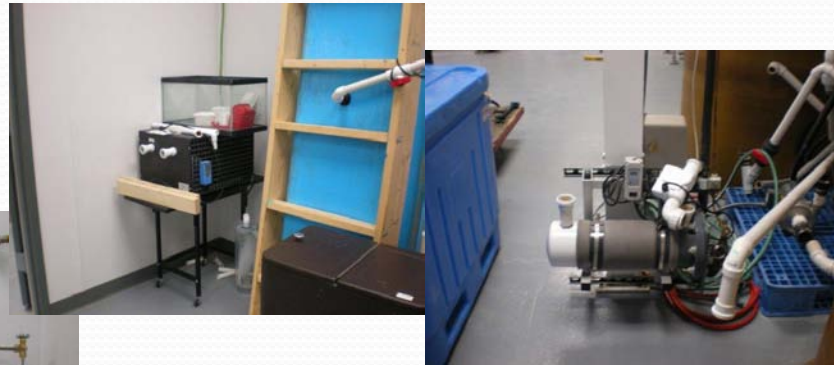
Building

- 6000ft², steel frame, concrete floor
- 4500ft² conditioned space, 1500ft² utility
 - Conference Room, Kitchen, Bath, Mechanical and Electrical rooms, Mezzanine storage
 - Two independent light controlled Breeding rooms
 - One Laboratory/Office space
- 208V-400A Three Phase electrical service
- 85kW Natural Gas Generator
- Central Oxygen and Water distribution systems
- \$500,000 in Fixed Asset investment in building improvements

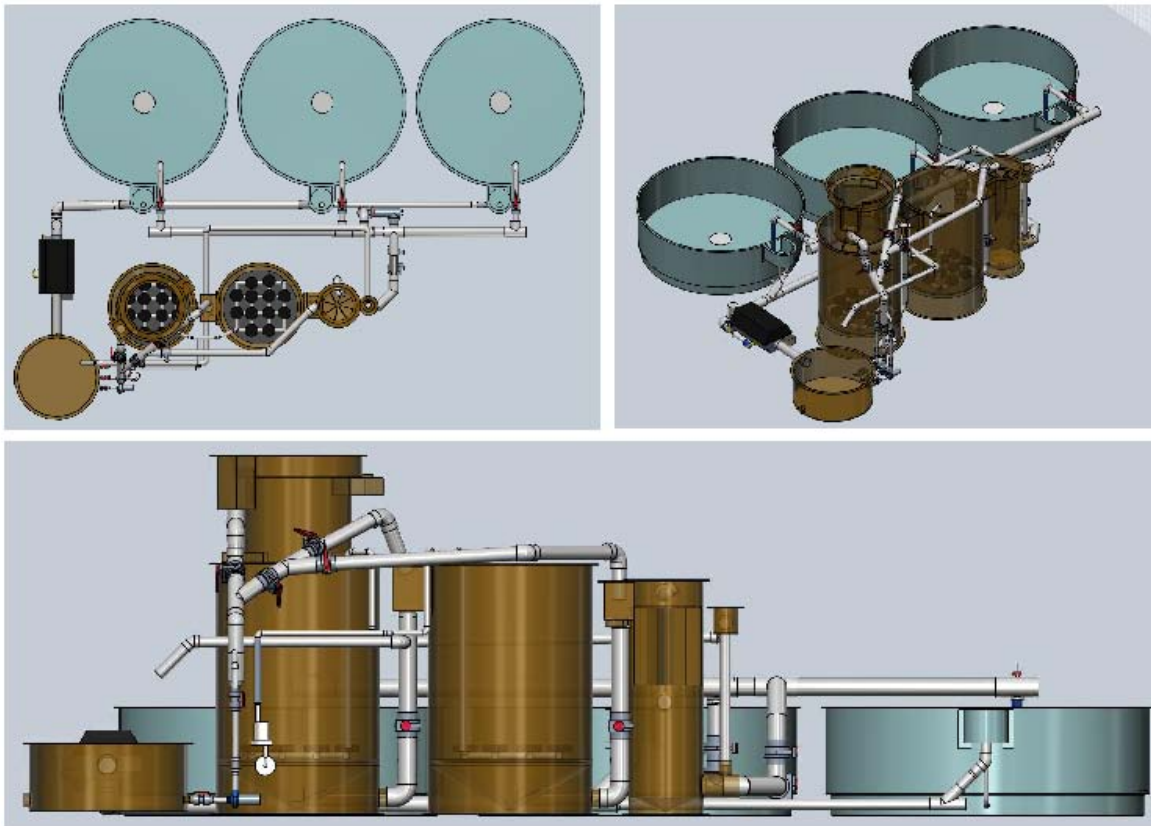


Equipment

- \$250,000 in value (includes equip, install, labor)
- 15,000gallon, 600gpm integrated culture system
- Independent Tanks: 1x1000gal, 2x300gal, 2x150gal, 1x220gal, 1x120gal, 1x50gal, 1x20gal
- Independent Filters: Polygeyser bead filters 1xDF6, 2xDF3, 1xBBF; 2xAqua Ultima II filters
- 1xradial flow settling basin
- 1xcustom Low Head Oxygenator / CO₂ stripper/UV
- 1xUMI HXF 1hp remote chiller, 1xUMI 1/3hp chiller
- 1xAquatic Ecosystem rotifer system (450Liter)
- 1xcustom 100gpm O₂ cone system



15,000 Gallon System



WMT Vertical Design

Culture tanks	3x5000 gal	Fiberglass
Drum Filter	60 Micron	HDF-802
Sump	500 gal	Fiberglass
Pumps	3x285 gpm	2hp each
CO ₂	12 ft ²	45 gpm/ft ²
Biofilter	2x2100 gal	710 mg/hr TAN flush
Blower	1x4hp	Min 62 scfm
LHO	423 gal	.8m HRT
UV	4 Lamp 320W	UltraAqua

15,000 Gallon System

<u>Culture Tank 3x5000</u>	<u>15,000 gal</u>
System Flow Rate	585 gpm
Max Tank HRT	30 min
Max Feed/Day	111 lb
Target Max Biomass	5000 lb

Design Temp	23 C
<i>Actual Temp</i>	<i>16-22 C</i>
Design pH	7.3
<i>Actual pH</i>	<i>7.8</i>
<i>Actual Hardness</i>	<i>>320 mg/L</i>
Design Max TAN	2.1 mg/L
Design Max NO3	300 mg/L
Design Max CO2	20 mg/L
Design Max TSS	20 mg/L
Design Min O2	7.5 mg/L
Design New Water	1.5 gpm
<i>Actual Water</i>	<i>3.1 gpm</i>

<u>Average Cost Rates</u>	
Water	0.58 \$/1000gal
Electric	0.11 \$/kWh
Gas	9.30 \$/Mcf
Feed	0.50 \$/lb delivered
O2	0.06 \$/scf delivered

<u>Typical Operating Cost</u>	
Water	800 \$/month
Elec/Gas	2,500 \$/month
O2	400 \$/month
Prop Tax	333 \$/month

15,000 Gallon System

Culture Tank	15'Ø x 4' w/ dual drain - sidewall drain box and full conical bottom drain with screen - to be set on elevated earthen base. Glass in place tank - all FRP materials provided. Tank weight = 1121 lbs	3
Drum Filter	802-1G -304ss - 60um - 3PH	1
Drum Crating	Full crate for 802-1G	1
Drum Stand	For 801 - assumed height of 18" - structural FRP	1
HPRS	For 802	1
Pump Sump	7'Ø x 3.5' w/ inlet, 3x pump suction and overflow fitting	1
Main System Pumps	Goulds end suction - 2HP - 3PH - 60Hz. 2.5" x 2.5" connection. 2 on duty, 1 in standby.	3
CO2 Stripper	4'Ø x 4'-6" w/ Inline Fan and inlet box - mounts over Bio1	1
Vertical IMF Biofilter	7'Ø x 11.5' Vert-IMF w/ air grid and outlet screening	2
Media	FT3 WMT - MB3	225
Biofilter Blower	4.0 Hp (~3.4 @ DP) - 65 cfm @ ~110" Head w/ Acc. Acc include inlet filter / silencer unit (outdoor rated) with dirty filter indicator, pressure relief valve, pressure gauge and Galv Tee assembly to mount PRV and pressure gauge. All other piping by others.	1
LHO/Sump	3'Ø x~ 10' Tall - Standard O2 unit with dist plate, overflow fitting, inlet and outlet gas fittings and overflow outlet assembly.	1
UV	550 gpm @ 40mJ dose rate at assumed UVT of 85%. Bulb lamp life rated to 16,000 hours. Polypropylene body.	1
Motor Control Panel	Centralized Motor Control Panel for control of Drum Filter, System pump(s) and blower	1
Secondary O2 Cone	18" O2 cone for cart mounting	1
O2 Cone Pump	2HP pump rated for 95 gpm @ 50'	1