Budgetary Proposal

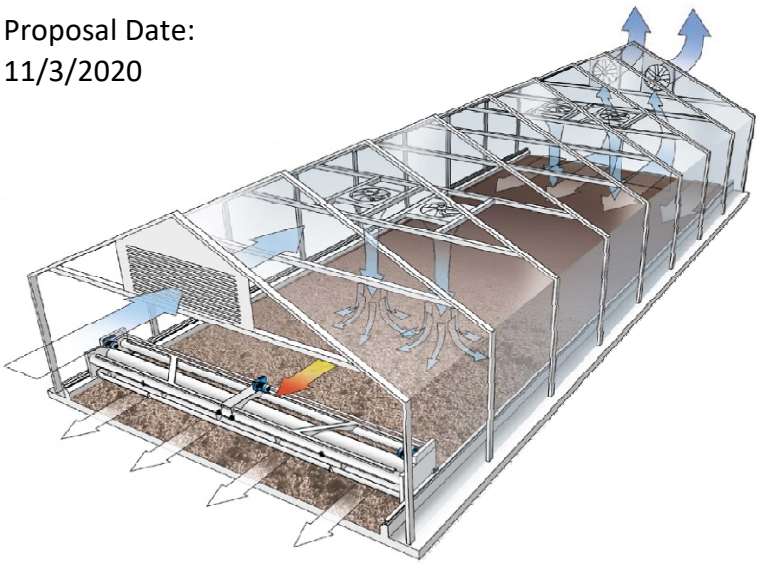
Project Name:
Fort Bragg, CA

Proposal Number:
460254

Equipment Type:
Solstice SRT 9

90% Product Dryness

Proposal Date:
11/3/2020



Huber Contacts:
John Lewis
Regional Sales Director - West
704-995-5451
John@hhusa.net

Represented by:
Matt Bentley
Goble Sampson Associates
(704) 650-7332
mbently@goblesampson.com

HUBER TECHNOLOGY
WASTE WATER Solutions

Huber Technology, Inc.

1009 Airlie Parkway
Denver, NC 28037

Phone: (704) 949-1010
Fax: (704) 949-1020

Solstice Design Summary

Fort Bragg, CA November 3, 2020

Sludge Characteristics:

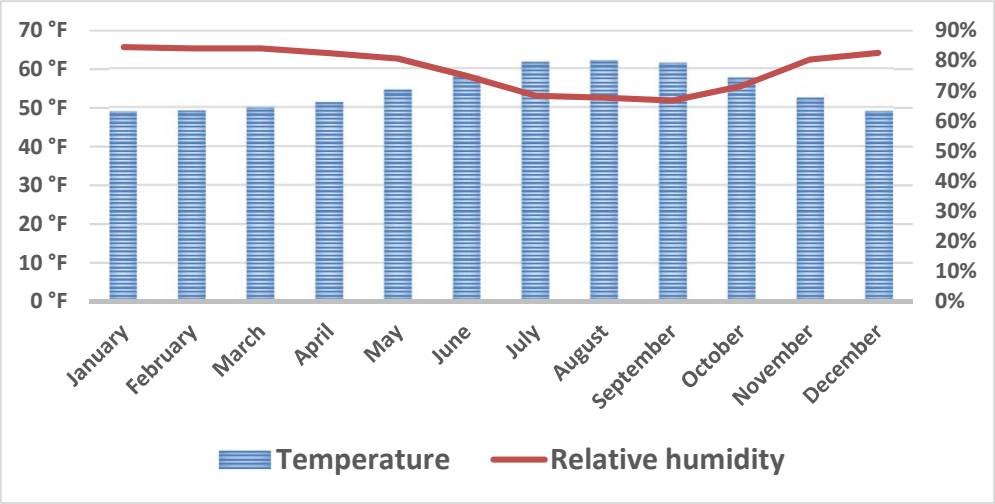
Upstream Process:	Activated Sludge with Secondary Clarifier
Digestion Process:	Aerobic Digester
Sludge Type:	Waste Activated Sludge
Sludge VSS:	Information not provided
Sludge Protein Content:	Information not provided

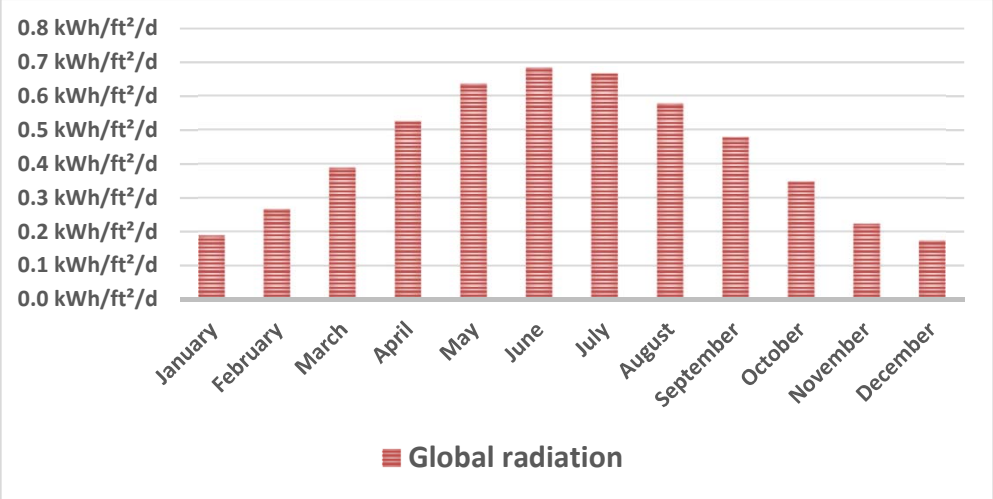
Project Design Parameters:

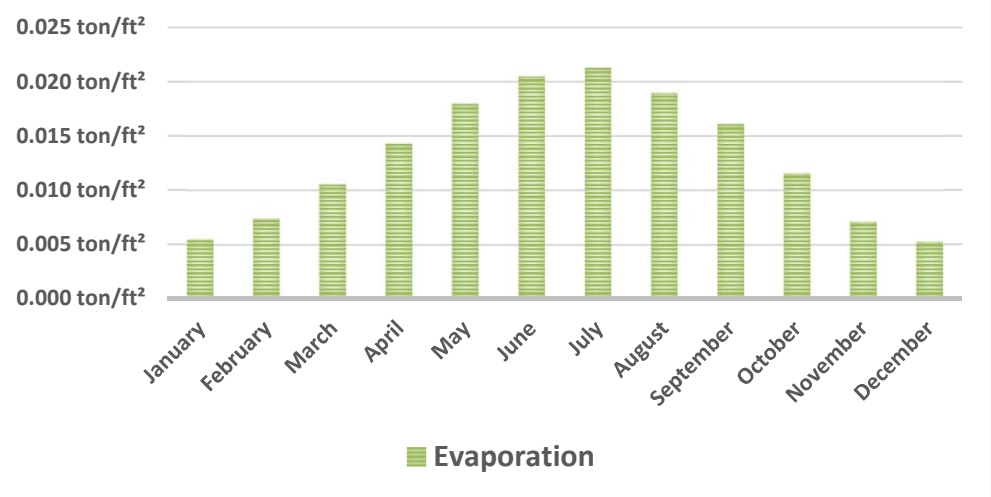
Sludge Feed Rate (given):	672 ton/yr	
Inlet Cake Concentration:	20%	
Calculated Sludge Loading Rate:	672 dry ton/yr	(600 dry tonne/yr)
	3,361 wet ton/yr	(2,700 wet tonne/yr)

	Temperatur	Relative Humidity	Global radiation	Complete	External Input	Evaporation
January	48.8 °F	84.5%	0.19 kWh/ft²/d	0.19 kWh/ft²/d		0.005 ton/ft²
February	49.1 °F	84.1%	0.26 kWh/ft²/d	0.26 kWh/ft²/d		0.007 ton/ft²
March	49.9 °F	84.1%	0.39 kWh/ft²/d	0.39 kWh/ft²/d		0.011 ton/ft²
April	51.3 °F	82.5%	0.52 kWh/ft²/d	0.52 kWh/ft²/d		0.014 ton/ft²
May	54.5 °F	80.7%	0.63 kWh/ft²/d	0.63 kWh/ft²/d		0.018 ton/ft²
June	58.1 °F	74.9%	0.68 kWh/ft²/d	0.68 kWh/ft²/d		0.020 ton/ft²
July	61.6 °F	68.3%	0.66 kWh/ft²/d	0.66 kWh/ft²/d		0.021 ton/ft²
August	62.0 °F	67.8%	0.58 kWh/ft²/d	0.58 kWh/ft²/d		0.019 ton/ft²
September	61.3 °F	66.8%	0.48 kWh/ft²/d	0.48 kWh/ft²/d		0.016 ton/ft²
October	57.5 °F	71.6%	0.35 kWh/ft²/d	0.35 kWh/ft²/d		0.012 ton/ft²
November	52.4 °F	80.3%	0.22 kWh/ft²/d	0.22 kWh/ft²/d		0.007 ton/ft²
December	48.9 °F	82.5%	0.17 kWh/ft²/d	0.17 kWh/ft²/d		0.005 ton/ft²
Average			**0.43 kWh/ft²/d**			**0.013 ton/ft²**
Annually			**156 kWh/ft²/a**			

HUBER Technology, Inc.
1009 Airlie Parkway, Denver, NC 28037
(704) 949-1010 - Fax (704) 949-1020 - huber@hhusa.net
www.huber-technology.com
A member of the HUBER Group







HUBER Technology, Inc.
1009 Airlie Parkway, Denver, NC 28037
(704) 949-1010 - Fax (704) 949-1020 - huber@hhusa.net
www.huber-technology.com
A member of the HUBER Group

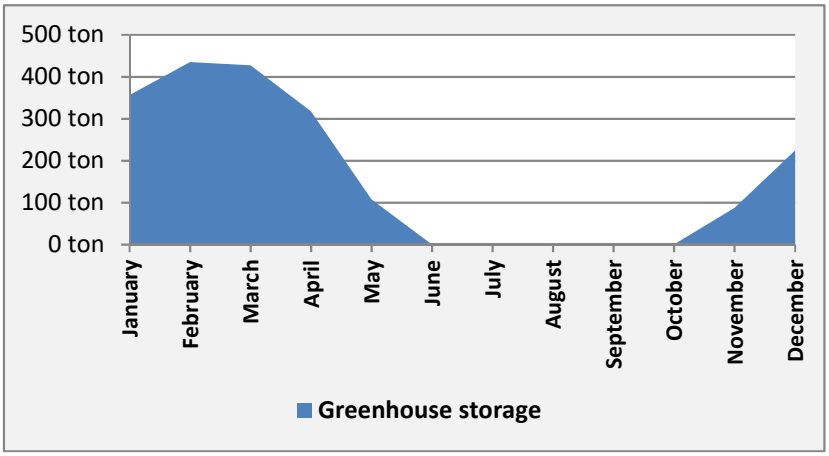
Equipment Recommendation:

Recommended unit model:	Huber Dryer Solstice 9.1	
Recommended unit quantity:	3	
Recommended width of greenhouse:	98 ft	(30 m)
Recommended length of greenhouse:	269 ft	(82 m)
Length of drying field:	238 ft	(72 m)
Drying area (per unit):	7,093 ft²	(659 m²)
Total drying area (per greenhouse):	21,280 ft²	(1,977 m²)

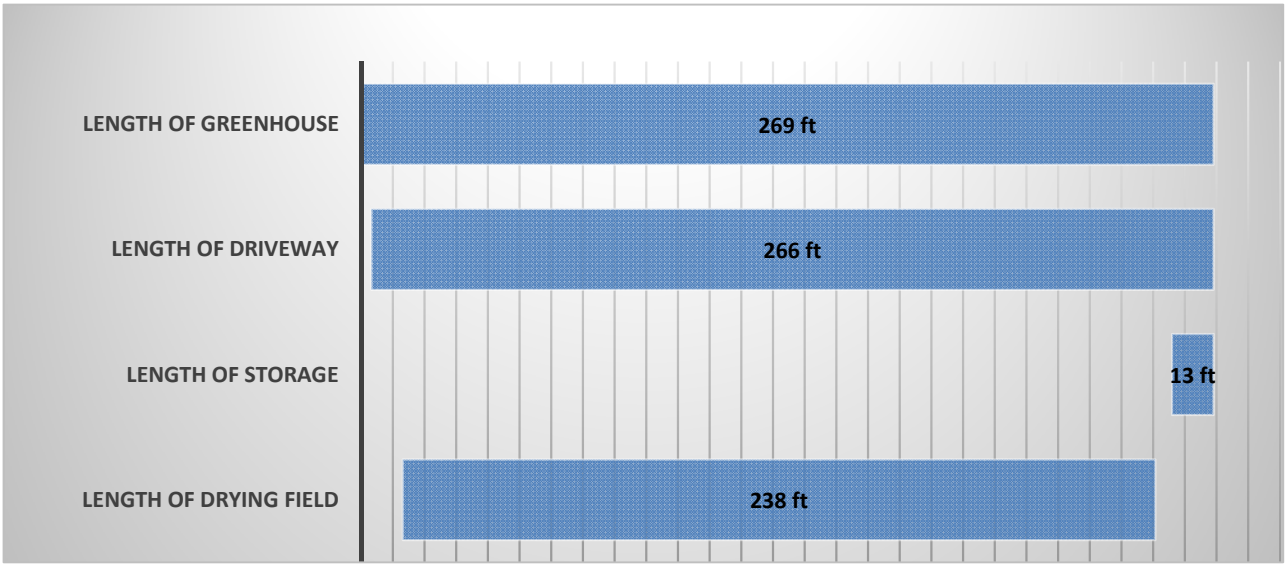
Project Design Calculations:

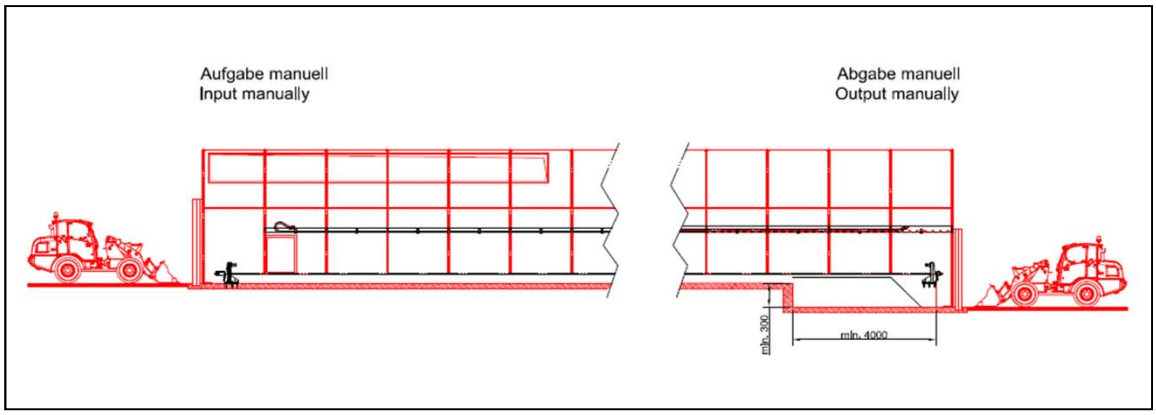
Estimated Dry Cake Solids Out:	90%
Solids Loading Rate Out:	747 ton/yr
Annual Water Evaporation Requirement:	2,614 ton water/yr

	Input	DSIn	Output	DSOut	Water evaporation	Sludge level
January	280 ton	20%	33 ton	90%	116 ton	10 in
February	280 ton	20%	45 ton	90%	156 ton	12 in
March	280 ton	20%	64 ton	90%	224 ton	12 in
April	280 ton	20%	87 ton	90%	303 ton	9 in
May	280 ton	20%	109 ton	90%	381 ton	4 in
June	280 ton	20%	86 ton	90%	301 ton	2 in
July	280 ton	20%	62 ton	90%	218 ton	2 in
August	280 ton	20%	62 ton	90%	218 ton	2 in
September	280 ton	20%	62 ton	90%	218 ton	2 in
October	280 ton	20%	62 ton	90%	218 ton	2 in
November	280 ton	20%	43 ton	90%	150 ton	4 in
December	280 ton	20%	32 ton	90%	111 ton	7 in
Sum/average	**3361 ton**	**20%**	**747 ton**	**90%**	**2614 ton**	**6 in**



HUBER Technology, Inc.
1009 Airlie Parkway, Denver, NC 28037
(704) 949-1010 - Fax (704) 949-1020 - huber@hhusa.net
www.huber-technology.com
A member of the HUBER Group





Electrical Consumption (Estimation):

	Numbers	Operation time	Effective power	Electrical consumption
Traction drive	3	1,957 h/a	2.20 kW	6,740 kWh
Sludge turning drives	6	979 h/a	1.50 kW	4,595 kWh
Lift drive shield	3	245 h/a	0.50 kW	37 kWh
Installation (estimation)	3	1,000 h/a	1.00 kW	3,000 kWh
Ventilators (all)	18	4,085 h/a	0.80 kW	58,824 kWh
SUM				**73,195 kWh**

HUBER Technology, Inc.
1009 Airlie Parkway, Denver, NC 28037
(704) 949-1010 - Fax (704) 949-1020 - huber@hhusa.net
www.huber-technology.com
A member of the HUBER Group

Notes and Assumptions

Fort Bragg, CA November 3, 2020

1. Equipment specification and drawings are available upon request.
2. If there are site-specific hydraulic constraints that must be applied, please consult the manufacturer's representative to ensure compatibility with the proposed system.
3. Huber Technology warrants all components of the system against faulty workmanship and materials for a period of 12 months from date of start-up or 18 months after shipment, whichever
4. Budget estimate is based on Huber Technology's standard Terms & Conditions and is quoted in US dollars unless otherwise stated.
5. Equipment recommendations are based on information provided to Huber Technology. Subsequent information which differs from what has been provided may alter the equipment
6. Pricing is based on Huber's standard control panel arrangement.
7. Greenhouse lengths may vary based on the required automation of the sludge input and discharge.
8. The offer is based on normal, homogenous municipal sludge with a minimum organic content of 45% and a maximum organic content of 70%. Sludge with organic content around 70% is assumed to have less than 45% protein value.
9. Feed sludge must be free of any pollutants which could be hazardous, toxic, radioactive, corrosive, flammable, or explosive.
10. Feed sludge must be free of lime which may have been added to stabilize or improve storage of the sludge. Sludge stabilized with lime can only be treated in drying plants which are specifically designed for this purpose.
11. Annual solids loading is based on 124,000 gal/wk at 2.5% feed solids to dewatering process with 100% capture rate.

Equipment Summary

Fort Bragg, CA November 3, 2020

Dryer System:

Three (3) Huber SRT 9.1 Dryer, including:

- 316L stainless steel construction; pickled and passivated in acid bath
- Traction drive system and chain
  - 3HP, 460VAC, 3PH, 60Hz, VFD Motor
- Sludge turning unit
  - 10HP, 460VAC, 3PH, 60Hz, VFD Motor
- Galvanized steel rail system
- 12 Recirculation Fans
- 6 Exhaust Fans
- Dust Encapsulation
- Scraper Plate
  - 1.0HP, 460VAC, 3PH, 60Hz Motor

Control System - Solar Dryer, including:

- Solar Dryer Main Control Panel
- Solar Dryer Transfer Control Panel
- Junction Box

Greenhouse:

- Width and length to meet design criteria above
- Roof and side walls twin wall polycarbonate
- Anodized aluminum frame
- Two (2) passage doors
- Two (2) overhead doors

Freight and Startup:

- Standard Huber Recommended Start-up Services
- Freight to jobsite.

Total Price: $ 2,240,000 (for all units)

Dryer Options

Fort Bragg, CA November 3, 2020

Optional Items which can be supplied by Huber (but are not included in the above pricing):

- Cake conveyance to the dryer
- Discharge and Dry Storage System
- Odor Control System

HUBER Technology, Inc.
1009 Airlie Parkway, Denver, NC 28037
(704) 949-1010 - Fax (704) 949-1020 - huber@hhusa.net
www.huber-technology.com
A member of the HUBER Group

Items Not Supplied by Huber

Fort Bragg, CA November 3, 2020

Items not included in the above offering:

- Wiring and piping between all supplied equipment
- Installation
- Concrete work
- Site Preparation
- Maintenance platforms and cranes

HUBER Technology, Inc.
1009 Airlie Parkway, Denver, NC 28037
(704) 949-1010 - Fax (704) 949-1020 - huber@hhusa.net
www.huber-technology.com
A member of the HUBER Group