

Daniel Balboa, R.S.

P.O. Box 574
Buda, Texas 78610
balboaseptic@gmail.com
(512) 899-2757

May 20, 2021

Blanco County Authorized Agent
P.O. Box 471
Johnson City, TX, 78636

Re: On-Site Wastewater Plan For:
Rodenberg Residence
1380 Stoneledge Pass
Lot 22, Middle Creek Crossing, Phase II
Blanco, Texas 78606

Dear Designated Representative,

Enclosed is a copy of the on-site sewage facility plan for the proposed house at the above referenced property.

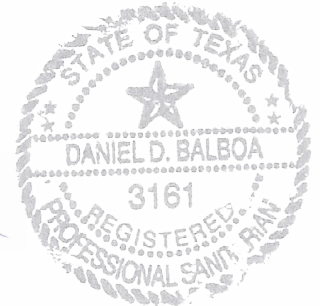
I have designed the OSSF for a Four bedroom equivalent house of less than 3500 square feet with low flow devices. The design flow is 300 gallons per day.

Please call if I can be of more assistance with this project.

Sincerely,



Daniel Balboa, R.S.



OSSF SOIL EVALUATION FORM

Owner's Name Rodenberg

Physical Address 1380 Stoneledge Pass

Legal Description Lot 22, Middle Creek Crossing, Phase II

Name of Site Evaluator Daniel Balboa #OS 0009960

Date Performed 4-8-2021 Proposed Excavation Depth N/A

Requirements:

- At least two soil evaluations must be performed on the site, at opposite ends of the proposed disposal area. Locations of soil evaluations must be shown on the application site drawing or designer's site drawing.
- For subsurface disposal, soil evaluations must be performed to a depth of at least 2 ft. below the proposed excavation depth. For surface disposal, the surface horizon must be evaluated.
- Please describe each soil horizon and identify any restrictive features in the space provided below. Draw lines at the appropriate depths.

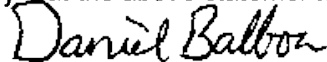
Soil Profile Hole Number <u>1</u>					
Depth (ft)	Textural Class	Gravel Analysis	Drainage (Mottles/Water Table)	Restrictive Horizon	Observations
0"-14" 0	III	None	None	None	Light Brown Clay Loam
1					
2					
3					
4					
5					

Soil Profile Hole Number <u>2</u>					
Depth (ft)	Textural Class	Gravel Analysis	Drainage (Mottles/Water Table)	Restrictive Horizon	Observations
0"-12" 0	III	None	None	None	Light Brown Clay Loam
1					
2					
3					
4					
5					

Features of Site Area

Presence of 100 year flood zone	Yes _____ No <u>X</u>
Presence of adjacent ponds, streams, water impoundments	Yes _____ No <u>X</u>
Existing or proposed water well in nearby area	Yes <u>X</u> No _____
Organized sewage available to lot or tract	Yes _____ No <u>X</u>
Recharge features within 150 feet	Yes _____ No <u>X</u>
Suitable for standard system	Yes _____ No <u>X</u>

I certify that the above statements are true and are based on my own field observations.

 Signature of Site Evaluator	<u>5-20-2021</u> Date
--	--------------------------

On-Site
Wastewater System
For:

Rodenberg Residence
1380 Stoneledge Pass
Lot 22, Middle Creek Crossing, Phase II
Blanco, Texas 78606

System summary:

System Designed For: 300 Gallons Per Day
Aerobic Tank System, NuWater B550
Submersible Effluent Pump, Franklin C1 Cistern Pump Model 20C1-05P4-2W115
NSF Standard 46 Approved Liquid Chlorinator, LBC Manufacturing, Model LBC 500
Night-Time Spray Irrigation Disposal 4924 sq.ft
using Two K-Rain ProPlus Spray Heads with full-circle pattern set at 28ft radii (No. 3 LA nozzle)

May 20, 2021

Daniel Balboa, R. S.

P.O. Box 574
Buda, Texas 78610
(512) 899-2757



Daniel Balboa

5-20-2021

Calculations:

System designed for a maximum daily effluent of:

Trash tank proposed in NuWater B-550-PC-400PT:

300 Gallons Per Day

353 Gallons

Aerobic tank requirement per §285.91(2):

480 Gallons Per Day

Aerobic tank proposed: NuWater B-550-PC-400PT

600 Gallons Per Day

Pump tank proposed in NuWater B-550-PC-400PT:

768 Gallons

Sprayfield required: 300 gallons per day ÷ 0.064 Gallons per sq. ft per day

=4688ft²

K-Rain ProPlus, Pop-up Sprinkler Heads with No. 3 Low Angle Nozzles are to be used.

These heads will produce a radius of approximately 29ft at approximately 25psi.

Use diffuser screw to reduce radius to 28ft.

Area Provided By Spray Heads: 28ft x 28ft x 3.14 =2462ft² per head per 360 degrees

2462ft² x 2 (two 360 degree spray patterns) = **4924ft²**

DOSING SPECIFICATIONS:

Pump intake will be 6 ft below ground

6.00ft

Grade difference from tank to field

-10.00ft

Friction head 200ft of 1" @ 4.6 gpm 200ft x 1.46ft/100ft

2.92ft

Friction head 60ft of 1"@ 2.3 gpm 60ft x 0.40ft/100ft

0.24ft

Friction head through fittings and valves

2.00ft

Pressure head (at pump) 25 psi x 2.31 ft per psi

57.75ft

Total head on pump

58.91ft

A Franklin C1 Series Cistern pump, Model 20C1-05P4-2W115, 1/2 hp, 115 volt submersible pump is specified.

From the performance curve chart, this pump will flow approximately 25 GPM at 58.91ft of head.

At 25 psi, each head should use approximately 2.30 gpm 2 x 2.3 gpm = 4.6 gpm

4.6 gpm for a 300 gallon dose = 65.22 minutes per day

Use NuWater Control Panel

The pump off float is to be set so that the pump is turned off 6" above the floor of the tank.

The pump on float is to be set to activate the pump 11" above the floor of the tank.

The alarm float is to be set 32" above the floor (21" below the pump chamber inlet).

An audible/visual alarm is to be built-in in the control panel. This control panel is to contain an audible/visual alarm for the air compressor as well as the submersible pump.

Pump Chamber Calculations:

768 Gallon Pump Chamber has a 53" Volume Height and 14.49 gallons per inch

Volume Required Above Alarm:

=300 Gallons

Alarm float will need to activate the alarm at 21" below the pump tank inlet.

Alarm on at 32" and Pump Chamber Inlet at 53"

21" x 14.49 gallons per inch

=304 Gallons

Volume Proposed Between Pump On and Alarm On:

=300 Gallons

Pump Off at 11" and Alarm On at 32"

21" x 14.49 gallons per inch

=304 Gallons

Tank Instructions:

Berm, swale, and gutter the building to divert stormwater away from the tanks.

All tanks are to be located in an area where they will be protected from automobiles heavy equipment, and drainage or ponding that could cause water infiltration into the tanks.

All tanks shall be set level on a pad of sand, pea gravel, or sandy loam with a minimum depth of 4" (washed sand preferred).

The tanks are to be installed with their lids no deeper than 18" beneath the finish grade and no deeper than the manufacturer's specifications. Backfill the tank excavation in accordance with manufacturer's instructions.

The inlets, outlets, seams between the lids and walls of the tanks, the manhole openings, and the manhole risers are to be sealed with mortar.

The sewer line from the facility to the tank is to be 3" or 4" inside diameter. If the stub-out from the facility is 4" inside diameter, then the sewer line from the facility to the tank must be 4" inside diameter. If bell-end couplers are used then the couplers are to be installed with the bell end up slope of the pipe. This will make the line less likely to accumulate debris at the coupling.

All connecting pipes for the tanks are to be Schedule 40 PVC and chemically welded in place. These pipes are to be mortared or epoxied (swimming pool epoxy preferred) where they enter or leave the tank, and these junctions are to be water tested.

All tanks shall be filled with water high enough to cover the connecting pipes twenty-four hours prior to inspection.

Pipes on inlet side of trash tank shall have a minimum fall of 1/8" per foot.

All turns in gravity system prior to septic tank shall be made with a maximum of 45 degree bends.

All electrical connections for the pump and alarm must be made in accordance with the National Electric Code.

The pump is to be wired on a separate breaker than the alarm.

Risers shall be installed on all manhole openings if the depth of soil on the tank exceeds 12".

Risers must be installed airtight. There should be no way for storm runoff water to enter the tank.

The control panel and air compressor should be installed high enough to prevent storm runoff water from flooding them.

All wiring exterior to the tank shall be in conduit. The conduit entering the manhole riser should be sealed on the end to prevent gasses and water from entering the conduit.

The electrical connections for the leads to the pump and float switches with the wires from the building are to be made in an underground junction box located near the manhole riser for the pump tank or they are to be made inside the manhole riser in a junction box with fittings approved for exposure to caustic and explosive gases.

The chlorine used with this system must be approved by the EPA for use in wastewater systems.

Water softeners and garbage disposals should not be installed nor used in a building connected to this wastewater system.

Sprayfield Instructions:

Berm, swale, and gutter the building to divert stormwater away from the sprayfield.

Grass must be established in the area that is to be sprayed. If the grass dies off in the winter, or for lack of water, additional seed or sod must be added.

The grass must be maintained by watering (if needed) and mowing. Uncut grass hampers the evapotranspiration process.

All pipes are to be buried with at least 6" of soil cover.

If puddling of effluent near the spray heads is observed, the system may have a problem that needs to be addressed.

Please call Daniel Balboa R.S. or the company responsible for the maintenance to diagnose the situation.

Inspection Schedule:

This inspection schedule must be adhered to in order to demonstrate compliance.

This schedule is independent of the authorized agent's (health department's) schedule.

Pre-construction: Arrange to meet a representative from Daniel Balboa R.S. prior to construction.

1st Inspection: When spray heads and supply lines are installed.

When tanks and connecting pipes have been installed and filled for twenty-four hours.

When pump and alarm are installed and operational.

Final Inspection: When system is complete and landscaping finished.

NOTICE TO THE OWNER

1. Design Parameters: This wastewater system has been designed or will be designed on information provided by the client, and based on site conditions at the time of design. Daniel Balboa accepts no responsibility for incorrect information or changes in site conditions.

2. Usage Limitation: The maximum peak usage limitation is 300 gallons per day. The maximum monthly usage should be no more than 5850 gallons (195 gallons per day average). **Average Daily Usage should be no more than 65% of the maximum usage.** The Owner shall inform the property's occupants of the gallon per day Usage Limitation and, upon sale or transfer of the property, the Owner shall inform the property's buyers of the Usage Limitation.

3. License: The Owner shall acquire a license to operate this wastewater system from the appropriate local governing agency. A license is not automatically issued when inspections are complete.

4. Grade Cuts: Any grade cuts made within twenty-five (25) feet downhill or to the side of the drainfield will likely void the license and may cause failure of the system. It is very common for such grade cuts to be considered for construction of foundations, driveways, sidewalks, pools, retaining walls and the like. The Owner is responsible for seeing that these cuts are not made.

5. Setbacks: The Owner shall adhere to the drainfield minimum setbacks and assure that all improvements made on the property are not over the system and are outside of the setbacks. It is the Owner's responsibility to assure that buildings, houses, irrigation systems, patios, ponds, storage units, water lines, water wells, or other structures or improvements are not constructed above the system or inside the setbacks. The Owner shall refer to these plans, homeowner's association rules, the local regulations, and TCEQ's on-site wastewater rules regarding the exact setbacks.

6. Trees: The Owner understands that damage to trees may result from installation and/or operation of the system and hereby relieves Daniel Balboa of any and all claims for damage to trees.

7. Vehicles: It is the Owner's responsibility to assure that automobiles, campers, motor homes, trailers, or other vehicles are not parked or driven above the system or inside the setbacks.

8. Water Softening and Reverse-Osmosis: The backwash from water softening and reverse osmosis units must not be plumbed into any part of the system. Water softening units harm the system by injecting high salt concentration solutions into it and reverse osmosis units harm the system by hydraulically overloading it.

9. Sprinkler Systems & Drainage Systems: No sprinkler system should be installed on or near the drainfield. Rainwater drainage should not be directed toward the drainfield. Excessive water falling on or uphill of the drainfield can cause the drainfield to fail.

10. Repairs: The Owner shall repair this wastewater system as needed. Typical repairs include, but are not limited to: replacing soil and grass over the system's drainfield; replacing the pump and other components which become damaged, worn or ruined; and replacing crushed, collapsed, or cracked system components.

11. Large Surges Of Wastewater: Large bathtubs should not be drained all at once, nor should several loads of laundry be washed all at once. Large volumes of water (20 gallons or more) entering the wastewater system rapidly will cause turbulence in the treatment tank. This turbulence causes solids in the tank to be transferred out of the tank. This solids transfer will cause some part of the system to become plugged.

12. High Strength Waste: No commercial food preparation or other processes that might create high strength wastewater are allowed.

13. Hazardous Materials: Chemicals that might kill off the organisms in the tanks and drainfield that are responsible for treating the wastewater should not be allowed to enter the wastewater system. Some examples are: gasoline, paint thinner, paint, antibiotics, and film development chemicals.

14. Maintenance: The Owner shall maintain this system as needed. Typical maintenance includes, but is not limited to:

- a) maintaining grass above the system's drainfield and other areas of disturbed soil
- b) replacing chlorine, if required
- c) regularly inspecting the system to ensure that effluent is not surfacing
- d) regularly inspecting and repairing the plumbing fixtures, especially toilets, to make sure that leaking fixtures even unapparent leaks are not overloading the system
- e) conserve water by: using 2 ½gpm shower heads, 1.6gpm toilets and 2.2gpm faucet aerators, not running water continuously during hand washing, teeth brushing, rinsing dishes, cleaning vegetables, etc.
- f) limiting the use of garbage grinders (it is preferred that no garbage grinder be used)
- g) not disposing of cigarette butts, trash, coffee grounds, tampons or napkins down the drain
- h) not adding septic tank additives
- i) limiting the quantity of soaps, detergents, bleach, and drain cleaners that enter the system
- j) legally removing sludge, scum, and trash from the tanks, as needed (at least every 3 years)

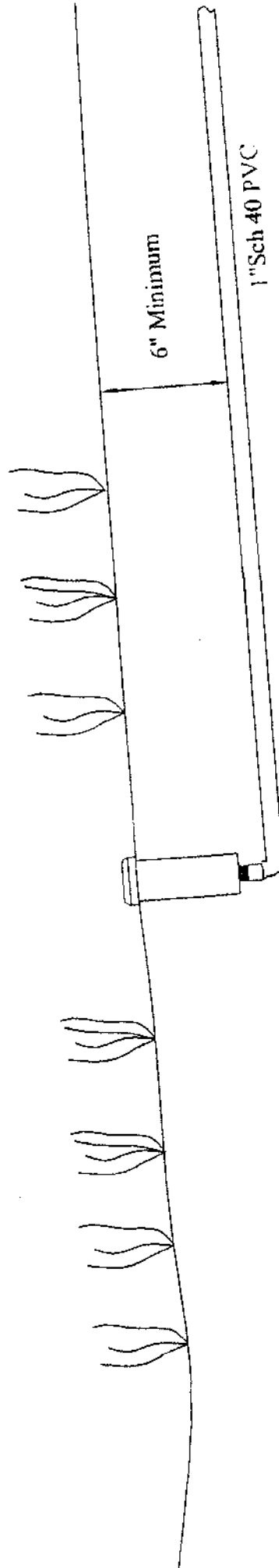
Detail of Spray Head Installation

All rock in the area to be irrigated is to be removed or covered with at least 4" of class IV or class III soil.

The pipe, spray head tops, etc. must be permanently colored purple.

All brush in the spray area is to be removed.

Seed all disturbed areas and all bare soil with Bermuda, 1 lb. per 400 ft²



Adjust the angle of the spray head so that effluent falls evenly over the entire spray area.

Bed spray head and 1" supply line in sand.



Nozzle Chart

Low Angle Nozzles (Green)

Nozzle PSI Radius Flow

1	25	25	1.1
	20	23	1.0
	15	20	0.9
3	25	29	2.3
	20	25	2.0
	15	21	1.6
4	25	30	3.7
	20	27	3.2
	15	22	2.7
6	30	33	5.8
	25	31	5.0
	20	27	4.3
	15	20	3.6
	*	10	2.5

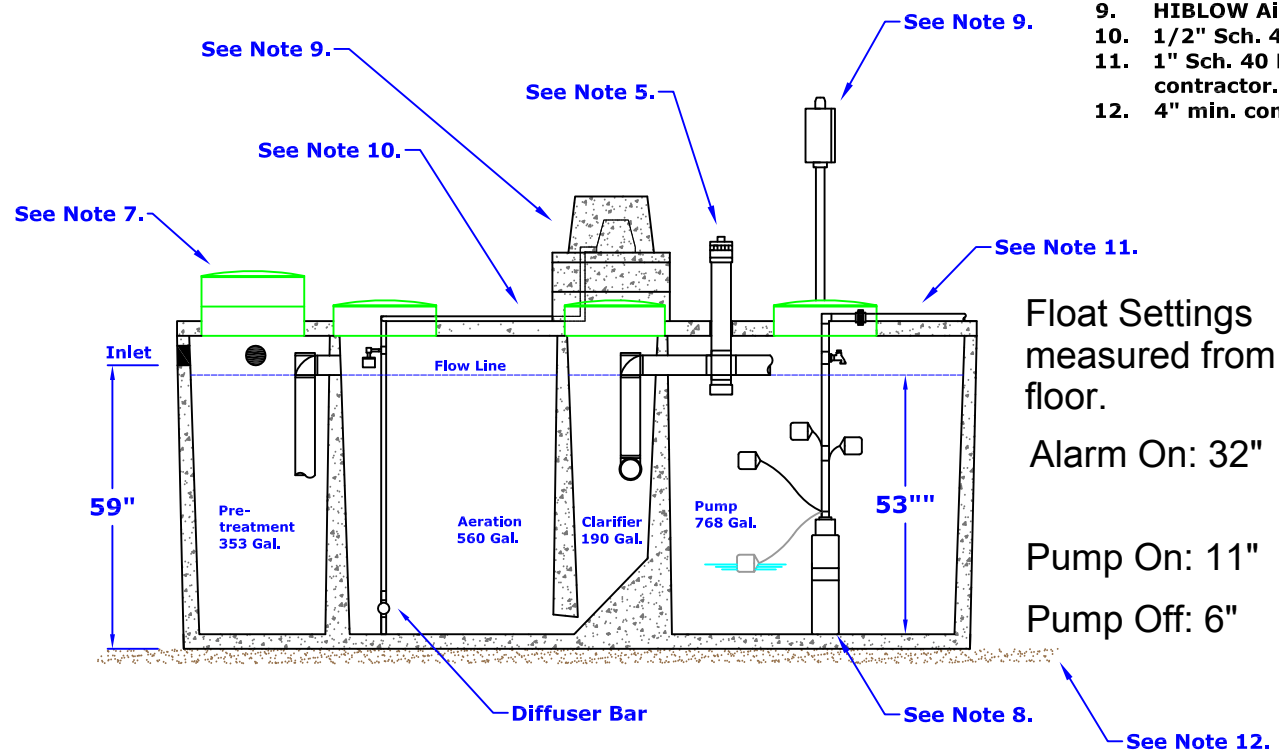
* Little to no break-up coverage

Assembly Details

OSSF

GENERAL NOTES:

1. Plant structure material to be precast concrete and steel.
2. Maximum burial depth is 30" from slab top to grade.
3. Weight = 14,900 lbs.
4. Treatment capacity is 600 GPD. Pump compartment set-up for a 360 GPD Flow Rate (4 bedroom, < 4,000 sq/ft living area). Please specify for additional set-up requirements. BOD Loading = 1.62 lbs. per day.
5. Standard tablet chlorinator or Optional Liquid chlorinator. NSF approved chlorinators (tablet & liquid) available.
6. Bio-Robix B-550 Control Center w/ Timer for night spray application. Optional Micro Dose (min/sec) timer available for drip applications. Electrical Requirement to be 115 Volts, 60 Hz, Single Phase, 30 AMP, Grounded Receptacle.
7. 20" Ø access riser w/ lid (Typical 4). Optional extension risers available.
8. 20 GPM 1/2 HP, high head effluent pump.
9. HIBLOW Air Compressor w/ concrete housing.
10. 1/2" Sch. 40 PVC Air Line (Max. 50 Lft from Plant).
11. 1" Sch. 40 PVC pipe to distribution system provided by contractor.
12. 4" min. compacted sand or gravel pad by Contractor



Float Settings
measured from
floor.

Alarm On: 32"

Pump On: 11"

Pump Off: 6"

DIMENSIONS:

Outside Height: 67"
Outside Width: 63"
Outside Length: 164"

MINIMUM EXCAVATION DIMENSIONS:

Width: 76"
Length: 176"

Secondary safety pans are required inside each manhole riser. All riser must extend to just above finish grade.

NuWater B-550 (600 GPD)
Aerobic Treatment Plant (Assembled)

Model: B-550-PC-400PT

March, 2012 - Rev 1
By: A.S.

Scale:

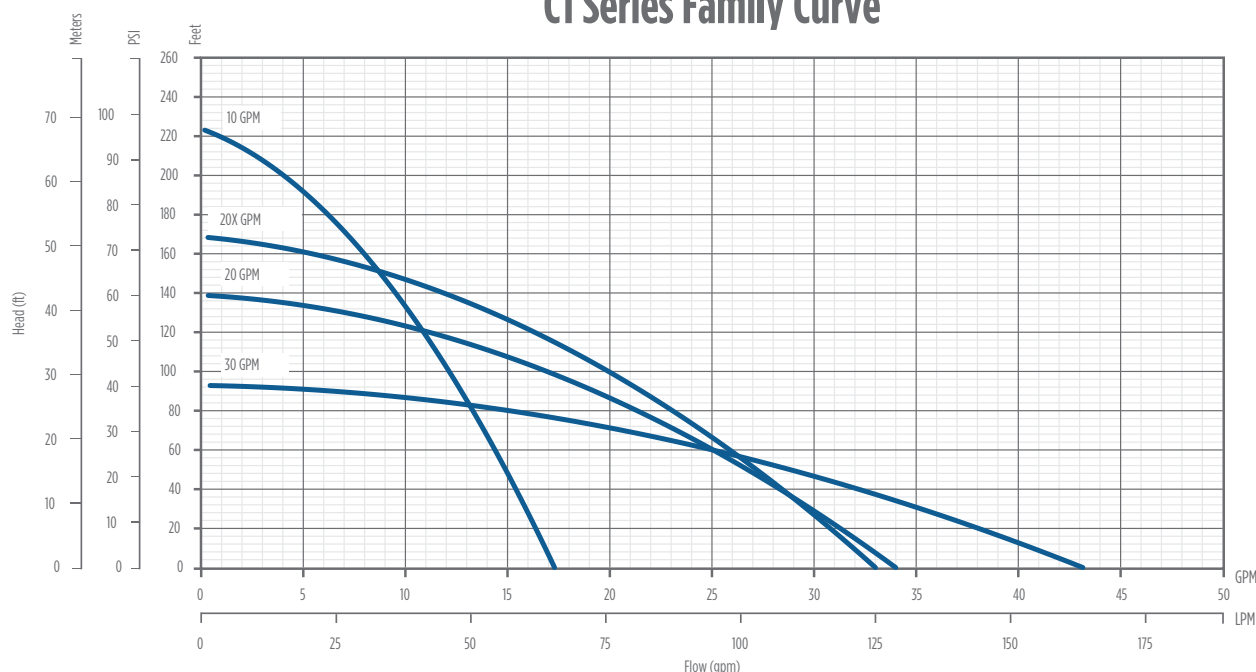
* All Dimensions subject to allowable specification tolerances.

Dwg. #: ADV-B550-3

Advantage
Wastewater Solutions llc

Advantage Wastewater Solutions llc.
444 A Old Hwy No 9
Comfort, TX 78013
830-995-3189
fax 830-995-4051

C1 Series Family Curve



FEATURES

- Supplied with a removable 5" base for secure and reliable mounting
- Bottom suction design
- Robust thermoplastic discharge head design resists breakage during installation and operation
- Single shell housing design provides a compact unit while ensuring cool and quiet operation
- Hydraulic components molded from high quality engineered thermoplastics
- Optimized hydraulic design allows for increased performance and decreased power usage
- All metal components are made of high grade stainless steel for corrosion resistance
- Available with a high quality 115 V or 230 V, ½ hp motor
- Fluid flows of 10, 20, and 30 gpm, with a max shut-off pressure of over 100 psi
- Heavy duty 600 V 10 foot SJ00W jacketed lead

APPLICATIONS

- Gray water pumping
- Filtered effluent service water pumping
- Water reclamation projects such as pumping from rain catchment basins
- Aeration and other foundation or pond applications
- Agriculture and livestock water pumping

ORDERING INFORMATION

C1 Series Pumps							
GPM	HP	Volts	Stage	Model No.	Order No.	Length (in)	Weight (lbs)
10	1/2	115	7	10C1-05P4-2W115	90301005	26	17
		230	7	10C1-05P4-2W230	90301010	26	17
20		115	5	20C1-05P4-2W115	90302005	25	16
		230	5	20C1-05P4-2W230	90302010	25	16
20X		115	6	20XC1-05P4-2W115	90302015	26	17
		230	6	20XC1-05P4-2W230	90302020	26	17
30		115	4	30C1-05P4-2W115	90303005	25	16
		230	4	30C1-05P4-2W230	90303010	25	16

Note: All units have 10 foot long SJ00W leads.



Franklin Electric

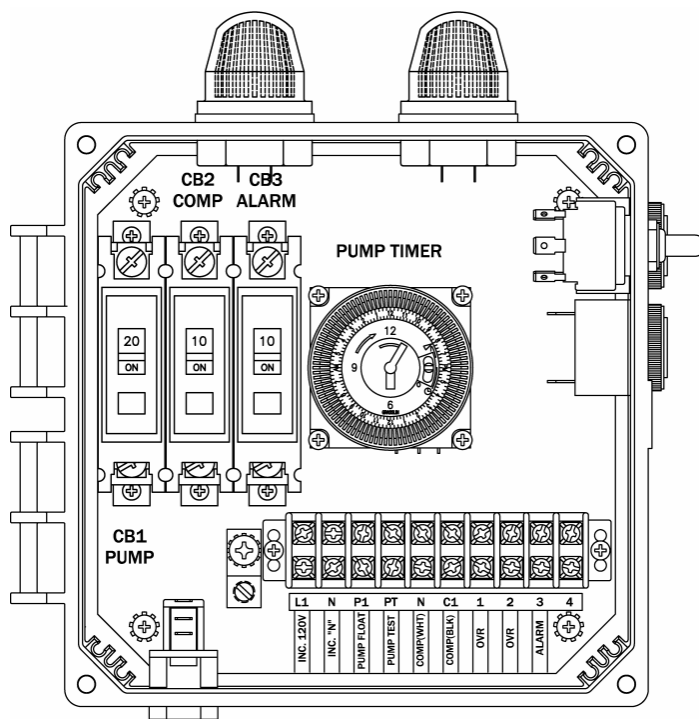
franklinwater.com

M1698 07-14

“A-AV” Model Aerobic Control Panel

Features & Benefits

- Circuit Breakers for Pump, Compressor & Alarm Circuits
- 24 Hr Timer w/15 minute intervals
- Large & Easy to Access Terminal Block
- Externally Mounted Run/Mute/Test Switch w/UV resistant sealing boot
- Externally Mounted Audible Alarm
- Rugged UV resistant Externally Mounted Alarm Light
- Durable Weather Resistant Hinged Poly Enclosure
- Labeled Back Panel
- Ground Lug
- Easily Replaceable Components
- Nema 4x Rating
- Color Coded Internal Wiring
- Built and Labeled to UL 508A Standard
- Works with most Aerobic Treatment Systems
- Provided with Wiring Schematic and Detailed Connection Diagram for Installer
- Mounting Feet for Enclosure
- Two year limited control panel warranty



(50B138-BIO-A-AV SHOWN)

NOTE: Comp. alarm switch located on enclosure door



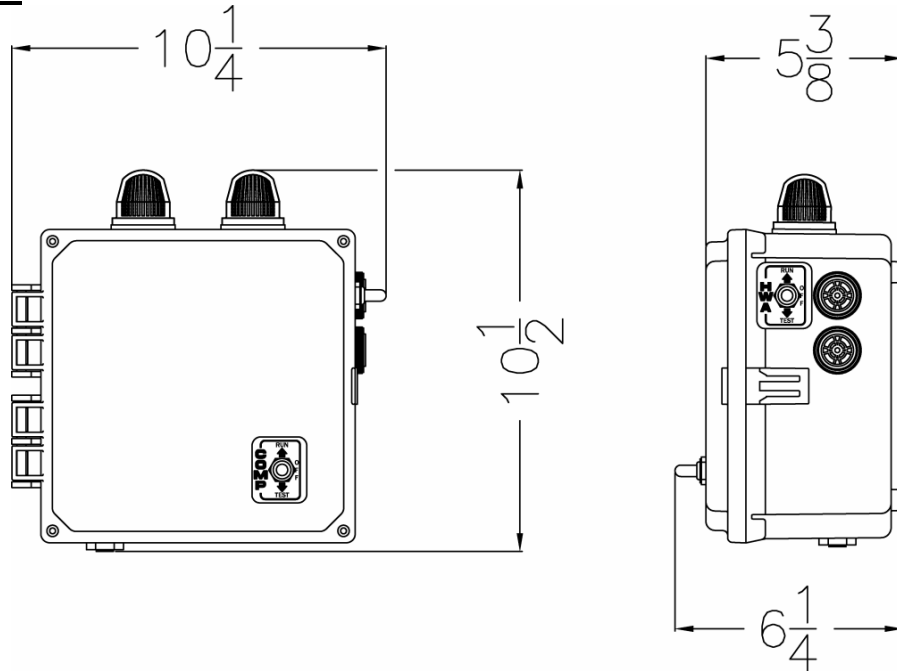
Available Options

- Externally Mounted Pump Test Switch
- Externally Mounted Air Pressure Switch
- Auto-Dialer
- Locking Stainless Steel Latch
- Repeat Cycle Timer Option
- Mercury or Mechanical Float Switches for the Pump and High Water Alarm Circuits

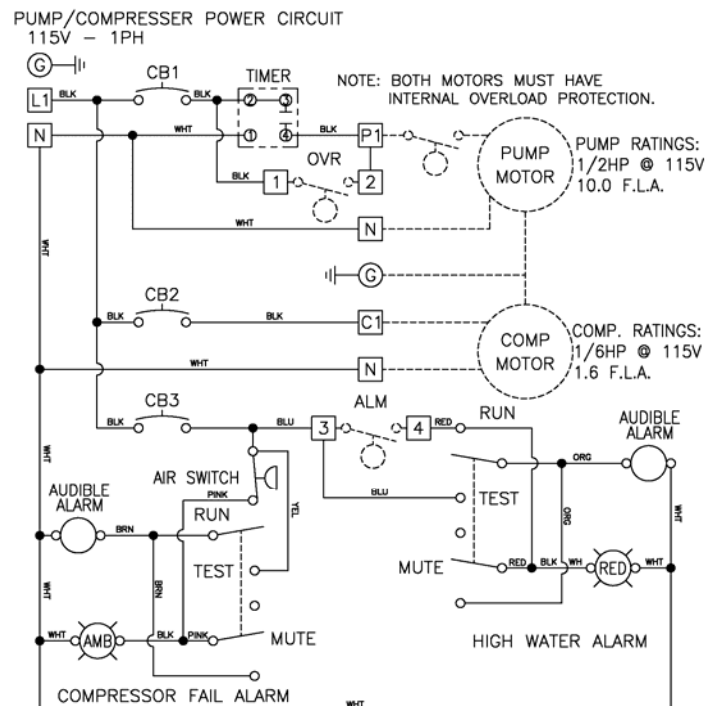
Note: Consult the factory for other available options. Also some options may require an increase in the enclosure size.

“A-A V” Model Aerobic Control Panel

Panel Dimensions



Wiring Schematic



The spray heads are to be at least 10ft setback from any tree and at least 15 ft setback from any tree larger than 24" in diameter.

The spray patterns are to be at least 50ft setback from the property lines.

All parts of the OSSF are to be at least 10ft setback from the water line.

The tank is to be at least 5ft setback from the buildings and any surface improvement.

Water Well Setbacks:
 Sprayfield 100ft
 Effluent pipes 20ft
 Tanks 50ft



Scale: 1" = 200ft

