

## Z-Cell®

U.S. Patent Pending  
5,897,777

# HIGH PERFORMANCE WETLAND



The Clarus Environmental Z-Cell® is a high performance constructed wetland wastewater treatment system capable of decreasing residential strength waste from a septic tank to better than secondary treatment levels (BOD<30mg/L and TSS<30mg/L). Even though conventional wetlands are often used for secondary treatment, they do not routinely meet secondary treatment effluent quality standards. The advanced design of the Z-Cell® has

solved the problems of conventional wetlands. The Z-Cell® operates on the simple principle of managing the influent in time and space. Flow is equalized using time dosing and is uniformly applied to the bottom of the treatment cell. The fluid has a short, vertical path (36") to an outlet header. By moving the fluid vertically, the fluid must pass through the horizontally-oriented, plant root zone. Thus the problem of preferential (short circuiting) flow in a conventional wetland has been solved.

- Residential Wastewater Treatment
- Proven Technology
- Attractive Design
- Environmentally Friendly

### Z-Cell® Wetland Wastewater Treatment System - Letting Nature Work



**The Z-Cell® is an attractive, robust, and ecologically sound treatment system.**

ALL CLARUS ENVIRONMENTAL ONSITE PRODUCTS MUST BE INSTALLED IN ACCORDANCE WITH PLUMBING AND HEALTH DEPARTMENT CODES.

# 10' X 20' Z-Cell® High Performance Wetland (450 GPD)

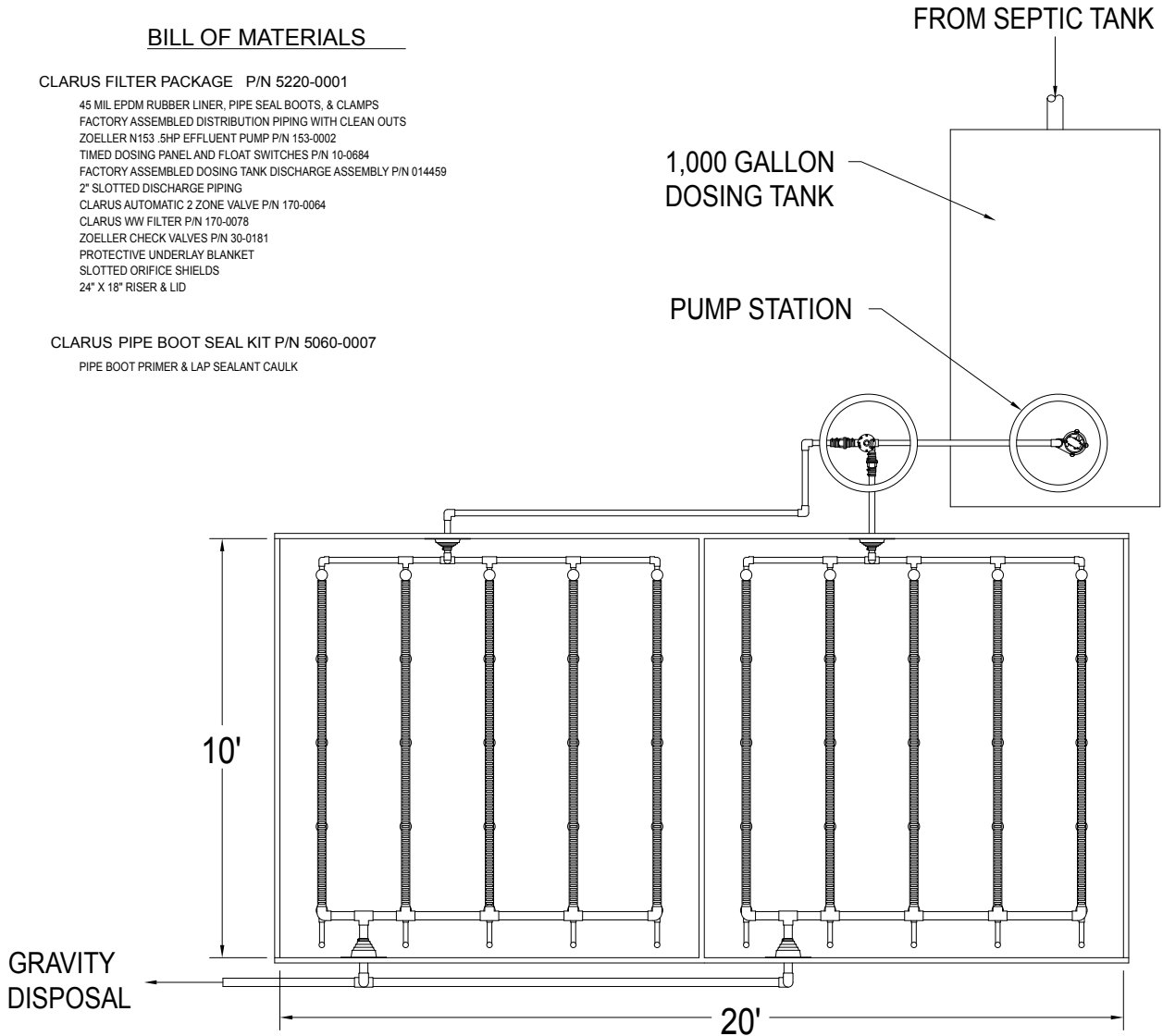
## BILL OF MATERIALS

### CLARUS FILTER PACKAGE P/N 5220-0001

45 MIL EPDM RUBBER LINER, PIPE SEAL BOOTS, & CLAMPS  
 FACTORY ASSEMBLED DISTRIBUTION PIPING WITH CLEAN OUTS  
 ZOELLER N153 .5HP EFFLUENT PUMP P/N 153-0002  
 TIMED DOSING PANEL AND FLOAT SWITCHES P/N 10-0684  
 FACTORY ASSEMBLED DOSING TANK DISCHARGE ASSEMBLY P/N 014459  
 2" SLOTTED DISCHARGE PIPING  
 CLARUS AUTOMATIC 2 ZONE VALVE P/N 170-0064  
 CLARUS WW FILTER P/N 170-0078  
 ZOELLER CHECK VALVES P/N 30-0181  
 PROTECTIVE UNDERLAY BLANKET  
 SLOTTED ORIFICE SHIELDS  
 24" X 18" RISER & LID

### CLARUS PIPE BOOT SEAL KIT P/N 5060-0007

PIPE BOOT PRIMER & LAP SEALANT CAULK



### SUPPLIED BY OTHERS

SEPTIC TANK: MANUFACTURER \_\_\_\_\_ MODEL \_\_\_\_\_  
 (MUST BE WATER TIGHT)

DOSING TANK: MANUFACTURER \_\_\_\_\_ MODEL \_\_\_\_\_  
 (MUST BE WATER TIGHT)

MEDIA: \_\_\_\_\_

PLANTS  
 TREATED LUMBER FOR FRAME  
 FORCE MAIN AND GRAVITY PIPE  
 MISCELLANEOUS FITTINGS, GLUE, ETC...  
 DISPOSAL MATERIALS

### ELECTRICAL SERVICE REQUIRED

GRAVITY DISCHARGE	DOSING PUMP: (1) 115V, 20A
	ALARM: (1) 115V, 15A

\*ELECTRICAL SERVICE WILL VARY FOR LARGER SYSTEMS AND LARGER PUMPS

### VOLUME OF MEDIA REQUIRED

WETLAND SIZE	3'-6" X 10' X 20'
WETLAND MEDIA	26 CU. YARDS

### Z-CELL® WETLAND MEDIA RECOMMENDATIONS

SIEVE SIZE	MINIMUM SIZE % PASSING	MAXIMUM SIZE % PASSING
2 inch	100	100
1 1/2 inch	90	100
1 inch	20	55
3/4 inch	0	15
3/8 inch	0	5

ALL MEDIA USED INSIDE OF Z-CELL® MUST BE WELL WASHED, FINES SHOULD BE KEPT TO AN ABSOLUTE MINIMUM. OTHER MEDIA MAY BE CHOSEN AT THE SPECIFYING ENGINEER'S DISCRETION. CONSULT CLARUS ENVIRONMENTAL AND THE STATE/LOCAL HEALTH DEPARTMENT FOR MEDIA APPROVALS.

### SYSTEM DESIGN INFO:

WETLAND SIZE: 10' X 20' (200 SQ.FT.)  
 LOADING RATE: 2.25 GAL./SQ.FT./DAY  
 MAX. DAILY FLOW: 450 GPD  
 NUMBER OF ZONES: 2  
 ORIFICES PER ZONE: 25  
 DISTAL PRESSURE: 5' (0.41 GPM/ORIFICE)  
 PUMP OPERATING CONDITION: 10.3 GPM @ \_\_\_\_\_' TDH

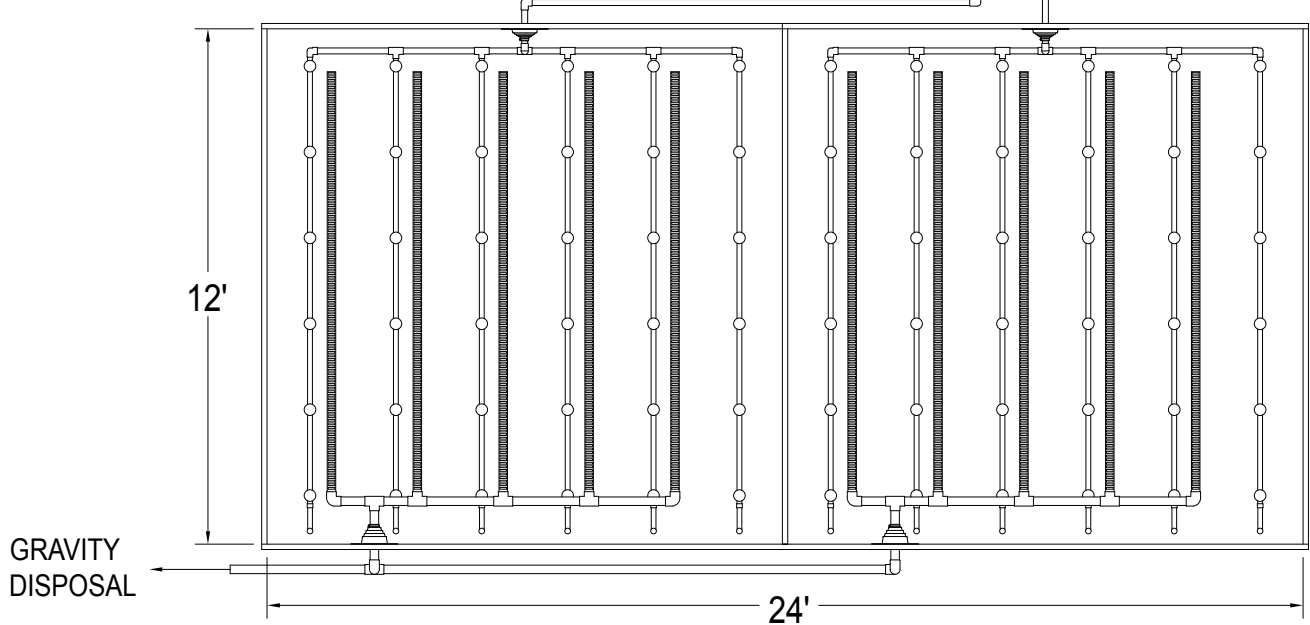
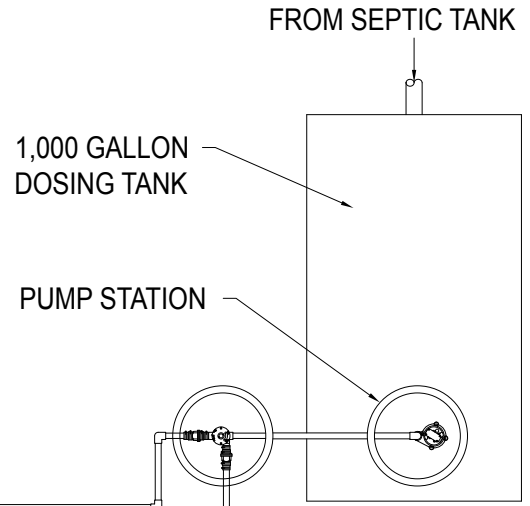
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# 12' X 24' Z-Cell® High Performance Wetland (600 GPD)

## BILL OF MATERIALS

CLARUS FILTER PACKAGE P/N 5220-0002  
 45 MIL EPDM RUBBER LINER, PIPE SEAL BOOTS, & CLAMPS  
 FACTORY ASSEMBLED DISTRIBUTION PIPING WITH CLEAN OUTS  
 ZOELLER N153.5HP EFFLUENT PUMP P/N 153-0002  
 TIMED DOSING PANEL AND FLOAT SWITCHES P/N 10-0684  
 FACTORY ASSEMBLED DOSING TANK DISCHARGE ASSEMBLY P/N 014459  
 2" SLOTTED DISCHARGE PIPING  
 CLARUS AUTOMATIC 2 ZONE VALVE P/N 170-0064  
 CLARUS WW FILTER P/N 170-0078  
 ZOELLER CHECK VALVES P/N 30-0181  
 PROTECTIVE UNDERLAY BLANKET  
 SLOTTED ORIFICE SHIELDS  
 24" X 18" RISER & LID

CLARUS PIPE BOOT SEAL KIT P/N 5060-0007  
 PIPE BOOT PRIMER & LAP SEALANT CAULK



### SUPPLIED BY OTHERS

SEPTIC TANK: MANUFACTURER \_\_\_\_\_ MODEL \_\_\_\_\_  
 (MUST BE WATER TIGHT)

DOSING TANK: MANUFACTURER \_\_\_\_\_ MODEL \_\_\_\_\_  
 (MUST BE WATER TIGHT)

MEDIA: \_\_\_\_\_

PLANTS  
 TREATED LUMBER FOR FRAME  
 FORCE MAIN AND GRAVITY PIPE  
 MISCELLANEOUS FITTINGS, GLUE, ETC....  
 DISPOSAL MATERIALS

ELECTRICAL SERVICE REQUIRED	
GRAVITY DISCHARGE	DOSING PUMP: (1) 115V, 20A ALARM: (1) 115V, 15A

\*ELECTRICAL SERVICE WILL VARY FOR LARGER SYSTEMS AND LARGER PUMPS

VOLUME OF MEDIA REQUIRED	
WETLAND SIZE	3'-6" X 12' X 24'
WETLAND MEDIA	38 CU. YARDS

### Z-CELL® WETLAND MEDIA RECOMMENDATIONS

SIEVE SIZE	MINIMUM SIZE % PASSING	MAXIMUM SIZE % PASSING
2 inch	100	100
1 1/2 inch	90	100
1 inch	20	55
3/4 inch	0	15
3/8 inch	0	5

ALL MEDIA USED INSIDE OF Z-CELL® MUST BE WELL WASHED. FINES SHOULD BE KEPT TO AN ABSOLUTE MINIMUM. OTHER MEDIA MAY BE CHOSEN AT THE SPECIFYING ENGINEER'S DISCRETION. CONSULT CLARUS ENVIRONMENTAL AND THE STATE/LOCAL HEALTH DEPARTMENT FOR MEDIA APPROVALS.

### SYSTEM DESIGN INFO:

WETLAND SIZE: 12' X 24' (288 SQ.FT.)  
 LOADING RATE: 2.10 GAL./SQ.FT./DAY  
 MAX. DAILY FLOW: 600 GPD  
 NUMBER OF ZONES: 2  
 ORIFICES PER ZONE: 36  
 DISTAL PRESSURE: 5' (0.41 GPM/ORIFICE)  
 PUMP OPERATING CONDITION: 14.8 GPM @ \_\_\_\_\_ TDH

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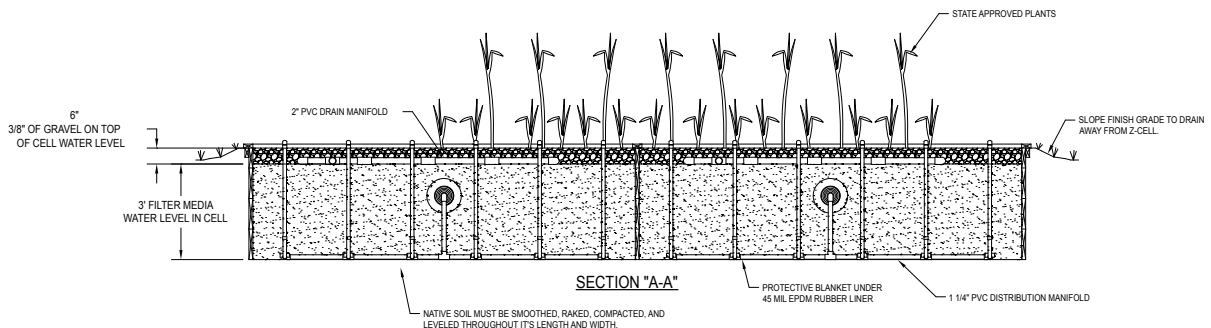
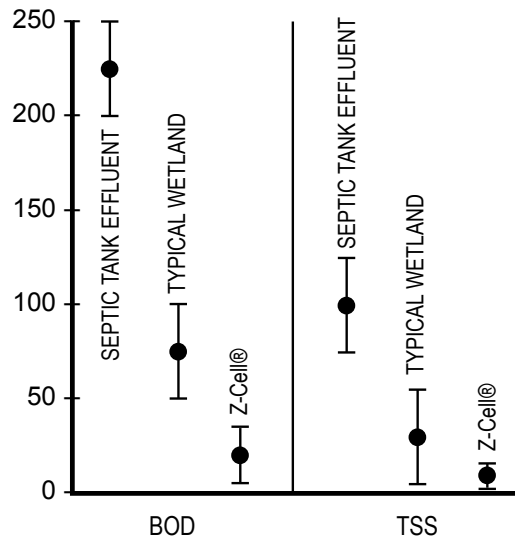
# Clarus Support Services



- Technical Service Department
- Application Engineering
- Onsite Research & Development
- Fully Trained Field Service Representatives
- Free Plan Review Service
- System Sizing Assistance

*Online Support*  
[www.clarusenvironmental.com](http://www.clarusenvironmental.com)

## Typical System Performance Comparison



Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.