	Bureau of Environmental Health 8930 Stanford Boulevard, Columbia, MD 21045			
Howard County	TDD 410-313-2323 Toll Free 1-866-313-6300			
Health Department	www.hchealth.org			
Contratui Departitient	Facebook: www.facebook.com/hocohealth			
RECEIPT DATE: 10 17 0	NSITE SEWAGE DISPOSAL SYSTEM P 561452			
APPROVAL DATE: 10/31/17 SEC	PERMIT: <u>REPAIR</u> A			
PROPERTY ADDRESS: 734 Marriot	tsville Road			
SUBDIVISION: n/a	LOT: n/a TAX ID: 03-294293			
CONTRACTOR: Farm and Home	EMAIL:			
CONTRACTOR ADDRESS: 901 Driver F	toad, Marriottsville, MD 21104 PHONE: 410-984-0189			
CONTRACTOR CERTIFIED FOR BAT INS	TALLATION: 🛛 MDE 🖾 MANUFACTURER: Norweco			
PROPERTY OWNER: Kerry Stagme	r/Barbara Roles EMAIL: <u>baltimoreknifeandsword@gmail.com</u>			
OWNER ADDRESS: 790 Marriottsville	Road PHONE: 443-980-8037			
BAT UNIT MODEL: Norweco TNT/L	P600 PUMP SIZE: .50HP PUMP TANK CAPACITY: 1250g			
OPERATION & MAINTENANCE AGREEME	VT DATE SIGNED: 5/9/2017 DATE RECORDED: 5/12/2017			
DISTRIBUTION SYSTEM: GRAV	TY RESSURE DOSED BEDROOMS: 3 APPLICATION RATE: 0.6			
LINEAR FEET REQUIRED:	n/a INLET DEPTH:			
TRENCHES: TRENCH WIDTH:	MAXIMUM BOTTOM DEPTH:			
BETWEEN TRENCHES:	EFFECTIVE AREA BEGINNING DEPTH:			
LOCATION: TO BE STAKED BY ENVIRO	DNMENTAL HEALTH SPECIALIST/DESIGNER DURING PRE-CONSTRUCTION INSPECTION.			
System designed for a 3E	R MAX Install system per approved design plans submitted by Adam Browning.			
NOTES:	quelles 1153 1/2 177 1505000			
	Decempited and a second			
ISSUED BY: Kevin Wolf	ISSUE DATE: 7/7/2017 EXPIRATION DATE: 7/7/2018			
NOTE: CONTRACTOR MUST SCHEDULE A F	RE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION			
NOTE: CONTRACTOR MUST SCHEDULE AN	INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING			
NOTE: WATERTIGHT SEPTIC TANKS REQUI	RED			
NOTE: ALL PARTS OF SEPTIC SYSTEM SHAL	L BE AT LEAST 100 FEET DOWNGRADIENT FROM ANY WATER WELL			
NOTE: MANHOLE RISERS REQUIRED ON AL NOTE: AN ELECTRICAL PERMIT IS REQUIRE	L SEPTIC TANKS AND PUMP CHAMBERS D FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM			
ELECTRICAL PERMIT ISSUE	D E 17004134			
ACCEPTING THIS PERMIT, THE OWN	ANY SYSTEM AND CANNOT GUARANTEE THE PERFORMANCE OF THIS SYSTEM AS DESIGNED. BY NER AND/OR APPLICANT ACKOWLEDGE THAT THE SPECIFICATIONS DETAILED IN THIS DESIGN ARE			
ONE POSSIBLE OPTION AND THAT	THE HCHD WILL REVIEW OTHER PROPOSALS. YOU HAVE THE OPTION TO SEEK THE ADVICE OF A			
NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT				
NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOUDS ARE NOT DISCHARGED TO THE DISPOSAL AREA				
NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE				
elementerizzative-entre la productiva elementerizzative de la compositiva de la compositiva de la compositiva El	SUCCESSFUL OPERATION OF ANY SYSTEM.			
PERMITTEE RESPO	INSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.			
CA	LL 410-313-1771 TO SCHEDULE INSPECTIONS.			

Io/31/17 on the For NATULCO WDTH REFT BOTTOM Io/31/17 on the For NATULCO NUMBER OF RENTS TWOM, Advants NUMBER OF RENTS Io/31 Standar, Portion NUMBER OF RENTS DISTRBUTION BOX BAFFE Io/32 Standar, Portion Standar, Portion DISTRBUTION BOX BAFFE Io/33 Standar, Portion Standar,		NOT TO SCALE		TRENCH/DRAINFIELD DATA
Bornardo NUMBER OF TRENCHES Bornardo Stantup, Norwing NUMBER OF TRENCHES TOTALLENOTH Bornardo Stantup, Norwing Number of the stant Stantup, Norwing Number of the stant Stantup, Norwing Number of the stant of the s			10/31/17 00 000	WIDTH INLET BOTTOM
20' Starbup, Norster Yuns, alarm Sounds. EAT 20' Starbup, Norster Yuns, alarm Sounds. EAT 20' Example Sounds. EAT 20' Starbup, Norster Starbup, Cathicaton 20' Example Sounds. EAT 20' Starbup, Norster Starbup, Sounds. EAT 20' Example Sounds. Eat </td <td></td> <td></td> <td>For Norwego</td> <td></td>			For Norwego	
ABSORPTION AREA THING, ALANTA SOUND J. BOYNER SOUND J. BOYNER SEPTIC TAINS DATA SEPTIC TAINS DATA SEP			Check D. Acrohol	TOTAL LENGTH
36' Sounds: BAT Sounds: BAT Sounds: BAT Nell Sounds: BAT			startings. Normon	ABSORPTION AREA
22 Sounds. EAT Nordel Sounds. EAT Starting cartification Distribution Box BAFLE Nordel Harden Nordel Ha	-		nuns, ararm	DISTRIBUTION BOX LEVEL
startup arthur portion Distribution Box Port received. (C) SEPTIC TANK LEVEL MAX SEPTIC TANK ILEVEL	26		sounds. BAT	DISTRIBUTION BOX BAFFLE
Weiler Weiner Peccived. (C) Weiner State Peccived. (C) Weiner State State State <	naved	E Ly	startup certificatio	DISTRIBUTION BOX PORT
He his as as a set of the set of	vell	House	received, CO	
Service Tank LEVEL 482 MANUACTURE BACKETVCE/ CAPACITY 1200 CAL ^{MO} SEAMLOC TYP TANK LED DEPTH 0.5-12 BAFLES MO BAFLES MO BAFL	48'	u.5' 8.5'		SEPTIC TANK DATA
Reconstruction: Statulation: 7/20/17 House connectives made on site while Nervees tank was left. Statulation: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site while Nervees tank was left. NSTALLATION: 7/20/17 House connectives made on site for her with the second of	2	ET THE		SEPTIC TANK I LEVEL YES
RE-CONSTRUCTION: STALLATION: 7/20/17 House connectives made on site while Nerwees tank was cet. NSTALLATION: 7/20/17 House connectives made on site while Nerwees tank was cet. NSTALLATION: 7/20/17 House connectives made on site while Nerwees tank was cet. NSTALLATION: 7/20/17 House connectives made on site while Nerwees tank was cet. NSTALLATION: 7/20/17 House connectives made on site while Nerwees tank was cet. NSTALLATION: 7/20/17 House connectives made on site while Nerwees tank was cet. NSTALLATION: 7/20/17 House connectives made on site while Nerwees tank was cet. NSTALLATION: 7/20/17 House connectives made on site while Nerwees tank was cet. NSTALLATION: 7/20/17 House connectives made on site while Nerwees tank was cet. No advise of scales or water to site while here had to get of 10/20/17 on site for the site to site while here had to get of 10/20/17 on site for the site to site while here had to get of 10/20/17 on site for the site to site while here had to get of 10/20/17 on site for the site to site while here had to get of 10/20/17 on site for the site to site while here had to get 10/20/17 on site for the site to site while here had to get 10/20/17 on site for the site to site while here had to get 10/20/17 on site for the site to site while here had to get 10/20/17 on site for the to site while here had to get 10/20/17 on site for the to site while here had to get 10/20/17 on site for the to site while here had to get 10/20/17 on site for the to site while here had to get 10/20/17 on site for the to site while here had to get 10/20/17 on site for the to site while here had to get 10/20/17 on site for the to site while here at here here to site and the prove of an here to site while here site here book one site while here at here here to site and to prove of an here prove to site and to prove the here here to site here here to site here here here here	r	PLAT PUC 9		CAPACITY 1200 GAIN
NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives made on site while Nervices task was cet. NSTALLATION: 7/20/19 Howe connectives at all three speces the sec. NSTALLATION: 89 9/20/17 Howe to 3, head is fur above at all three speces task had does and the prove of all three speces to all three speces to all three speces to all the sec. NSTALLATION: 19 7/	4"	NC U" PVC		SEAM LOC TPP
BAFFLES NO BAFFLES NO BAFFLES NO MARHOLE LOC FRONT. MALD, RE GPORT LOC NOME WATER THAT IN 2 SLOTTED NO SLOTTED NO BAFFLES NO WATER THAT NO BAFFLES NO WATER THAT NO BAFFLES NO WATER THAT NO BAFFLES NO WATER THAT NO BAFFLES NO SLOTTED NO BAFFLES NO SLOTTED NO BAFFLES NO SLOTTED NO BAFFLES NO SLOTTED NO BAFFLES NO SLOTTED NO BAFFLES NO SLOTTED NO BAFFLES NO BAFFLE		H.5' 22.5'		TANK LID DEPTH 0.5-1
NSTALLATION: 7/20/12 House connections made on site while Nervices track was cet. NSTALLATION: 7/20/12 House connections made on site while Nervices track was cet. NSTALLATION: 7/20/12 House connections made on site while Nervices track was cet. NSTALLATION: 7/20/12 House connections made on site while Nervices track was cet. No allowed to get the ball of the ball right. NSTALLATION: 7/20/12 House connections made on site while Nervices track was cet. No allowed to get the ball of the ball right. NSTALLATION: 7/20/12 House connections made on site while Nervices track was cet. No allowed to get the ball right. No allowed to get the ball right. NSTALLATION: 7/20/12 House connections made on site while Nervices track was cet. No allowed to get the ball right. No allowed to get the set of the ball right. No allowed to get the set of the ball right. No allowed to get the set of the ball right. No allowed to get the set of the set of the ball right. No allowed to get the set of the		V\ \		BAFFLES NO
Re-CONSTRUCTION: SICH Collers of sides or bottom. Water King Construction: SICH Collers of sides or bottom. Water & Sich and side Nonnees tank was set. North Collers of sides or bottom. Water & Sich and side Nonnees tank was set. North Collers of sides or bottom. Water & Sich and side Nonnees tank was set. North Collers of sides or bottom. Water & Sich and side Nonnees tank was set. North Collers of sides or bottom. Water & Sich and side Nonnees tank was set. North Collers of sides or bottom. Water & S.S. in pump tank hole. Definition of the side of the sid		181 15		MANHOLE LOC FRONT MID RE
NSTALLATION: 7/20/12 House connections made on site while pervees tank was cet. Note on use of site of the bad with the pervees tank was cet. Note on use of site of the bad with the pervees tank was cet. Note on use of site of the bad with the pervees tank was cet. Note on use of site of the bad with the pervees tank was cet. Note on use of site of the bad with the pervees tank was cet. Note on use of site of the bad with the pervees tank was cet. Note on use of site while pervees tank was cet. Note on use of site while pervees tank was cet. Note on use of site while pervees tank was cet. Note on use of site while pervees tank was cet. Note on use of site while pervees tank was cet. Note on use of site while pervees tank was cet. Note on use of the bad with the pervees tank was cet. Note on use of the bad with the bad with the bad was the pervees the bad with the pervees the bad of the pervees the per		A of SHIT		6" PORT LOC NONE
Stotted Sto		45' 40 8		WATERTIGHT TEST NP
NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees tank was cet. NSTALLATION: 7/20/12 House connections made on site while Nonnees to be the second for the form tank holes of the best mark holes of the form tank hole of the best mark holes of the form tank holes of the form tank holes of the best mark holes of the form tank holes		63' to A		SLOTTED No
Biglin marked and to meeting the bed while Nervess task was set. Start Colling (12) those connections made on site while Nervess task was set. NSTALLATION: 7/20/12 those connections made on site while Nervess task was set. NSTALLATION: 7/20/12 those connections made on site while Nervess task was set. Not colling it's the set of the bed wight blue to be the part of the set of th		(Si to 901		DATE ON LID 5-M-17 CATEMP
NANDER LADOR LONG IN The F.M. Internals 24:5' IN The F.M. Internals 24:5' IN The Processing of the		3'4" PVC		PUMP/SEPTICTANK LEVEL 45
North Chine Chine Connections made on site while Nervices tank Nor Cet- North Chine Chine Connections made on site while Nervices tank Nor Cet- North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details as plan decige. Com North Colling (10) what our details are planed to plane tark hole. On North Colling (10) what our details are plane to be appear to be the set of the set		In the A	laterals 24'5'	CAPACITY 1252 GAL
NSTALLATION: 7/20/17 House connections made on site while Nervees tank was set. NSTALLATION: 7/20/17 House connections made on site while Nervees tank was set. NSTALLATION: 7/20/17 House connections made on site while Nervees tank was set. No obvious cracks on sides or bottom. Water @ G.S' in pump tank hole. @ 19/17 m 1/2 For tan to bad onsite for bod regard. April 22, "dep (22" on & shallow and 24" on duy ed. Soil wheel site lower, apple of the set of	1000	In the X	2 1'14' PVC	SEAM LOCTOP
NSTALLATION: 7/20/12 House connections made on site while Norwese tank way set. Sight with a star and to get the start line of the start hole of the start of the set of the se		13.3	1X	TANK LID DEPTH
MANHOLE LOC <u>FEAR</u> "Monifold 10.5' 1'12" PVC ROAD NAME ROAD NAME RE-CONSTRUCTION: 5/17/17 Or site with Adam Browning. Shere know, contradier, and owner, Ohio prosent Such Colling (10) What our distuits as plan disciple. One Such Colling (10) What our distuits as plan disciple. One NSTALLATION: 7/20/17 House connections made on site while Nervices tank was cet- Such Colling (10) What our distuits as plan disciple. One NSTALLATION: 7/20/17 House connections made on site while Nervices tank was cet- Such Colling (10) What our distuits as plan disciple. One NSTALLATION: 7/20/17 House connections made on site while Nervices tank was cet- NO obvious cracks on sides or bottom. Water @ 6.5' in pump tank hole. @ 9/19/17 ^{Am} 11's From tan in body answer @ 6.5' in pump tank hole. @ (20" on distally and 24" on due ed. Soil wired sitt leas, parts full. Cet to carture. Advantation reade to pup that base hold to be advected. See plans) Pump charged to zeellot listiff. Galaxiter advides grand (con) 9/20/17 on site for Startup. Lateral two maps cut to 3' head is just above at all two maps. Holes appear to be free of buors. @ 9/20/17 Bill working on final grading. Fresh topsoil added over	1.000	()	V DI	BAFFLES YES
NSTALLATION: 7/20/17 House connections made on site while Norwees tank was set. NSTALLATION: 7/20/17 House connections made on site while Norwees tank was set. No obvious cracks on sides or bottom. Nater @ 6.5' in pump tank hole. (2) 9/19/17 For tan in bod onsile for bod motol. April 22" dep (20" on dehale and 24" on der ed. 50" and silt loos path fill. Control of the set of th				MANHOLE LOC REAR
NSTALLATION: 7/20/17 House connections made on site while Norwees tank was set. NSTALLATION: 7/20/17 House connections made on site while Norwees tank was set. Such Collins (1402) what our distance and plan during a find NSTALLATION: 7/20/17 House connections made on site while Norwees tank was set. No obvious cracks on sides or bottom. Water @ 6.5' in pump tank hole. @ 9/19/17 The tank in bod onsite for bed motell. April 22" dep (22" on dehallow and 24" on degred. Soil arised soft loads, spotty tall. OK to conflue. Advantationed to gup efforts lose half to be discid. Gen plans) Pump changed to zeallor 12th Contractor adures or and furthings. Holes appear to be free of burs. @ 9/20/17 Bill working on final grading. Fresh topsoil added over		manifold	56' 2 /14'	6" PORT LOC NONE
ROAD NAME ROAD NAME DATE ON LID Pre-CONSTRUCTION: 5/17/17 On site with Adam Province, Steve Kning, Conductor, and own, also present Such Colling (10), What our distance while plan disign. (10). NSTALLATION: 7/20/17 House connections made, on site while Nonveco tank was set. No obvious cracks on sides or bottom. Water @ 6.5' in pump tank hole. (2) 9/19/17 *** 11'2 FM Tan to bob Onsile for bod metall. April 22" dep (20" on defailed and 24" on day and, soil aired site leave sports full. OK to and w. Adjustic mode to pup efforts Dose had to be adjust. (See plans) Pump changed to zullat '12 th Contractor adults, grand (20) 9/20/17 on site for Startup. Lateral turnups cut to 3', head is just above at all turnups. Holes appear to be free of burrs. (29/20/17 Bill working on final grading. Fresh topsoil added over		10.5 112 1		SLOTTED NO
RE-CONSTRUCTION: 5/12/17 Onsite with Adam Boundary, Steve Kneep, Construction, and owner, allo promot Such Colling (1103, What our about as plan design. and NSTALLATION: 7/20/19 House connections made, on site while Nonnece tank was set. No obytous cracks on sides or bottom. Water @ 6.5' in pump tank hole. @ 9/19/17 The I'm ran in bod ansite for bod mytall. April 22" dep (20" on & shallow and 24" on day and, soil aired silt look gotty full. OK to another. Adjustments made, to just above at all turnings. Holes appear to be free of burrs. @ 9/20/17 Bill working on final grading. Fresh topsoil added over		ROAD NAME		DATE ON LID
RE-CONSTRUCTION: 5/17/17 Coste w/ Adam Provide, Steve Knee, constanter, and owner, altro promot Surch Colling (123) What our about us of plan during . for NSTALLATION: 7/20/17 House connections made, on site while Norwees tank was set- no obvious gracks on sides or bottom. Water @ 6.5' in pump tank hole. @ 9/19/17 The I'v ran in bods Onsile for bod Mistell. April 22" dep (20" on & shallow side 24" on day end. Soil adved sitt look, post, foll. OK to anthus. Adjusticate made, to pup Heats Dese had to be apadd. Be plans) Pump changed to zoellor 1/24/17 Bill working on final grading. Fresh topsoil added over	- 44			Purgary: 1/2 hp Zoeller
NSTALLATION: 7/20/17 House connections made on site while Nerwees tank was set- As obvious gracks on sides or bottom. Water @ 6.5' in pump tank hole. @ 9/19/17 4th 11's F.M. ran in bod Onsile for bod motell. April 22" dep (20" on & shallow and 24" on degreed. Soil mixed sift look spott full. OK to anther. Adjudents made to pup Heats Dose had to be apert. (See plans) Pump changed to zoellor 12th . Contractor adures grand (com) 9/20/17 on site for Startup. Lateral turness out to 3' head is just above at all turnes. Holes appear to be free of burrs. [97/20/17 Bill working on final grading. Fresh topsoil added over	RE-CONSTRUCTION:	1 Ada Press Sta	· Vue Coult for	trans with much
NSTALLATION: 7/20/17 House connections made on site while Norwees tank was set- No obvious gracks on sides or bottom. Water @ 6.5' in pump tank hole. @ 9/19/17 4th 11's FM ran in bod. Onsile for bid in tell. April 22" dep (20" on & shallow side 24" on day ed. Soil mixed sitt loois, sports Dill. Or to contine. Adjustments made to pump theats Dose had to be about. Ben plans) Pump changed to zellor 12th Gondactor advides grand (um) 9/20/17 on site for startup. Lateral turnups cut to 3' head is just above at all turnups. Holes appear to be free of burrs. @ 9/20/17 Bill working on final grading. Fresh topsoil added over	5 och Callon (101 West our d	lesterly and also	decina (m)
NSTALLATION: 7/20/17 House connections made on site while Norwees tank was set- no obvious cracks on sides or bottom. Water @ 6.5' in pump tank hole. (2) 9/19/17 11/2 F.M. ran to bob Onsile for bed motal. April. 22" dep (20" on & shallow and 24" on day end. Soil mixed silt look poth Dill. OK to anther. Adjudnut mode to jup Hout Dose hold to be adjud. (Ben plans) Pump changed to could 12 th P. Contractor advide grand (com) 9/20/17 on site for to be free of burrs. [9] 9/20/17 Bill working on final grading. Fresh topsoil added over	Construction of C			3 (0)
NSTALLATION: 7/20/17 House connections made on site while Norwees tank was set- no obvious gracks on sides or bottom. Water @ 6.5' in pump tank hole. @ 9/19/17 112 F.M. ran in bod Onsile for bed motall. April 22" dep (20" on & shallow side 24" on day end. soil adved sitt looks sport fill. OK to astern. Adjuding read, to just above had to be adjud. Be plans) Pump changed to could "http: Contractor advide grand (km) 9/20/17 on site for taxtup. Lateral turnups cut to 3' head is just above at all turnups. Holes appear to be free of purs. @ 9/20/17 Bill working on final grading. Fresh topsoil added over				
NSTALLATION: 7/20/17 House connections made on site while Nervices tank was set- No obvious gracks on sides or bottom. Water @ 6.5' in pump tank hole. @ 9/19/17 The I've ran in bob onsite for bod motall. April 22" dep (20" on & challow side 24" on day and soil mixed sitt looks, sporth till. OK to contrue. Adjusticute made to jump Heats Dose had to be adjust. Bee plans) Pump changed to zollor 12th Contractor advides grand (km) 9/20/17 on site for startup. Lateral turnups out to 3' head is just above at all turnups. Holes appear to be free of burs. @ 9/20/17 Bill working on final grading. Fresh topsoil added over				
NSTALLATION: 7/20/17 House connections made on site while Norwece tank was set- No obvious cracks on sides or bottom. Water @ 6.5' in pump tank hole. @ 9/19/17 4th 112 F.m ran in bod Onstle for bod motall. April 22" dep (20" on & shallow side 24" on deg end. Soil wived silt looks, sports DII. OK to another. Adjustic made to jump Alouts Dose hold to be about. Be plans) Pump changed to zoello 1/2 thP. Contractor advides grand (km) 9/20/17 on site for startup. Lateral turnups out to 3' head is just above at all turnups. Holes appear to be free of purs. 509/20/17 Bill working on final grading. Fresh topsoil added over				
10 obvious cracks on sides or bottom. Water (2 6.5 in pump tank hole. (50) 9/19/17 the 11's F.M. ran in bob Onsile for bod motell. April 22" dep (20" on & shallow side 24" on day end. Soil mixed silt looks, spotts toll. Or to another. Adjustmate mark to jump Alouts Dose had to be adjust. Bee plans) Pump changed to zeello 1/2 HP. Contractor advides grand (120/17 on site for startup. Lateral turnups out to 3' head is just above at all turnups. Holes appear to be free of burrs. 509/20/17 Bill working on final grading. Fresh topsoil added over	NSTALLATION: 7/20	1/17 House connections 1	nade on site while	Norwees tank was set-
9/19/17 45/12 F.M ran in bod Onsile for bid motal. April 22" dep (20" on & shallow side 24" on day end. Soil wired sitt look, sporth till. OK to anthem. Adjustments made to jump offents Dose had to be existed. Ben plans) "Pump changed to zeeller 12thP. Contractor advides grand (Km) 9/20/17 on site for startup. Lateral turnups cut to 3" head is just above at all turnups. Holes appear to be free of burrs. @ 9/20/17 Bill working on final grading. Fresh topsoil added over	no obvious grack	s on sides or lattor	M. Water (2 6.5 11	pump tank hole. (so
(20" on & shallow side 24" on day and. Soil wheed sitt looks sports fill. OK to another. Adjustiments made to jump Alouts Dose had to be adjusted. Gen plans) Pump channed to zoello "http: Contractor advides grand (km) 9/20/17 on site for startup. Lateral turnups out to 3' head is just above at all turnups. Holes appear to be free of burrs. 50 9/20/17 Bill working on final grading. Fresh topsoil added over	9 19 17 RPS 112 F.	~ ran in body o	nsile for bed mos	fall. April 22 dep
Or to createry. Adjustments made to jump Alents Dose had to be adjusted. Gen plans) Pump charged to zoello 1/2 to 3. head is just above at all turnups. Holes appear startup. Lateral turnups cut to 3. head is just above at all turnups. Holes appear to be free of burrs. 509/20/17 Bill working on final grading. Fresh topsoil added over	10.1.11	with 24" on day a	rd. soil mixed sitt	loors spotty fill
Pump channed to zouller 1/2 to P. Contractor adartes grand (10m) 9/20/17 on site for startup. Lateral turnups out to 3' head is just above at all turnups. Holes appear to be free of pupes. 509/20/17 Bill working on final grading. Fresh topsoil added over	(20 on stand	Adjusting made to	gup Alants Dose.	had to be adouted. Bee plans)
startup. Lateral turnups out to 3' head is just above at all turnups. Holes appear to be free of burrs. 509/20/17 Bill working on final grading. Fresh topsoil added over	OK to another.	to zoello 1/2HP. Con	tactor edudes are	ul (Knu) 9/20/17 on site for
to be free of burrs. 509/20/17 Bill working on final grading. Fresh topsoil added over	OK to cartered Pump charged		- V	
	OK to cuture. Pump changed startup. Lateral	twonups out to 3' her	ad is just above at	all turnings. Holes appear

Bill to cut turning

Back River Pre-Cast, LLC PO BOX 329 Glyndon, MD 21071 Phone # 410-833-3394 Fax # 410-833-4116

Letter of Certification

This is to certify that the Norweco Singulair TNT 600 GPD Septic Tank installed at 734 Marriottsville Rd., Marriottsville, MD 21104 July 20, 2017 was installed according to the manufacture's specifications. Installer: Bill Ingram Property Owner: Kerry Stagmer Permit #

THIS CERTIFICATION IS FOR INSTALLATION ONLY. THE 5-YEAR OPERATIONS & MAINTENANCE AGREEMENT FROM DATE OF INSTALLATION WILL ONLY GO INTO EFFECT AFTER BACK RIVER PRE-CAST, LLC RECEIVES FINAL AND FULL PAYMENT FOR THE SYSTEM.

MATTHEW GECKLE Vice-President

	HOWARD COUNTY HEALTH-DEPARTMENT 61452	
Received Trail	mé Home PHONE # 442-213	39
Syca	ratespelve.	19
Francisco R	or Septic lermit/ 731	1
CASH	1 Mainiotsuille RO.	
NO.		
16519	Mince Melindred Menoty Striboli	ars
\$ 3960 K	Received By	- 44
	HOWARD COUNTY HEALTH DEPARTMENT 3197	9
ATTEN D	ID 190109 DOSLAS	2.5
Received Prom	PHONE # 4(13. 8(a) 3	3250
		2
	734- Margaret Buille Rd	
NO.W	thus hundred thister	helle
\$ 330	P Received By (10) MAR	Condits
		1
and the second	HOWARD COUNTY HEALTH DEPARTMENT	55
WATTLE	PHONE # 443-86	4-8.
Received C	anfile Jemenez	
743	Mariallovelle let	22
	For Manor sep us hyper	
CHEC	Serve contract	234
NO.	Frifty feve and 00/100-	Doll
10		12.80



January 3, 2017

Mr. Kevin Wolf Howard County Health Department Well & Septic Program Bureau of Environmental Health 8930 Stanford Blvd. Columbia, MD 21045

RE: Septic System Design & Permit Application 734 Marriottsville Road Tract Marriottsville, 3rd Election District, Howard Co., Maryland PTE #2797

Mr. Wolf;

Enclosed please find the following items required for the issuance of a permit to install an on site sewage disposal system at the above referenced property:

- (3) three copies of the Detailed Low Pressure-Dosed In-ground Bed Design
- (3) three copies of the Design Report
- An Application for On Lot Sewage Disposal System Permit
- Review fee

The septic area has been staked in the field per the enclosed design plans. If you have any questions or concerns please feel free to contact our office.

Respectfully submitted; Penn's Trail Environmental, LLC

Adam B. Browning Division Manager

Enclosure(s)

c.c. Kerry Stagmer Steven Krieg File

Variance Request Fore O Floodplura soils @ Strem Set beck RECEIVEL BAT OFM Asrent



Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045 Main: 410-313-2640 | Fax: 410-313-2648 TDD 410-313-2323 | Toll Free 1-866-313-6300 www.hchealth.org Facebook: www.facebook.com/hocohealth

Twitter: HowardCoHealthDep

Maura J. Rossman, M.D., Health Officer

APPLICATION FOR VARIANCE

TO COMAR ONSITE WATER/SEWER FOR MDE APPROVAL

Date Submitted 3/31/2017

734 Marriottsville Road

Property Address

		0005	0022	0013	03-294293	
Subdivision	Lot	Tax Map	Grid	Parcel	Tax Account #	

Provide a brief site history including previously submitted and active plans with the Health Department or the County (subdivision plans, perc test applications, Building Permit applications):

Property has failing on-site sewage disposal system. Repair area in back of property lpd gravel bed.

Design plans approved from Adam Browning (Penn's Trail Environmental, LLC)

In the area below, list the specific section of the Code of Maryland Regulations (COMAR) to which a variance is being requested and provide a brief summary of the regulation and an explanation of why the variance is being requested (Attach a separate sheet if necessary).

Regul	ation Section	Summary and Explanation
1. 26.04.02.04. J.(8) and (9)		Stream bank greater than 3,000 ft upstream from a water intake on a water
		supply reservoir or intake on a stream used as a potable water supply.
		Water bodies not serving as potable water supplies including intermittent
		and perennial streams. (Need 100' to Stream)

2.	26.04.02.04 1.	An on-site disposal system and replacement area may not be located
		in flood plain soils or on slopes in excess of 25 percent.

Progerty Owner's pignatur	e
F1	A Health Department Use Only
Reviewed by	HCHO Staff 3/31/17
Recommendation:	I Recommended [] Not Recommended HCHDSopervisor HCHDSOPERVISOR HCHDS
Comments/Condition	Design approved with BAT advanced pre-treatment and low pressure dose
gravel bed. County C	& M Agreement required to be recorded. Owner must maintain a service contract on the
treatment system an	d drip system. LPD system. MDE Agreement Required.
Approved by:	Steren R. Krig, LEHS 4/3/2017 MDE Representative Date



February 23, 2017

Mr. Kevin Wolf Howard County Health Department Well & Septic Program Bureau of Environmental Health 8930 Stanford Blvd. Columbia, MD 21045

RE: Septic System Design & Permit Application 734 Marriottsville Road Tract Marriottsville, 3rd Election District, Howard Co., Maryland PTE #2797

Mr. Wolf;

Enclosed please find three (3) copies of the revised In-Ground Pressure-Dosed Bed System (LPD Bed) Design Plans for the above referenced tract as per our recent meeting with Mr. Steven Krieg of the Maryland Department of the Environment.

If you have any questions or concerns please feel free to contact our office.

Respectfully submitted; Penn's Trail Environmental, LLC

Adam B. Browning Division Manager

Enclosure(s)

c.c. Kerry Stagmer Steven Krieg (MDE) File

Wolf, Kevin

From:	Steven Krieg -MDE- <steven.krieg@maryland.gov></steven.krieg@maryland.gov>		
Sent:	Sunday, March 26, 2017 8:18 PM		
To:	Adam Browning		
Cc:	Wolf, Kevin		
Subject:	Comments for LPD Bed for 734 Marriottsville Rd Kerry Stagme		

Adam

Took a quick look.

Plan checks out ok, but are you sure you want to use only a 1.5 inch dia forcemain and manifold? Laterals are 1.25 inch.

Friction loss for 41 gpm thru 1.5 inch pipe is about 10 ft and velocity almost 7 ft/sec. Why not go with 2 inch?

Also, you could have gotten away with distal head at 2.5 ft with pretreated effluent and still keep 1/4 inch holes. Did you look at trying to shorten the hole spacing to something less than 7 ft? We accept up to 10 ft apart, (somewhat of a joke) but just wondering if you can get them closer together for better treatment in the soil.

Just some recommendations. Let us know what you think. I am ok with the plan as is, but I do need a digital copy also.

PS Kevin, I need that variance for the stream setback to the bed and in the floodplain soils.

Steven R. Krieg, LEHS, REHS/RS Regional Consultant for Mid & Western Maryland

On-site Systems Division Wastewater Permits Program Water Management Administration Maryland Department of the Environment 1800 Washington Boulevard, Suite 455 Baltimore, MD 21230-1708

(410) 537-3680 (Office) (410) 537-3163 (FAX)



3/31/2017

Bureau of Environmental Health 8930 Stanford Boulevard, Columbia, MD 21045 Main: 410-313-2640 | Fax: 410-313-2648 TDD 410-313-2323 | Toll Free 1-866-313-6300 www.hchealth.org Facebook: www.facebook.com/hocohealth Twitter: HowardCoHealthDep

Maura J. Rossman, M.D., Health Officer

APPLICATION FOR VARIANCE TO COMAR ONSITE WATER/SEWER FOR MDE APPROVAL

Date Su	bmitted
---------	---------

734 Marriottsville Road

Property Address					
		0005	0022	0013	03-294293
Subdivision	Lot	Тах Мар	Grid	Parcel	Tax Account #

Provide a brief site history including previously submitted and active plans with the Health Department or the County (subdivision plans, perc test applications, Building Permit applications):

Property has failing on-site sewage disposal system. Repair area in back of property lpd gravel bed.

Design plans approved from Adam Browning (Penn's Trail Environmental, LLC)

In the area below, list the specific section of the Code of Maryland Regulations (COMAR) to which a variance is being requested and provide a brief summary of the regulation and an explanation of why the variance is being requested (Attach a separate sheet if necessary).

Regul	ation Section	Summary and Explanation
1.	26.04.02.04. J.(8) and (9)	Stream bank greater than 3,000 ft upstream from a water intake on a water
		supply reservoir or intake on a stream used as a potable water supply.
	Water bodies not serving as potable water supplies including intermittent	
	and perennial streams.	
2.	26.04.02.04 1.	An on-site disposal system and replacement area may not be located

in flood plain soils or on slopes in excess of 25 percent.

MBSA	
Property Owner's Signature	
	Health Department Use Only
Reviewed by	CHO Staff 3/31/17
Recommendation:	[Recommended [] Not Recommended
·	CHUSepervisor 3/31/17 Date
Comments/Conditions:	Design approved with BAT advanced pre-treatment and low pressure dose
gravel bed. County O & N	A Agreement required to be recorded. Owner must maintain a service contract on the
Anna the set of state and shad	

treatment system and drip system.

Approved by:

FILE INQUIRY NOTES

DATE	RESULTS OF REVIEW FOR FILE
3/31/17	met uf Mr. Stagner, Vortance request
	eigned. Decrosed notwor of Versince. Also
	mutored une are ou modet et rens rans for
	this day gov.

Wolf, Kevin

From:Steven Krieg -MDE- <steven.krieg@maryland.gov>Sent:Sunday, March 26, 2017 8:18 PMTo:Adam BrowningCc:Wolf, KevinSubject:Comments for LPD Bed for 734 Marriottsville Rd Kerry Stagmer

Adam

Took a quick look.

Plan checks out ok, but are you sure you want to use only a 1.5 inch dia forcemain and manifold? Laterals are 1.25 inch.

Friction loss for 41 gpm thru 1.5 inch pipe is about 10 ft and velocity almost 7 ft/sec. Why not go with 2 inch?

Also, you could have gotten away with distal head at 2.5 ft with pretreated effluent and still keep 1/4 inch holes. Did you look at trying to shorten the hole spacing to something less than 7 ft? We accept up to 10 ft apart, (somewhat of a joke) but just wondering if you can get them closer together for better treatment in the soil.

Just some recommendations. Let us know what you think. I am ok with the plan as is, but I do need a digital copy also.

PS Kevin, I need that variance for the stream setback to the bed and in the floodplain soils.

Steven R. Krieg, LEHS, REHS/RS Regional Consultant for Míd & Western Maryland

On-site Systems Division Wastewater Permits Program Water Management Administration Maryland Department of the Environment 1800 Washington Boulevard, Suite 455 Baltimore, MD 21230-1708

(410) 537-3680 (Office) (410) 537-3163 (FAX)

Freemon, Robert

From: Sent: To: Subject: Steven Krieg -MDE- <steven.krieg@maryland.gov> Wednesday, January 11, 2017 10:23 PM Freemon, Robert Re: N.O.V. BP

Spencer

Good to hear from you.

The statement you refer to, is not what was said. I told Mr. Stagmer I would talk with the Health Dept about the possibility of allowing him to move forward before the septic system is fixed.

At this point however, I think Jeff and Mike want to hold the issuance of the Building Permit until the septic system is fixed. I support this decision.

Unfortunately, we can't install the septic system until the dry weather and Mr. Stagmer knows that.

On Wed, Jan 11, 2017 at 4:16 PM, Freemon, Robert <<u>rfreemon@howardcountymd.gov</u>> wrote:

Hey Steve,

I received an N.O.V. building permit (B16005441) for 734 Marriottsville Rd. and in the attachments the home owner (Mr. Kerry Stagmer) mentioned you recommending the Health Dept. to allow the building permit. I am not sure how to interpret this seeing that we don't have anything on record stating this. What is your recommendation? I have attached what Mr. Kerry submitted to us.

Robert "Spencer" Freemon

Howard County Health Department

8930 Stanford Blvd. Columbia, MD 21045

Well and Septic Program

Bureau of Environmental Health

Phone: 410-313-6357

Email: rfreemon@howardcountymd.gov

https://www.howardcountymd.gov/Departments/Health/Environmental-Health/Well-and-Septic

Steven R. Krieg, LEHS, REHS/RS Regional Consultant for Mid & Western Maryland

On-site Systems Division Wastewater Permits Program Water Management Administration Maryland Department of the Environment 1800 Washington Boulevard, Suite 455 Baltimore, MD 21230-1708

(410) 537-3680 (Office) (410) 537-3163 (FAX)

On-site Systems Division Webpage

<u>Click here</u> to complete a three question customer experience survey.

Wolf, Kevin

From:	Williams, Jeffrey	
Sent:	Tuesday, January 10, 2017 10:55 AM	
To:	Steven Krieg -MDE-	
Cc:	Wolf, Kevin	
Subject:	RE: Marriottsville, Dorsey Mill Rd	

Sounds good. I'll have kevin do a variance form with the owner for the stream setback and we will do a standard BAT agreement with him. Thanks

From: Steven Krieg -MDE- [mailto:steven.krieg@maryland.gov] Sent: Tuesday, January 10, 2017 10:14 AM To: Williams, Jeffrey Subject: Re: Marriottsville, Dorsey Mill Rd

Dorsey mill--didnt stop by I will try this week.

marriottsville-conventional with variance. I told Kevin yesterday. I wouldn't mind taking a look at the location on the plan of where Adam put it, but Kevin can review the design. I also told Kevin, beds in these soils should always been dry weather install due to smearing.

On Tue, Jan 10, 2017 at 10:06 AM, Williams, Jeffrey <jewilliams@howardcountymd.gov> wrote:

Hi Steve. Left you a voice message as well. Two things:

14718 Dorsey Mill Rd. You were going to swing by there to take a look. That guy has been pestering me. The thing there was sighting with an area that looks promising about 50' from the creek.

734 Marriotsville Rd. We got a design from Browning that appears to be a conventional style LPD with a 4' buffer. Do you want to consider this an I&A because of the stream setback issue? The alternative would be to do a variance request for the setback. If I&A, we will do the I&A agreement and look for a letter from you. Do you want to review the plan as well? The owner is itching to get going. Do you have weather restrictions on installation? Let me know. Thanks

Jeff Williams

Program Supervisor, Well & Septic Program

Bureau of Environmental Health

Howard County Health Dept.

410-313-4261

jewilliams@howardcountymd.gov

CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

Steven R. Krieg, LEHS, REHS/RS Regional Consultant for Mid & Western Maryland

On-site Systems Division Wastewater Permits Program Water Management Administration Maryland Department of the Environment 1800 Washington Boulevard, Suite 455 Baltimore, MD 21230-1708

(410) 537-3680 (Office) (410) 537-3163 (FAX)

On-site Systems Division Webpage

Click here to complete a three question customer experience survey.

Oswald, Hank

From: Sent: To: Subject: Steven Krieg -MDE- <steven.krieg@maryland.gov> Thursday, December 22, 2016 8:22 AM Williams, Jeffrey; Wolf, Kevin; Oswald, Hank 734 Marriottsville Rd

Jeff

Stopped by and spoke to Kerry Stagmer at his property yesterday.

Area for pressure dosed bed has not been significantly disturbed. Im ok with it.

I explained the design process and gave him Adam Browning and Tom Ashton's name. He intends to get right on it.

When I broke the news to him that the system install had to wait until summer due to soil issues, he said is there any way he can get the stop work order lifted so he can commence remodeling on the house. If he has to pay a designer, get a plan submitted or even sign a document agreeing to fix the system, will that be enough to show good effort that he is moving forward. I said I think that would be reasonable but it would need your blessing. If he pays a designer and gets a plan submitted....?

Sieven R. Krieg, LEHS, REHS/RS Regional Consultant for Mid & Western Maryland

On-site Systems Division Wastewater Permits Program Water Management Administration Maryland Department of the Environment 1800 Washington Boulevard, Suite 455 Baltimore, MD 21230-1708

(410) 537-3680 (Office) (410) 537-3163 (FAX)

On-site Systems Division Webpage

<u>Click here</u> to complete a three question customer experience survey.





Penn's Trail Environmental, LLC

21 E. Lincoln Ave. - Suite 160 Hatfield, PA 19440 Phone: (215) 362-4610 Fax: (215) 362-4620 www.pennstrail.com

January 3, 2017

PTE#2797

Index

SYSTEM COMPONENT I.D. #1 – Primary Treatment 1
SYSTEM COMPONENT I.D. #2 - Dose Tank & Pump 1
OPERATION OF SYSTEM 1
OPERATION & MAINTENANCE NOTES 1
COPYRIGHT & INFRINGEMENT STATEMENT 1
MATERIAL SUBSTITUTIONS 1
Appendices

Soil Reporting Forms & Data System Component #1 – Treatment Tank System Component #2 – Dose Tank Maintenance Logs





Design Report

734 Marriottsville Road Tract

Note: "System Component Identification Number (I.D.) below corresponds to numbers as found on the design plan set(s) and Appendices of this report.

SYSTEM COMPONENT I.D. #1 - Primary Treatment

Primary treatment of the sewage will be through a dual compartment septic tank or aerobic treatment plant. For pumping schedule please contact manufacturer or speak with a representative of the permitting agency.

SYSTEM COMPONENT I.D. #2 - Dose Tank & Pump

Design specification sheets are attached.

OPERATION OF SYSTEM

The system has been designed to operate daily all months of the year with minimal user intervention. In the event an alarm sounds or is seen, it is recommend the owner contact the installer and/or manufacturer for inspection, service and if needed repair.

OPERATION & MAINTENANCE NOTES

By this reference the manufactures maintenance agreement, installation manual and the manufacture's owner's manual and requirements, local permitting agency's permit conditions and general regulations as they relate to the Clean Streams Law and Water Quality are hereby incorporated. In the cases of dispute in frequency or necessity of operational procedures, the most restrictive recommendation shall apply.

COPYRIGHT & INFRINGEMENT STATEMENT

This maintenance and operation manual and attached plans are proprietary and copyright[©] 2017 by Penn's Trail Environmental, LLC. The format style and content has been developed solely for the use of the client and/or property owner of the tract specifically identified herein. Duplication, re-use, or generation of reports substantially similar in content, language and format is expressly forbidden. Any other copy or transmission will be considered a violation of copyright protection and subject to recovery of damages as permitted by state and federal statutes.

MATERIAL SUBSTITUTIONS

The materials specified are based on manufacturer's publications and specifications contained herein or by reference. By recognition of continually evolving materials and methods, local availability, costs, as well as contractor experience, substitution is permitted of equivalent and similar materials for the following components: tanks, and electrical devices and float systems.

Pumps have been specifically calculated based on existing and proposed components to operate within an acceptable range of performance without developing diminished or excessive system pressures, thus better assuring long-term components and economical performance. Pumps are not to be substituted without suppliers and manufacturer's approval.



Soil Reporting Forms & Data



.

_



.

4

.

1 F; 11 A/P BrCompacted 100 Loam 16" red & Haven 10R418 82.5 17/2 clay, Øm dKbrn 7.54R 3/2 84' Saturated E 71 17" 101 B 117' FillWith A2 (A) 130 Mottling. Above Next Increasing Fill 9" 10" AVEC ence Br 6 TIME OF 2ND INCH P/F/H STOP 2" DROP BREAK 1" DROP Water START compacted DEPTH TEST # DATE Sac/Loanis. 10" 1:48 12:30:30 12:37:15 16/09 Red Br 11:46:15 11:55:15 9 Saciloam or5 Report 12:39 4 4.5 > 50% 11:44:30 11:51 12:01:30 10/2 F 14" les Rock 5' 3'9" 12:15:3012:19:3012:255/2 A 10 B FIL With C Mottling Aboverdayt oyer 81 Pulled Probably 22" 2:45 E Dense Compacte 26" 3:21:30 3:53:30 2:58 32 BrSaCILDON Red Br REMARKS Saloam OTHERS BACKHOE SANITARIAN SQ. FT/BR_ AVG. PERC TIME 5,5 TEST HOLES USED IN SDA MAX. BOT DEPTH _____ EFFECTIVE SW_ >50% TRENCH WIDTH _____ INLET DEPTH ____ Rock 6

System Component #1 - Treatment Tank

RECEIVED JAN 0 6 2017 Copyright© 2017 Penn's Trail Environmental, LLC. All rights reserved.



.



NORVECO® SINGULAIR® BIO-KINETIC® WASTEWATER TREATMENT SYSTEM MODEL TNT

GENERAL SPECIFICATIONS

The contractor shall furnish and install one complete Singulair Bio-Kinetic Model TNT system for Total Nitrogen Treatment with all necessary parts and equipment as described in the following specifications. Treatment of the domestic wastewater shall be accomplished by the extended aeration process with non-mechanical flow equalization, pretreatment of the influent and filtration of the final effluent. In addition to primary, secondary and tertiary treatment of the wastewater flow, the treatment system shall provide nitrification, denitrification, and if required, chlorination and dechlorination of the effluent prior to discharge. All treatment processes shall be contained within reinforced precast concrete tankage meeting the requirements of ACI Standard 318. The wastewater treatment system shall be a Singulair Model TNT as manufactured by Norweco, Inc., Norwalk, Ohio, USA. Systems utilizing fiberglass, steel, or plastic tankage are subject to flotation when dewatered and shall not be considered for this application.



The wastewater treatment system shall be capable of reducing Total Nitrogen without the addition of chemicals, specialized add-on processes or additional components. Nitrification and denitrification shall be accomplished within the chambers of the treatment system prior to effluent disposal. Biological reduction of nitrogen shall occur naturally by autotrophic bacteria, capable of converting ammonium nitrogen to nitrate and heterotrophic bacteria, capable of transforming nitrate to harmless gas. The treatment system shall include precast concrete tankage providing separate pretreatment, aeration and clarification chambers. Principal items of electro-mechanical equipment shall be a 1725 RPM mechanical aerator, UL listed Service Pro control center with MCD technology, Bio-Static sludge return and Bio-Kinetic tertiary treatment device for flow equalization and final filtration of system effluent.

SNEDLE:

OPERATING CONDITIONS

Total holding capacity of the system shall provide a minimum of 48 hour retention of the daily flow. The pretreatment chamber shall provide at least 18 hour retention, the extended aeration chamber shall provide at least 24 hour retention and the clarification chamber shall provide at least 24 hour retention and the clarification chamber shall provide at least 24 hour retention and the clarification chamber and total system retention time in direct proportion to loading. Design of the system shall include a compartmented tank and non-mechanical flow equalization device to insure successful treatment performance without upset even when the significant runoff period is six hours. Hydraulic design considerations of the system and flow equalization device shall be such that intermittent peak flow factors as high as four shall not upset hydraulic reliability within the system. System performance in compliance with the requirements of NSF Standard 245 shall be recognized by an ANSI accredited third-party laboratory and be approved for use by the local governing regulatory agency.

PRETREATMENT CHAMBER

The pretreatment chamber shall be an integral part of the wastewater treatment system. All domestic wastewater shall be preconditioned and flow equalized while passing through the pretreatment chamber prior to being introduced to the extended aeration chamber. The outlet of the pretreatment chamber shall be equipped with a discharge tee that extends vertically into the liquid so that only the preconditioned equalized flow from the center area of the chamber is displaced to the extended aeration chamber. The discharge tee and transfer port shall be of adequate size to handle a peak flow factor of four without restricting the outlet and disturbing hydraufic displacement to the extended aeration chamber. A removable inspection cover shall be cast into the top of the pretreatment chamber to allow tank and transfer tee inspection. As a safety measure, the uncovered opening shall be small enough to insure that the tank cannot be entered for inspection or service.



AERATION CHAMBER

The extended aeration chamber shall provide in excess of 24 hour retention of the equalized daily flow. The chamber shall be of sufficient size to provide a minimum of 80 cubic feet of tank capacity per pound of applied BOD. The aeration chamber length-width-depth ratio shall be designed to insure uniform tank mixing and provide optimum treatment. The aeration chamber(s) shall be an integral part of the system flow path and constructed of property reinforced 5,000 PSI, 28 day compression strength precast concrete. All castings used to construct the precast concrete tankage shall be monolithic units with external and internal walls incorporated into each section.

FINAL CLARIFICATION CHAMBER

The final clarification chamber shall consist of 5 functionally independent zones operating together to provide satisfactory settling and clarification of the equalized flow. An inlet zone shall be provided and shall dissipate transfer turbulence at the flow inlet of the clarification chamber. Its performance shall also eliminate turbulence in other zones of the clarifier. Liquid shall be hydraulically displaced from the inlet zone to the sludge return zone. Hydraulic currents shall sweep settled sludge from the hoppered walls and return these solids via the inlet zone to the aeration chamber. As solids are removed, liquid is displaced to the hopper zone of the clarifier. In this zone, settling by gravity takes place. Three of the four sidewalls are slanted to form a

hopper which directs all settled material back to the sludge return zone. Clarified liquid from the hopper zone shall be displaced into the final settling zone to provide additional clarification of the liquid. The liquid is finally displaced to the outlet zone for final filtration and discharge from the system. Non-mechanical equalization of the flow, through all 5 independent zones, shall provide optimal settling and clarification.

BIO-STATIC® SLUDGE RETURN

A Bio-Static sludge return shall be installed into the cast-in-place opening(s) in the aeration/clarification chamber wall to provide positive return of settled solids. Aeration chamber hydraulic currents shall enter the sludge return(s) and be directed into the sludge return zone of the clarification chamber. The Bio-Static sludge return shall accomplish resuspension and return of settled solids without disturbing the clarified liquid in the final settling zone and outlet zone.



MECHANICAL AERATOR

Each Singulair aerator shall be installed in a concrete aerator mounting casting above the aeration chamber. Fresh air shall be supplied through a molded plastic vent assembly cast into the concrete access cover above the aerator. The Singulair aerator shall include plated mounting brackets, NEMA 6 rated electrical connector, UL recognized fractional horsepower motor, molded



14

plastic lifting handle, molded plastic air intake screens, molded plastic foam restrictor, stainless steel aspirator shaft and molded glass-filled nylon aspirator tip. The motor shall contain precision manufactured o-ring type seals installed between the motor shell and the machined aluminum endbells to insure watertight integrity is maintained. Molded Viton elastomer shaft seals shall be utilized to protect the bearings from contamination. Only the stainless steel aspirator shaft and glass-filled nylon aspirator tip shall be installed in contact with the liquid. There shall be no submerged electrical motors, bearings or fixed air piping in the aeration system. Singulair aerator motors shall be designed not to exceed the motor nameplate rating when installed and operated as recommended for the system. The fractional horsepower aerator motor shall be equipped with a foam restrictor to protect the motor against high water and foam. The motor shall be 4 pole, 1725 RPM, 115 volt, 60 Hertz, single phase, ball bearing constructed with a 1.0 service factor. It shall draw less than 4.0 amps when operating at the rated nameplate voltage. Aerator motors without UL recognition have not demonstrated compliance with international electrical standards for safety and reliability and shall not be considered for this application.

BIO-KINETIC®

SERVICE PRO® CONTROL CENTER

The Service Pro electrical control center with MCD technology shall provide Monitoring, Compliance and Diagnostic functions for the Singulair treatment plant using a microprocessor based platform. The Service Pro control center shall contain nonvolatile memory to prevent loss of programming in the event of a power failure. The pre-wired controls shall be mounted in a lockable NEMA rated enclosure designed specifically for outdoor use. Each Service Pro control center shall be a UL listed assembly and shall include a factory-programmed timer, alarm light, reset button, power switch, power light, phone light, aerator alarm light and three auxiliary alarm lights. The control center shall monitor all treatment system operating conditions including aerator over current, aerator under current and open motor circuit. In the event the control center detects one of these conditions, power to the aerator shall be interrupted, a diagnostic sequence shall begin and the visual alarm shall activate. After a programmed recovery interval, an automatic restart attempt shall be initiated. If normal aerator operation does not resume during 24 programmed recovery and restart cycles, the audible alarm shall activate and the



telemetry system shall report the specific condition to the Service Pro monitoring center. In the event that any of the auxiliary inputs detect abnormal operation of the treatment system auxiliary equipment, the audible and visual alarms shall immediately activate and the telemetry system shall report the alarm condition to the monitoring center. The service provider shall automatically be notified by the Service Pro monitoring center of the specific alarm condition using phone, fax or email.

AERATOR TIME CYCLE

A factory-programmed timer built into the Service Pro control center shall provide a total of twelve hours of aerator operation per day. The non-adjustable timer shall create a 60 minute aeration cycle followed by a 60 minute anoxic cycle during which the aerator shall be off. Use of an aerator timer can seriously affect system performance and operating cost. Systems that have not



www.servicepromcd.com

been performance certified, at a timed aeration cycle, by an independent ANSI accredited testing laboratory shall not be considered for this application.

SERVICE PRO® MONITORING CENTER

The Service Promonitoring center shall include a 128 bit encrypted password protected website for interface with the monitoring center database. Access to the secure website shall be obtained through a unique user name and password that provides tiered access to data from monitored treatment systems. Access level tiers shall include distributors, service providers, regulatory agencies and individual system owners. Distributors and service providers shall be able to create accounts, maintain service records and grant regulatory agencies access to the information. Individual system owners shall be able to view information regarding their own wastewater treatment systems, as well as download and print instructional information. Integrity of stored data shall be maintained through the use of multiple servers operating in geographically isolated locations.

SPECIFICATIONS

BIO-KINETIC® SYSTEM

A Bio-Kinetic system shall be installed in the mounting casting(s) above the clarification chamber. Each Bio-Kinetic system shall provide non-mechanical flow equalization through all plant processes including pretreatment, aeration, clarification, tertiary filtration, chlorination and dechlorination. The assembly shall be supplied with locking lugs and removable moisture/vapor shield and shall consist of a decise flow and page flow micronically melded filter.

and shall consist of a design flow and peak flow micronically molded filter, baffled perimeter settling zone, flow distribution deck, lifting handles, level indicator, adjustment lugs, optional chlorination feed tube, unbaffled perimeter settling zone, solids contact zone, vertical inlet zone, compartmented settling zone consisting of 42 baffled chamber plates, effluent stilling well, final discharge zone, adjustable outlet weir, optional dechlorination feed tube, outlet zone and gasketed discharge flange. All components shall be manufactured from inert synthetic materials or rubber, assembled in circular fashion and connected to a plastic outlet coupling. The outlet coupling shall accept a 4" diameter, Schedule 40, PVC pipe, Each Bio-Kinetic system shall be installed with the inverts of the design flow equalization ports located at the normal liquid level of the clarifier. If intermittent flow rates exceed the capacity of the design flow ports, flow shall be held upstream until the intermittent flow dissipates. If the intermittent flow continues to increase, the liquid level may reach a pair of sustained flow equalization ports. With four ports in use, flow through the system increases while continuing to provide flow equalization to all upstream and downstream processes. Peak flow equalization ports are supplied but should not be required in a property sized system. Optional Blue Crystal and Bio-Neutralizer tablet feed tubes shall be positioned such that the flow-activated chemical cannot make contact with the liquid upstream of the feed tubes.



FLOW EQUALIZATION

The wastewater treatment system shall include a non-mechanical, demand use, flow equalization device. The device shall control normal residential flow rates and reduce typical residential flow surges. The flow equalization rate shall be dependent upon the specific loading pattern and the duration of flow surges. At the 600 gallon per day design loading schedule of NSF Standard 40 and NSF Standard 245, minimum performance of the device shall equalize daily flow an average of 50%.

BLUE CRYSTAL® CHLORINATION SYSTEM (Optional)

The Singulair system shall be furnished complete with a tablet feeder and a six month supply of Blue Crystal disinfecting tablets. Blue Crystal tablets shall be specifically formulated for consistent chlorine dosage and effluent disinfection to the sustained, variable and intermittent flows that are typical of domestic wastewater freatment systems. The tablets shall be manufactured from pure calcium hypochlorite and contain a minimum of 70% available chlorine. Each tablet shall be $2^{6}/s^{*}$ diameter, compressed to a 1" thickness, weigh approximately 5 ounces and be white in color with blue crystals for easy identification. The tablets shall dissolve in direct proportion to the flow rate, releasing controlled amounts of chlorine.

BIO-NEUTRALIZER® DECHLORINATION SYSTEM (Optional)

The Singulair system shall be furnished complete with a tablet feeder and a six month supply of Bio-Neutralizer dechlorination tablets. The dechlorination tablets shall contain active ingredients specially formulated to chemically neutralize both free and combined chlorine. Each tablet shall be 2% diameter, compressed to a ¹³/₁₆ thickness, weigh approximately 5 ounces and be green in color for easy identification. The tablets shall dissolve slowly, releasing controlled amounts of chemical for the instantaneous removal of residual chlorine from the system effluent.

WARRANTY AND EXCHANGE PROGRAM

The manufacturer shall provide a three year limited warranty for each Singulair aerator, Service Pro control center and Bio-Kinetic system purchased from the manufacturer. A comprehensive exchange program offers Singulair owners a lifetime of equipment protection. The distributor shall provide warranty and exchange program details to the regulatory agency, contractor and customer as required.



DISTRIBUTED LOCALLY BY:

EQUIPMENT MANUFACTURER

The equipment specified herein shall be the product of a manufacturer having a minimum of seven years experience in the construction of prefabricated wastewater treatment equipment and systems. Bids shall be prepared on the basis of the equipment and material specified herein for purposes of determining the low bid. This is not done, however, to eliminate other products or equipment of equal quality and efficiency. If equipment is to be substituted, approval of such substitution must be made prior to execution of any order. It is assumed that substitution will result in a reduction of cost to the contractor and that if accepted, these savings will be passed along by a reduction in the base bid.

Designation: Model TNT	500 GPD	750 GPD	1000 GPD	1250 GPD	1500 GPD
Daily Treatment Capacity (Gallons Per Day)	500/600	750/800	1000	1250	1500
Total System Capacity (Gallons)	1300	1600	2300	2850	3400
Number of Singulair Aerators	1	1	2	2	2
Number of Bio-Kinetic Systems	1	2	2	3	3
Number of Bio-Static Sludge Returns	1	1	1	2	2
Drawing Number (PC-5-)	7103	7065	7067	7068	7069

SINGULAIR® MODEL TNT DATA CHART

PROGRESS THROUGH SERVICE SINCE 1906



Engineering the luture of water and wastewater treatment

220 REPUBLIC STREET NORWALK, OHIO, USA 44857-1156 TELEPHONE (419) 668-4471 FAX (419) 663-5440 www.norweco.com

Norweco[®], Norweco.com[®], Singulair[®], Modulair[®], Travalair[®], Singulair Green[®], Lift-Rail[®], Microsonic[®], Bio-Dynamic[®], Bio-Sanitizer[®], Bio-Neutralizer[®], Bio-Kinetic[®], Bio-Static[®], Bio-Gem[®], Bio-Max[®], Bio-Regeneration[®], Bio-Perc[®], Blue Crystal[®], ClearCheck[®], ChemCheck[®], Service Pro[®], Grease Buster[®] and "BUSTER" logo[®] are registered trademarks of Norwalk Wastewater Equipment Company, Inc. ©MMX NORWECO. INC

SINGULAIR® BIO-KINETIC® WASTEWATER TREATMENT SYSTEM WITH SERVICE PRO® CONTROL CENTER

MODELS 960 AND TNT OWNER'S MANUAL

INTRODUCTION

The Singulair system is the finest equipment available and utilizes the most up-to-date wastewater treatment technology. It is a sound investment that protects you and the environment. Please take the time to familiarize yourself with the contents of this manual.

HOW THE SINGULAIR® SYSTEM WORKS

Developed to serve homes and small businesses beyond the reach of city sewers, the Singulair system employs the extended aeration process. Similar to the treatment method

FEATURES AND ADVANTAGES

Singulair tanks are reinforced precast concrete, manufactured by the licensed Norweco distributor. Internal walls and baffles are cast-in-place to insure uniformity and maximum strength. Risers and access covers are either heavy duty plastic or concrete construction. All components within the system that will contact the wastewater are constructed entirely of molded plastic, stainless steel or rubber.

The Singulair aerator is powered by a 1725 RPM, 115 volt, 60 hertz, single-phase, fractional horsepower motor. It is the only electrically powered component in the Singulair

used by most municipal wastewater treatment facilities, this process involves a natural, biological breakdown of the organic matter in wastewater.

Wastewater enters the pretreatment chamber where anaerobic bacterial action combines with the effects of gravity to precondition the waste before it flows into the aeration chamber. Once in the aeration chamber, aerobic bacteria utilize the organic matter in the wastewater to biologically convert the waste into stable



system. The aerator has been designed specifically for use in the Singulair system. It costs less to operate and consumes fewer kilowatt hours of electricity than most major appliances.

Singulair aerators are supplied with a Service Pro control center with MCD technology. The NEMA rated control center contains a power switch and time clock that control aerator operation. The local distributor's name, address and telephone number are displayed on the control center cover.

substances. Following aeration, flow is transferred to the clarification chamber where the effects of gravity settle out biologically active material. The Bio-Static sludge return, located in the clarification chamber, creates hydraulic currents that gently transfer settled particles back to the aeration chamber. As clarified liquids pass through the Bio-Kinetic system, they are filtered, settled and flow equalized. As a result, complete pretreatment, aeration, clarification and final filtration are assured. The Singulair system reliably protects you, your property and the environment. All system controls and necessary owner information are conveniently located at your fingertips.

Non-mechanical flow equalization and final filtration is accomplished within the Singulair tank by the Bio-Kinetic system. This revolutionary device is installed in the clarification chamber and connected to the system outlet. Optional chlorination and dechlorination may be included in the Bio-Kinetic system if required. All Singulair components work together to assure complete pretreatment, aeration, clarification and final filtration.

SINGULAIR® SYSTEM PERFORMANCE

Rivaling the performance of the most advanced wastewater treatment plants in the world, the Singulair system complies with USEPA wastewater treatment guidelines for secondary treatment systems and meets all requirements of NSF/ANSI Standard 40. In ecologically sensitive areas, the most stringent effluent standards are 10 mg/L CBOD and 10 mg/L TSS. Rated Class I after successfully completing the 7 month Standard 40 test protocol, the Model 960 system averaged effluent of 6 mg/L CBOD and 10 mg/L TSS. The Model TNT system averaged effluent of 4 mg/L CBOD, 9 mg/L TSS and 12 mg/L Total Nitrogen.

OPERATIONAL REQUIREMENTS

The Singulair system is designed to treat only domestic wastewater. Domestic wastewater is defined as the waste generated from a typical residence. This includes flows originating from: bathtubs, clothes washers, dishwashers, drinking fountains, water coolers, food grinders, kitchen sinks, lavatories, mop basins, service sinks, shower stalls, sinks, wash sinks, water closets and whirlpool baths. While the use of bio-degradable detergents is recommended, the Singulair system has been designed to handle any reasonable amount of bathroom, kitchen or laundry waste. However, some care should be exercised to insure that nonbiodegradable and/or toxic materials are not disposed of via the domestic wastewater plumbing. Do not use the plumbing system for disposal of lint, cooking grease, scouring pads, diapers, sanitary napkins, cotton balls, cotton swabs, cleaning rags, dental floss, strings, cigarette filters, rubber or plastic products, paints and thinning agents, gasoline, motor oil, drain cleaners or other harsh chemicals. These items could plug portions of the plumbing, interfere with biological treatment, accumulate in the treatment system and adversely affect system performance. Never connect roofing down spouts, footer drains, sump pump piping, garage and basement floor drains or water softener backwash to the domestic wastewater plumbing or the treatment system. Water softener backwash will interfere with biological treatment and must be disposed of separately.

ELECTRICAL REQUIREMENTS

Each Singulair control center must be wired to a dedicated 115 VAC, single-phase circuit at the main electrical service panel. A 15 amp circuit is recommended (10 amp minimum). A pictorial wiring diagram is provided inside the control center enclosure. All electrical work must be performed in accordance with the requirements of the National Electrical Code and all applicable local codes. Electrical connections should be made only by a qualified electrician following proper procedures and using safe tools.

CAUTION: Any time service is required, first shut off the dedicated circuit breaker in the main electrical service panel. Next, shut off the power switch in the Singulair control center. Failure to do so could result in personal injury or equipment damage.

SINGULAIR® AERATOR

The aerator has been specifically designed for use in the Singulair system and includes special alloy and molded plastic parts to prolong aerator life. Aerator bearings are pre-lubricated and sealed. Singulair aerators are installed in a concrete mounting casting above the aeration chamber. Fresh air enters the aerator through four intake ports located under the aerator handle. The air is drawn down the hollow aspirator shaft where it is introduced below the liquid surface. Only the molded plastic aspirator and the lower portion of the stainless steel aspirator shaft are submerged.

The aerator is not designed to run under water and will automatically shut off if a high water condition occurs. If the liquid rises to the level of the foam restrictor, the control center will shut off power to the aerator. Next, an automatic diagnostic sequence begins, as outlined in the section titled "Service Pro Control Center".



Each Singulair aerator is a precision engineered electro-mechanical device. Do not remove it from its installed position. Do not attempt any type of repair. Contact your Singulair service provider if service is needed. Unauthorized tampering or repair will void important provisions of the limited warranty and exchange program.

FRESH AIR VENTING SYSTEM

An aerator vent assembly is cast into the concrete access cover above each aerator. The vent assembly supplies fresh air to the aerator, which is drawn through the aspirator and into the wastewater. Finished landscaping should be maintained six inches below the top of the vented access cover and graded to drain runoff away from the cover. Do not allow plants, shrubbery, mulch or landscaping of any type to restrict the flow of air to the vent assembly or obstruct the access cover.



SERVICE PRO® CONTROL CENTER

Every Singulair aerator is supplied with a prewired UL Listed Service Pro control center featuring MCD technology to permit fully automatic aerator operation. The control center provides MONITORING, COMPLIANCE and DIAGNOSTIC functions complete with telemetry for communication with the Service Pro remote monitoring center. If an alarm condition occurs for any reason within the Singulair system or monitored auxiliary equipment, the red alarm light will flash. If aerator operation has been interrupted, the Service Pro control center will attempt to restart the aerator every five minutes for two hours. If the aerator does not restart after two hours, the audible alarm will sound. If the Singulair system is covered by a Service Pro monitoring agreement. the Singulair service provider will be automatically notified and the alarm condition will be displayed on the remote monitoring center website, www.servicepromcd.com. Each control center for the Model 960 treatment system is supplied with a time clock adjustable in five minute increments up to continuous run. This clock is factory preset to run 30 minutes per hour and should only be adjusted by an authorized Singulair service provider. Each control center for the Model TNT system is supplied with a non-adjustable time clock.

SERVICE PRO® MONITORING CENTER

When connected to a telephone line, the control center will automatically notify the Service Pro monitoring center of any service required by the Singulair system or accessory components. The Service Pro monitoring center will automatically record the time and date of any alarm condition and post this information to your system's history record accessible at www.servicepromcd.com. The monitoring center will also notify your Singulair service provider that the system needs attention and record the time and date when service is performed. All information regarding your system is available to you on the secure, password protected Service Pro website. Contact your Singulair service provider for your user name and password. NOTE: The control center regularly communicates with the Service Promonitoring center using your telephone line and a toll free number. If the control center is using the line when you attempt to place a call, a high pitched digital communication signal will be heard. Hang up all telephones sharing the line and wait a few seconds. This will automatically disconnect the control center and make the line available for use.

BIO-STATIC® SLUDGE RETURN

Each Bio-Static sludge return is installed in the aeration/ clarification chamber wall. Aeration chamber hydraulic currents enter the sludge return(s) and transfer solids from the clarification chamber back to the aeration chamber for additional treatment. The Bio-Static sludge return accomplishes resuspension and return of settled solids without disturbing the contents of the clarification chamber.

BIO-KINETIC® SYSTEM

Bio-Kinetic systems provide non-mechanical flow equalization through all plant processes. The Bio-Kinetic system contains 3 separate filtration zones, 8 independent settling zones, optional chlorination and dechlorination tablet feed systems and serves as its own chlorine contact chamber. When used with Blue Crystal disinfecting tablets, the performance of the Bio-Kinetic system as a chlorination device is certified to NSF/ANSI Standard 46, Section 11. All components are manufactured from plastic or rubber. Your service provider has the necessary training, tools and equipment for removal and cleaning. If your Bio-Kinetic system is in need of service, contact your service provider. During each semi-annual service inspection, your service provider will remove and clean the Bio-Kinetic system or replace it with a unit from their service stock.



NON-MECHANICAL FLOW EQUALIZATION

The patented design of the Bio-Kinetic system provides non-mechanical flow equalization for the Singulair wastewater treatment plant. Equalization reduces incoming hydraulic surges (e.g. typical shower of 10 minutes duration, bathtub discharge of 5 minutes duration, clothes washer discharge of 2 minutes duration and dishwasher discharge of 2 minutes duration) throughout the system. The flow equalization provided by the Bio-Kinetic system causes wastewater to be held upstream of the final outlet during hydraulic surges, which preserves treatment integrity and enhances system operation. The actual rate of equalization varies and depends upon specific loading patterns and the duration of each flow surge. At the design loading pattern used during the NSF/ANSI Standard 40 performance evaluation, the Singulair system equalizes all flow an average of 48%. As a result, hydraulic surges and periods of high wastewater flow are automatically reduced to protect the environment and all treatment plant processes on a demand use, as needed, basis,

BLUE CRYSTAL® RESIDENTIAL DISINFECTING TABLETS

If local regulations require, an initial supply of Blue Crystal disinfecting tablets will be placed in the Bio-Kinetic system chlorine feed tube(s) at system start-up. Specifically formulated for use in the Singulair system, Blue Crystal disinfecting tablets provide efficient and reliable disinfection when effluent chlorination is desirable. Manufactured from calcium hypochlorite, Blue Crystal disinfecting tablets provide effective, economical bacteria killing power. Liquid entering the Bio-Kinetic system contacts the installed Blue Crystal disinfecting tablets, just downstream of the equalization ports. A fully charged feed tube will last an average of six months. During each semi-annual inspection, your Singulair service provider will check system operation, the rate of tablet consumption and install tablets during routine service inspections.

NOTE: USEPA guidelines state "On the average, satisfactory disinfection of secondary wastewater effluent can be obtained when the chlorine residual is 0.5 ppm after 15 minutes contact." Retention time must comply with the controlling regulatory jurisdiction.

CAUTION: The improper handling of Blue Crystal tablets may cause personal injury or property damage. Keep out of the reach of children and do not allow the tablets or feed tube to contact skin, eyes, or clothing. Tablets may be fatal if swallowed and tablet dust is irritating to the eyes, nose and throat. Do not handle the tablets or feed tubes without first carefully reading the product container label, MSDS information and the handling and storage instructions. Mixing of chemicals may cause a violent reaction leading to fira or explosion. For additional information about Blue Crystal tablets contact your Singulair service provider.

BIO-NEUTRALIZER® DECHLORINATION TABLETS

In environmentally sensitive areas, environmental reputations may require the use of Bio-Neutralizer dechlorination tablets. Manufactured as an efficient and dependable means to chemically neutralize both free and combined chlorine. Bio-Neutralizer dechlorination tablets provide consistent reduction or elimination of chlorine residual without unnecessarily reducing the level of dissolved oxygen in the treatment system effluent. Bio-Neutralizer dechlorination tablets utilize a unique chemical mixture for chlorine reduction and environmental protection. As liquid passes through the final discharge zone of the Sio-Kinetic system, the flow contacts the installed Bio-Neutralizer tablets and residual chlorine is removed from the system effluent. A fully charged Bio-Neutralizer feed tube will last an average of six months. During each semi-annual inspection, your Singulair service provider will check system operation, the rate of tablet consumption and install tablets during routine service inspections.

CAUTION: Bio-Neutralizer tablets or feed tubes should not be mixed with Blue Crystal tablets. Do not handle the tablets or feed tubes without first carefully reading the product container label, MSDS information and the handling and storage instructions. For additional information about Bio-Neutralizer tablets contact your Singulair service provider.

NO OWNER MAINTENANCE

The Singulair system is inspected and serviced by a local, factory-trained service provider, therefore, no owner maintenance is required during the warranty period. The Singulair system does not require pumping as often as a septic tank. Under normal use only the pretreatment chamber should be pumped. How often pumping is necessary depends on system use. The local Singulair service provider will inspect the aeration chamber contents and plant effluent at six month intervals to determine if the pretreatment chamber is discharging excessive solids. Every three years, the pretreatment chamber should be inspected. The pretreatment chamber will normally require pumping at three to five year intervals. Contact your local service provider prior to tank pumping for complete information on removal of equipment, access to individual chambers, coordination of services and proper disposal of tank contents. A tank pumping service licensed by the local regulatory agency must be used for removal and disposal of tank contents. The tank pumper should consult with local authorities to determine the proper disposal method.

If a period of intermittent use, or an extended period of non-use of the Singulair system is anticipated, contact your Singulair service provider for instructions. Your service provider has comprehensive Singulair service instructions and has been factory-trained in troubleshooting procedures. Contact your service provider if you require service or information regarding tank pumping.

SINGULAIR® SERVICE PROGRAM

Semi-annual service inspections, at six month intervals for the first two years of system operation, are provided by your local Norweco distributor and are included in the original purchase price of the Singulair system. Costs for travel and labor are not charged to the owner. During an inspection, each mechanical aerator, Bio-Kinetic system and other plant components are serviced as outlined in the Singulair Service Manual. After the initial two year service program is completed, the local service provider will provide continued service at the owner's option. The service program should be renewed by the owner to insure maximum system performance.



Ask your Singulair service provider about a renewable service contract. If you allow service coverage to expire, you can still obtain the professional assistance of a factory-trained technician. However, these special service calls will be performed on a time and materials basis. Professional service is important to proper system operation and should not be allowed to lapse. Be sure to consider the advantages of a renewable service contract.

WHY HEALTH DEP

The Singulair service provider will perform the following services during each service inspection:

- Check aerator operation
- Check aerator power consumption
- Check aerator air delivery
- Clean stainless steel aspirator shaft
- Clean aspirator tip
- Clean fresh air vent in concrete cover
- Inspect aeration chamber contents
- Check operation of control denter
- Adjust time clock when required
- Remove the Bio-Kinetic system
- Scrape the clarification chamber
- Inspect the Bio-Static sludge return

- Inspect outlet coupling
- Install a clean Bio-Kinetic system
- Fill Blue Crystal feed tube
- ✓ Fill Bio-Neutralizer feed tube
- Inspect effluent quality
- Inspect outlet line
- C, Inspect ground water relief point
- Inspect effluent disposal system
- Complete 3-part service record
- Hang owner's record on front door
- Enter record into www.servicepromcd.com
- Mail health department notification

WARRANTY REGISTRATION

A Warranty Registration Card was included with the Model 206C aerator before it was shipped from the factory. If this card has not been returned to Norweco, complete and mail it immediately. If it is not returned within thirty days of the installation date, the three year limited warranty and lifetime aerator exchange program will begin on the date of component shipment from the factory.

Remove the aerator model number and serial number record card and store it in a safe location with this Owner's Manual for future reference. If it is necessary to call your service provider for service, make note of the information on the control center data plate and the aerator serial number before calling. Warranty and service records are cross-indexed by owner name, aerator serial number or control center serial number. Supplying the aerator serial number and control center serial number with the service request will give the service provider a ready reference so that changes in system ownership will not delay service.

SINGULAIR® LIMITED WARRANTY

The Singulair aerator enjoys the distinction of being the only aerator on the market today backed by a lifetime warranty and exchange program. Each Singulair aerator, Service Pro control center, Bio-Kinetic system and any other components manufactured by Norweco, are warranted to be free from defects in material and workmanship, under normal use and service, for a period of three years from the date of purchase. The three year limited warranty is included in the original purchase price of every Singulair system. The comprehensive aerator exchange program offers Singulair owners a lifetime of protection. Owners with a Singulair system may exchange any aerator of any age for a replacement unit at a prorated cost. If the Singulair aerator or Service Pro control center fails, do not use or dismantle the unit. The local, licensed distributor has detailed warranty and exchange information and should be contacted for service or replacement instructions.

DISTRIBUTED LOCALLY BY:

SERVICE PRO® SECURITY LOG IN

For your convenience, record your www.servicepromcd.com access information here:

		the second se
User name:	Password:	

SUPPLEMENTAL SERVICE RECORD

For your reference, please document service performed on the following chart:

DATE	DESCRIPTION



Engineeting the luture of water and wastewater treatment

220 REPUBLIC STREET NORWALK, OHIO, USA 44857-1156 TELEPHONE (419) 668-4471 FAX (419) 663-6440 www.norweco.com

Norweco[®], Norweco.com[®], Singulair[®], Modulair[®], Travalair[®], Singulair Green[®], Lift-Rail[®], Microsonic[®], Bio-Dynamic[®], Bio-Sanitizer[®], Bio-Neutrallzer[®], Bio-Kinetic[®], Bio-Static[®], Bio-Gem[®], Bio-Regeneration[®], Bio-Perc[®], Blue Crystal[®], Bio-Max[®], ClearCheck[®], ChemCheck[®], Service Pro[®], Grease Buster[®] and "BUSTER" logo[®] are registered trademarks of Norwalk Wastewater Equipment Company, Inc. System Component #2 – Dose Tank



•

٠

2

×





Pump Specifications

FL50 Series 1/2 hp Submersible Effluent Pump





Flow (Liters Per Minute)



FL50-Series Dimensional Data





FL50-Series Electrical Data

MODEL	НР	VOLTAGE	PHASE	FULL LOAD AMPS	LOCKED ROTOR AMPS	THERMAL OVERLOAD TEMP	STATOR WINDING CLASS	CORD LENGTH FT	DISCHARGE	AUTOMATIC	WGT.
FL51A	1/2	115	1	12	48.6	120°C 248°F	8	10	1 ½ OR 2"	YES	53 lbs.
FL51A-2	1/2	115	1	12	48.6	120°C 248°F	B	25	1 ½ OR 2"	YES	55 lbs.
FL51A-3	1/2	115	1	12	48.6	120°C 248°F	В	35	1 ½ OR 2"	YES	58 lbs.
FL51M	1/2	115	1	12	48.6	120°C 248°F	В	10	1 1/2 OR 2"	NÖ	52 lbs.
FL51M-2	1/2	115	1	12	48.6	120°C 248°F	B	25	1 ½ OR 2"	NO	53 lbs.
FL51M-3	1/2	115	1	12	48.6	120°C 248'F	В	35	1 ½ OR 2"	NO	55 lbs.
FL52A	1/2	208-230	1	6.5	24.1	120°C 248°F	В	10	1 ½ OR 2"	YES	53 lbs.
FL52A-2	1/2	208-230	1	6.5	24.1	120°C 248'F	8	25	1 ½ OR 2"	YES	55 lbs.
FL52A-3	1/2	208-230	1	6.5	24.1	120°C 248'F	8	35	1 ½ OR 2"	YES	58 lbs.
FL52M	1/2	208-230	1	6.5	24.1	120°C 248°F	В	10	1 ½ OR 2"	NO	52 lbs.
FL52M-2	1/2	208-230	1	6.5	24.1	120°C 248°F	В	25	1 ½ OR 2"	NO	53 lbs.
FL52M-3	1/2	208-230	1	6.5	24.1	120°C 248°F	B	35	1 1/2 OR 2"	NO	55 lbs.

FL50-Series Technical Data

IMPELLER	MULTI-VANE CAST IRON
PAINT	POWDER COAT
SOLIDS HANDLING CAPABILITY	3/4"
MAX LIQUID TEMP	60°C 140°F
MAX STATOR TEMP	130°C 266°F
THERMAL OVERLOAD	120°C 248°F
POWER CORD TYPE	SJTW (1-PH) or SEOOW (3-PH), or SJOOW (35' - 1PH)
MOTOR HOUSING	CLASS 25 CAST IRON
VOLUTE	CLASS 25 CAST IRON
IMPELLER	CLASS 25 CAST IRON
SHAFT	STAINLESS
HARDWARE	STAINLESS
ORINGS	BUNA N
MECHANICAL SEAL	UNITIZED CERAMIC CARBON

2

.

.

FL50-Series Specifications

1.01 GENERAL:

The contractor shall provide labor, material, equipment, and incidentals required to provide _____(QTY) centrifugal pumps as specified herein. The pump models covered in this specification are Series FL50 single phase pumps. The pump turnished for this application shall be model _______as manufactured by Liberty pumps.

2.01 OPERATING CONDITIONS:

Each submersible pump shall be raied at 1/2 hp_____volts single phase 60 Hz, 3450 RPM. The unit shall produce_____G.P.M. at______ feet of total dynamic head.

The submersible pump shall be capable of handling sewage effluent with 3/4" solid handling capability. The submersible pump shall have a shut-off head of 55 feet and a maximum flow of 76 GPM @ 15 feet of total dynamic head

The pump shall be controlled with:

_____A piggy back style on/off float switch.

A NEMA 4X simplex control panel with three float switches and a high water alarm.

_____A NEMA 4X duplex control panel with three float switches and a high water alarm.

3.01 CONSTRUCTION:

Each centrifugal sewage pump shall be equal to the curves certified Series FL50 SERIES pumps as manufactured by Liberty Pumps, Bergen NY. The castings shall be constructed of class 25 cast iron. The motor housing shall be oil filled to dissipate heat. Air filled motors shall not be considered equal since they do not properly dissipate heat from the motor. All mating parts shall be machined and sealed with a Buna-N o-ring. All fasteners exposed to the Equid shall be stainless steel. The motor shall be protected on the top side with sealed cord entry plate with molded pins to conduct electricity eliminating the ability of water to enter internally through the cord. The motor shall be protected on the lower side with a unitized ceramic/carbon seal with stainless steel housings and spring. The pump shall be furnished with stainless steel handle.

4.01 ELECTRICAL POWER CORD

The submersible pump shall be supplied with a 10, 25 or 35 feet of multiconductor power cord. It shall be cord type SJTW (1-PH) or SEOOW (3-PH), SJOOW (35' – 1PH), capable of continued exposure to the pumped liquid. The power cord shall be sized for line rated full load amps of the pump in accordance with the National Electric Code. The power cable shall not enter the motor housing directly but will conduct electricity to the motor by means of a water tight compression filting cord plate assembly, with molded pins to conduct electricity. This will eliminate the ability of water to enter internally through the cord, by means of a damaged or wicking cord.

5.01 MOTORS

Single phase motors shall be oil filled, permanent split capacitor, class 8 insulated NEMA 8 design, rated for continuous duty. At maximum load the winding temperature shall not exceed 130 degrees 0 unsubmerged. Since air filled motors are not capable of dissipating heat they shall not be considered equal. The pump motor shall have an integral thermal overload switch in the windings for protecting the motor. The capacitor circuit shall be mounted infemally in the pump.



6.01 BEARINGS AND SHAFT

Upper and lower ball bearings shall be required. The bearings shall be a single ball / race type bearing. Both bearings shall be permanently lubricated by the oil, which fills the motor housing. The motor shaft shall be made of 17-4 PH stainless steel and have a minimum diameter of .825".

7.01 SEALS

The pump shall have a unitized carbon / ceramic seal with stainless steel housings and spring squal to Crane Type 6A. The motor plate / housing interface shall be sealed with a Suna-N o-ring.

8.01 IMPELLER

The impeller shall be a class 25 iron. It shall be threaded to the motor shaft.

9.01 CONTROLS

All units can be supplied with CSA and UL approved automatic wide angle tilt float switches. The switches shall be equipped with piggy back style plug that allows the pump to be operated manually without the removal of the pump in the event that a switch becomes inoperable. Manual Pumps are operable by means of a pump control panel.

10.01 PAINT

The exterior of the casting shall be protected with Powder Cost paint.

11.01 SUPPORT

The pump shall have cast iron support legs, anabling it to be a free standing unit.

12.01 SERVICEABILTY

Components required for the repair of the pump shall be shipped within a period of 24 hours.

13:01 FACTORY ASSEMBLED TANK SYSTEMS WITH GUIDE RAIL AND QUICK DISCONNECT DISCHARGE

_____Guide factory mounted rail system with pump suspended by means of bolt on quick disconnect which is sealed by means of nimite grommets or o-rings. The Discharge piping shall be schedule 80 PVC and turnished with a PVC check valve and shut-off ball valve. The Tank shall be wound fiberglass or roto-molded plastic. An inlat hub shall be provided with the fiberglass systems.

- _____Stainless steel Guide Rall
- Zinc plated steel Guide Rail
- _____^dlameter of basin size
- _____"height of basin size
- ______*distance from top of lank to discharge pipe outet
- _____Fiberglass cover
- _____Structural foam polymer cover
- Steel cover
- _____Simplex System with Outdoor panel and alarm
- _____Duplex System with Outdoor panel and elarm
- _____Separate Outdoor Alarm
- ____Remote Outdoor Alarm



14.01 TESTING

The pump shall have a ground continuity check and the motor chamber shall be Hi-potted to test for electrical integrity, moisture content and insulation defects. The motor and volute housing shall be pressurized, and an air leak decay test is performed to ensure integrity of the motor housing. The pump shall be run, voltage current monitored, and the tester checks for noise or other malfunction.

15.01 QUALITY CONTROL

The pump shall be manufactured in an ISO 9001 certified Facility.

16.01 WARRANTY

Standard limited warranty shall be 3 years.





TANK ALERT® AB Alarm System

Easy-to-install liquid level alarm system with auto-reset and battery backup features for Indoor use.

This alarm system monitors liquid levels in lift pump chambers, sump pump basins, holding tanks, sewage, agricultural, and other water applications.

The Tank Alert® AB alarm system can serve as a high or low level alarm depending on the float switch model used.

The alarm horn sounds when a potentially threatening liquid level condition occurs. The horn can be silenced, but the alarm light remains on until the condition is remedied. Once the condition is cleared, the alarm will automatically reset.

A green "Power On" light indicates 120 VAC primary power to the alarm. Low battery chirp feature indicates when battery should be replaced.

FEATURES

- NEMA 1 enclosure, designed for ease of installation, rated for indoor USP
- Automatic alarm reset.
- Red "alarm" light and green "power on" light, alarm "test" switch, and horn "silence" switch.
- Alarm horn sounds at 87 decibels at 10 feet (3 meters).
- Can be used with any UL Listed / Recognized switching mechanism rated to include 1 amp, 9 VDC load.
- If primary power fails, the alarm system continues to work due to battery backup feature. (Battery not included.)
- Complete package includes standard SJE SignalMaster® control switch with 15 feet (4.57 meters) of cable (other lengths available) and mounting clamp.
- Switching mechanism operates on low voltage and is isolated from the power line to reduce the possibility of shock.
- Low battery chirp.
- Easy access battery compartment.
- External terminal block for easy float switch installation.
- CSA Certified.
- UL Listed.
- Three-year limited warranty.



OPTIONS

When ordered with the alarm, this system is available with:

alternate float switch models for high or low level warning.

SEE BACKSIDE FOR ORDERING INFORMATION.

auxiliary dry normally open and normally closed contacts. (Tank Alert® AB with auxiliary contacts included is CSA certified only.)

RECEIVED JAN 06 2017

splice kit.

SPECIFICATIONS

VOLTAGE FOR 120 VAC MODEL: Primary: 120 VAC, 60 Hz, 2.4 watts max. (alarm condition) Secondary: 9 VDC

ALLRT 4.14

BATTERY BACKUP POWER: 9 VDC

- ALARM ENCLOSURE: 6 x 4 x 2.25 inch (15.24 x 10.16 x 5.71 cm), NEMA 1 plastic.
- ALARM HORN: 87 decibels at 10 feet (3 meters)

POWER CORD: 6 foot (1.8 meter)

FLOAT SWITCH CONNECTION TERMINAL: For float switch connection only. Do not apply power. (Voltage across terminals is 8-9 VDC).

FLOAT SWITCH: SJE SignalMaster® control switch with mounting clamp Cable: 15 feet (4.57 meters), flexible 18 gauge, 2 conductor (UL) SJOW, waterresistant (CPE)

Float: 2.74 inch diameter x 4.83 inch long (7.0 cm x 12.3 cm), high impact, corrosion resistant polypropylene housing for use in sewage and water up to 140°F (60°C)

AUXILIARY ALARM CONTACTS

(OPTIONAL): (CSA certified only unit) Voltage: 120 VAC Current: 5 amps maximum N/O 3 amps maximum N/C



TANK ALERT® AB Alarm System

Easy-to-install liquid level alarm system with auto-reset and battery backup features for indoor use.

ORDERING INFORMATION

120 VAC		List	Shipping
Part #	Description	Price	Weight
1011421	TA AB-01H (120 VAC w/15' SJE SignalMaster® High Level)	\$103.28	2.73 lbs.
1011424	TA AB-01L (120 VAC w/15' SJE SignalMaster® Low Level)	\$103.28	2.73 lbs.
1011422	TA AB-01H (120 VAC w/15' Sensor Float® High Level)	\$106.73	2.81 lbs.
1011423	TA AB-01X (120 VAC no float)	\$76.04	1.44 lbs.

H = High Level L = Low Level X = No Float

MASTER CARTON holds 16 boxed units.

OPTIONS

CONTROL SWITCH OPTIONS The Tank Alert® AB

alarm system comes standard with a 15ft SJE SignalMaster[®] control switch with mounting clamp. Other float switches are available. See control switch section of the catalog.

To determine the price of alarm with an alternate float, add the price of the part number with "no float" to the price of the float switch.



SPECIFICATIONS

VOLTAGE FOR 120 VAC MODEL:

Primary: 120 VAC, 50/60 Hz, 2.4 watts max. (alarm condition) Secondary: 9 VDC

BATTERY BACKUP POWER: 9 VDC

ALARM ENCLOSURE: 6 x 4 x 2.25 inches (15.24 x 10.16 x 5.71 cm), NEMA 1 plastic

ALARM HORN: 87 decibles at 10 feet (3 meters)

AUXILIARY ALARM CONTACTS (OPTIONAL): 120 VAC, 5 amps max N/O, 3 amp max N/C (CSA certified only unit)

POWER CORD: 6 foot (1.8 meter)

- FLOAT SWITCH CONNECTION TERMINAL: for float switch connection only (voltage across terminals is 8-9 VDC)
- FLOAT SWITCH: SJE SignalMaster® control switch with mounting clamp

CABLE: 15 feet (4.57 meters), flexible 18 gauge, 2 conductor (UL) SJOW, water resistant (CPE)

FLOAT: 2.74 inch diameter x 4.83 inch long (7.0 cm x 12.3 cm), high impact, corrosion resistant polypropylene housing for use in sewage and water up to 140°F (60°C)

Call or fax your order! 1-888-DIAL-SJE (1-888-342-5753) / Fax 218-847-4617

OTHER INFORMATION

Option	Description	Price	
AUX	Auxiliary Alarm Contacts (CSA certified only unit, factory installed)	\$17.25	



www.sjerhombus.com sje@sjerhombus.com

SJE Rhombus.

TANK ALERT® AB Alarm Installation Instructions

This alarm system monitors liquid levels in lift pump chambers, sump pump basins, holding tanks, sewage, agricultural, and other water applications.

The Tank Alert[®] AB indoor alarm system can serve as a high or low level alarm depending on the float switch model used. The alarm hom sounds when a potentially threatening liquid level condition occurs. The horn can be turned off, but the alarm light remains on until the condition is remedied. Once the condition is cleared the alarm will automatically reset. A green "Power On" light indicates 120 VAC primary power to the alarm. Low battery chirp feature indicates when battery should be replaced.

TANK ALERT[®] AB ALARM

- 120 VAC Model Voltage (circuits not supervised) <u>Primary</u>: 120 VAC, 60 Hz, 2.4 watts maximum (alarm condition) Operating Voltage: 9 VDC Double insulation
- NEMA 1 enclosure rated for indoor use.
- Automatic alarm reset.
 - Red "alarm" light and green "power on" light, alarm "test" switch, and horn "silence" switch.
 - 6 foot (1.8 meter) power cord.
 - Alarm horn sounds at 87 decibels at 10 feet (3 meters).
 - Can be used with any UL Listed switching mechanism rated to include 1 amp, 9 VDC load.
 - Maximum line impedance for initiating device: 5 ohms.
 - If primary power fails, the alarm system continues to work due to battery backup feature. Battery Backup Power - (circuit not supervised) 9 VDC
- Complete package includes standard SJE SignalMaster® control switch with 15 feet (4.57 meters) of cable (other lengths available) and mounting clamp.
- Switching mechanism operates on low voltage and is isolated from the power line to reduce the possibility of shock.
- Low battery chirp.
- External terminal block for easy float switch installation.
- Three-year limited warranty.

OPTIONS

When ordered with the alarm, this system is available with:

- alternate float switch models for high or low level warning.
- splice kit.

PREVENTATIVE MAINTENANCE

- Periodically inspect the product. Check that the cable has not become worn or that the housing has not been damaged so as to impair the protection of the
 product. Replace the product immediately if any damage is found or suspected.
- Periodically check to see that the float is free to move and operate the switch.
- · Use only SJE-Rhombus® replacement parts.

SJE-RHOMBUS" THREE-YEAR LIMITED WARRANTY

SJE-RHOMBUS[®] warrants to the original consumer that this product shall be free of manufacturing defects for three years after the date of consumer purchase. During that time period and subject to the conditions set forth below, SJE-RHOMBUS[®] will repair or replace, for the original consumer, any component which proves to be defective due to defective materials or workmanship of SJE-RHOMBUS[®].

THIS EXPRESS WARRANTY DOES NOT APPLY TO THE MOTOR START KIT COMPONENT. SJE-RHOMBUS® MAKES NO WARRAN-TIES OF ANY TYPE WITH RESPECT TO THE MOTOR START KIT.

ELECTRICAL WIRING AND SERVICING OF THIS PRODUCT MUST BE PERFORMED BY A LICENSED ELECTRICIAN.

THIS WARRANTY DOES NOT APPLY: (A) to damage due to lightning or conditions beyond the control of SJE-RHOMBUS[®]; (B) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; (C) to failures resulting from abuse, misuse, accident, or negligence; (D) to units which are not installed in accordance with applicable local codes,

ordinances, or accepted trade practices, and (E) to units repaired and/ or modified without prior authorization from SJE-RHOMBUS®.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

TO OBTAIN WARRANTY SERVICE: The consumer shall assume all responsibility and expense for removal, reinstallation, and freight. Any item to be repaired or replaced under this warranty must be returned to SJE-RHOMBUS®, or such place as designated by SJE-RHOMBUS[®].

ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. SJE-RHOM-BUS® SHALL NOT, IN ANY MANNER, BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES AS A RESULT OF A BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY.



WARNING ELECTRICAL SHOCKHAZARD

Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.



NG EXPLOSIONOR FIRE HAZARD

Do not use this product with fiammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.

> For detailed specifications on this product, or for the complete line of SJE-Rhombus® panel, alarm, and switch products, visit our web site at www.sjerhombus.com.

INSTALLING THE ALARM & FLOAT SWITCH

- 1. Determine indoor mounting location for alarm.
- Insert screw (supplied) at desired wall location. Note: Screw is to be located over wall stud or used with a wall anchor sized for a #8 x 1.25" self tapping screw.
- Hang alarm using keyhole on back of enclosure. Install second screw in mounting flange located on bottom of alarm.
- 4. Make sure power to alarm is disconnected.
- Place the float switch cord into the clamp as shown in Figure A.
- Locate the clamp at the desired activation level and secure the clamp to the discharge pipe as shown in Figure A.
 - Note: Do not install cord under hose clamp.
- Tighten the hose clamp using a screwdriver. Over tightening may result in damage to the plastic clamp. Make sure the float cable is not allowed to touch the excess hose clamp band during operation.
 Note: Ail hose clamp components are made of 18-8

stainless steel material. See your SJE-Rhombus[®] supplier for replacements.

 Bring cable leads back to alarm and wire according to Figure B.

Note: When used with a pump application, connect alarm to a circuit separate from the pump circuit. This allows the alarm to operate if the pump circuit fails.

- Open battery door and install 9 VDC alkaline battery (not included). Battery must be installed for backup alarm to function. Note: The green power on light does not come on when unit is on battery power.
- Plug the alarm in to apply primary power. Verify that the green "power on" light illuminates.
- Check installation by manually tipping the float. The horn will sound and the "alarm" light should come on.
- Press "silence" button to silence the horn. The horn will silence while the red "alarm" light stays on.
- Tip float back down and press "test" button. The "alarm" light and horn will activate.
- 14. Test unit once a week. Replace battery every 12 months and after each alarm condition to ensure proper operation. If battery is low, low battery chirp feature will cause the horn to chirp approximately once per minute. Replace battery when this happens.
- Using the provided cable clasp, secure cord to outlet as shown in Figure C. Use existing receptacle faceplate screw and supplied washer.
- 16. Test unit once per week to insure proper operation.

Figure A



Figure B



Figure C





22650 County Highway 6 🗰 P.O. Box 1708 👛 Detroit Lakes, Minnesota 56502 USA 1-888-DIAL-SJE (1-888-342-5753) 💼 Phone: 218-847-1317 💼 Fax: 218-847-4617 💼 E-mail: sje@sjerhombus.com

SJE SIGNALMASTER® Control Switch

Mechanically-activated, narrow-angle float switch designed to activate pump control panels and alarms.

This narrow-angle sensing device is used to accurately monitor liquid levels in:

- / potable water
- water
- sewage applications

The SJE SignalMaster® control switch is not sensitive to rotation.

Normally Open Model (high level)_

The control switch turns on (closes) when the switch tips slightly above horizontal signaling a high level, and turns off (opens) when the switch drops slightly below horizontal.

Normally Closed Model (low level)

The control switch turns on (closes) when the switch tips slightly below horizontal signaling a low level, and turns off (opens) when the switch tips slightly above horizontal.

FEATURES

- Passed NSF Standard 61 protocol by an approved Water Quality Association laboratory.
- Mechanically-activated, snap action contacts.
- High impact, corrosion resistant, polypropylene float housing.
- Not sensitive to rotation.
- Control differential of 1.5 inches (4 cm) above or below horizontal.
- Yellow colored cap for easy identification of normally open control switch.
- White colored cap for easy identification of normally closed control switch.

Hydraulic

- UL Listed for use in water and sewage.
- CSA Certified.
- Five-year limited warranty.

OPTIONS

This switch is available:

- CE certified unit available upon request.
- for normally open (high level) applications or normally closed (low level) applications.
- in standard cable lengths of 10, 15, 20, or 30 feet and 3, 5, 6, or 10 meters (longer lengths available)
- with two mounting options that allow for flexibility in installation:
 - Mounting Clamp: for applications where the switch can be attached to a discharge pipe or similar mounting device.
 - Externally Weighted: for applications where the switch can be suspended from above.

SPECIFICATIONS

- CABLE: flexible 18 gauge, 2 conductor (UL, CSA) SJOW, water-resistant (CPE)
- FLOAT: 2.74 inch diameter x 4.83 inch long (7.0 x 12.3 cm) high impact, corrosion resistant, polypropylene housing for use in sewage and water up to 140°F (60°C)
- MAXIMUM WATER DEPTH: 30 feet (9 meters), 13 PSI (90 kPa)

ELECTRICAL: 5 amp, 125/250 VAC, 50/60 Hz

NOTE: This switch is not recommended for controlling:

- electric loads less than 100 milliamps, 12 VAC
- non-arcing electric loads



PO Box 1708, Detroit Lakes, MN 56502 1-888-DIAL-SJE • 1-218-847-1317 1-218-847-4617 Fax email: customer.service@sjerhombus.com www.sjerhombus.com 133





SJE SIGNALMASTER® Control Switch

Mechanically-activated, narrow-angle float switch designed to activate pump control panels and alarms.

ORDERING INFORMATION

Normally Ope	en	Normally C	losed	Lice	Chinging
Part#	Description	Part#	Description	Price	Weight
1006042	10SGMPCNO	1006046	10SGMPCNC	\$34.39	1.04 lbs.
1006050	10SGMWENO	1006054	10SGMWENC	\$42.14	2.73 lbs.
1006043	15SGMPCNO	1006047	15SGMPCNC	\$37.63	1.37 lbs.
1006051	15SGMWENO	1006055	15SGMWENC	\$45.39	3.05 lbs.
1006044	20SGMPCNO	1006048	20SGMPCNC	\$40.87	1,69 lbs.
1006052	20SGMWENO	1006056	20SGMWENC	\$48.65	3.30 lbs.
1006045	30SGMPCNO	1006049	30SGMPCNC	\$47.93	2.34 lbs.
1006053	30SGMWENO	1006057	30SGMWENC	\$55.66	4.03 lbs.

PC = Pipe Clamp WE = Weighted Externally NO = Normally Open NC = Normally Closed NOTE: Descriptions are grouped by cable length measured in feet (10, 15, 20, 30).

Passed NSF standard 61 protocol by an approved Water Quality Association laboratory.



SPECIFICATIONS

CABLE: flexible 18 gauge, 2 conductor (UL) SJOW, water-resistant (CPE)

FLOAT: 2.74 inch diameter x 4.83 inch long (7 x 12.3 cm), high impact, corrosion resistant polypropylene for use in sewage and water up to 140°F (60°C)

MAXIMUM WATER DEPTH: 30 feet (9 meters), 13 psi

ELECTRICAL: 5 amp, 125/250 VAC, 50/60 Hz

This switch is not recommended for controlling:

- electric loads less than 100 milliamps, 12 VAC
- non-arcing electric loads

OTHER INFORMATION

NORMALLY OPEN (high level) OPERATION

The control switch closes (turns on) when the float tips slightly above horizontal signaling a high level, and opens (turns off) when the float drops slightly below horizontal in potable water, water or sewage applications.

OPTIONS

optional PACKAGING Bagged - standard. Boxed - optional Bulk - optional

for details.

MOUNTING CLAMP is standard - deduct

ADDITIONAL CABLE Longer cable lengths available. Please call

> UL Listed for Water & Sewage

NORMALLY CLOSED (low level) OPERATION

The control switch closes (turns on) when the float tips slightly below horizontal signaling a low level, and opens (turns off) when the float tips slightly above horizontal in potable water, water or sewage applications.

Call or fax your order! 1-888-DIAL-Sje (1-888-342-5753) 📕 Fax 218-847-4617



Cat Page PN 1011937P-WEB © SJE-Rhombus 09/14

Product offering and pricing are subject to change without notice. Please visit www.sjerhombus.com for the most current information.

134

SJE Rhombus Control Switch Installation Instructions

SJE-Rhombus® narrow angle control switches accurately monitor liquid levels in sewage, and non-potable water applications. These switches are designed to activate pump control panels and alarms.

The SJE SignalMaster® and SJE SignalMaster® SPDT control switches passed NSF Standard 61 protocol by an approved Water Quality Association laboratory for use in potable water applications.



- · Use only SJE-Rhombus[®] replacement parts.
- The Sensor Float[®] and Sensor Float[®] Mini control switches contain mercury and MUST be recycled or disposed of according to local, state, and federal codes.

SJE-RHOMBUS' FIVE-YEAR LIMITED WARRANTY

SJE-RHOMBUS® warrants to the original consumer that this product shall be free of manufacturing defects for five years after the date of consumer purchase. During that time period and subject to the conditions set forth below, SJE-RHOMBUS® will repair or replace, for the original consumer, any component which proves to be defective due to defective materials or workmanship of SJE-RHOMBUS®.

THIS EXPRESS WARRANTY DOES NOT APPLY TO THE MOTOR START KIT COMPONENT. SJE-RHOMBUS* MAKES NO WARRAN-TIES OF ANY TYPE WITH RESPECT TO THE MOTOR START KIT.

ELECTRICAL WIRING AND SERVICING OF THIS PRODUCT MUST BE PERFORMED BY A LICENSED ELECTRICIAN.

THIS WARRANTY DOES NOT APPLY: (A) to damage due to lightning or conditions beyond the control of SJE-RHOMBUS*; (B) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; (C) to failures resulting from abuse, misuse, accident, or negligence; (D) to units which are not installed in accordance with applicable local codes, ordinances, or accepted trade practices, and (E) to units repaired and/or modified without prior authorization from SJE-RHOMBUS*. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

TO OBTAIN WARRANTY SERVICE: The consumer shall assume all responsibility and expense for removal, reinstallation, and freight. Any item to be repaired or replaced under this warranty must be returned to SJE-RHOMBUS[®], or such place as designated by SJE-RHOMBUS[®].

.

ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. SJE-RHOMBUS® SHALL NOT, IN ANY MANNER, BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES AS A RESULT OF A BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY.

NOTICE! Products returned must be cleaned, sanitized, or decontaminated as necessary prior to shipment to ensure that employees will not be exposed to health hazards in handling said material. All applicable laws and regulations shall apply.

A WARNING ELECTRICAL SHOCK HAZARD

Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.



EXPLOSION OR FIRE HAZARD Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.

> For detailed specifications on this product, or for the complete line of SJE-Rhombus* panel, alarm, and switch products, visit our web-site at www.sjerhombus.com.

MOUNTING THE SWITCH

WARNING: Do not install switch in direct line of incoming liquid.

- Place the cord into the clamp as shown in Figure C.
- Locate clamp at desired activation level and secure the clamp to the discharge pipe as shown in Figures A and B. Note: Do not install cord under hose clamp.
- Tighten the hose clamp using screwdriver. Over tightening may result in damage to the plastic clamp. Make sure the float cable is not allowed to touch the excess hose clamp band during operation.
- 4. Wire switch as shown in Figure D.
- Check installation. Allow system to cycle to Insure proper operation.

Note: All hose clamp components are made of 18-8 stainless steel material. See your SJE-Rhombus[®] supplier for replacements.

Figure A



CONNECTIONS MADE IN DRY JUNCTION

performance

Figure D

CABLE WEIGHT

- Determine desired activation level.
 Suspend switch and cable weight at
- desired activation level as shown in Figure E.
- 3. Wire switch as shown in Figure D.
- Check installation. Allow system to cycle to insure proper operation.

To adjust cable weight tether length:

- 1. Release clip.
- 2. Adjust cable weight to desired position.
- 3. Lay switch cable in weight channel.
- Align clip with weight channel and slide towards switch cable as shown in Figure E.
- Snap clip snugly up to cable, moving clip to tightest possible position.

Figure B



SJE SignalMaster* SPDT Only

CONNECTIONS MADE IN DRY

In 230 VAC Installations, one side of the line going to the load is always HOT. This condition exists

On SPDT Models, insulate unused red or black wires with wire nut. Wire can become electrically ho Ensure cable connections are performed in a <u>drv</u> junction box or other watertight seal that seals

both conductors and cable lacket. Failure to do so could result in electrical shock hazard and/or

water traveling down cable and entering the switch. Failure to guard against this may affect switch

318

if the switch is on or off. Install double pole disconnect on all 230 VAC circuits

Normally Open

t

LOAD

SOURCE 000

G TV LS

DE IN DRY

Normally Closed

SOURCE OOO

G

Ť

LOAD

G 1 L1

INTERNAL WEIGHT

- SENSOR FLOAT® CONTROL SWITCH ONLY
- Determine desired activation level as shown in Figures A & B.
- Suspend switch 7 inches below desired activation level as shown in Figure F. Switch remains partially submerged during the "on" tipping action. Switch can be totally submerged and still continue to operate properly.
- 3. Wire switch as shown in Figure D.
- Check installation. Allow system to cycle to insure proper operation.

Figure C







Figure F





22650 County Highway 6 🖉 P.O. 8ox 1708 🖉 Detroit Lakes, Minnesota 56502 USA 1-888-DIAL-SJE (1-888-342-5753) 🖉 Phone: 218-847-1317 🖉 Fax: 218-847-4617 🖉 E-mail: customer.service@sjerhombus.com

Insti. Instr. PN 1011974L ØSJE-Rhombus 11/14

Normally Open and Normally Closed

G 71 L1

WARNING

SOURCE 000

LOAD

Date	Service Provider	Service (action)	comment
	· · · · · · · · · · · · · · · · · · ·		
L			
		······································	

	·		
			· · · · · · · · · · · · · · · · · · ·
1			

Maintenance Log



Maintenance Log

Date	Service Provider	Service (action)	comment
		*	
		·	
		·	



¢

734 Marino Clerk of the Dircut Howard Cou Land Records/Li	t Cour inty cens	RO. 21104
The Thomas Dorsey 9250 Bendix Columbia, MD 410-313-58	Buildi Road 21045 150	ng
LR - POA Recording Fee 1x same: stagmer ef: 30	20.00	20.00
LR - Agriement Recording 1x Name: stagmer Ref: 31	Fee 20.00	20.00
LR – Agreement Surcha ge	40.00	40.00
SubTotal: Total:	1025000	80.00 80.00
keV-Check-BDA Number : 2076		80.00
05/12/2017 12:23 #8369167 /497/109 Thank you for visit	ing us	CC13-MH today~

AGREEMENT AND EASEMENT FOR INSTALLATION OF AN ALTERNATIVE OR INNOVATIVE ON-SITE SEWAGE DISPOSAL SYSTEM

THIS AGREEMENT is made this That day of MAY 2017, among Kerry Januar

, hereinafter referred to as "Owner", the <u>Howard</u> County Health Department hereinafter collectively referred to as the "County", and the Department of the Environment, hereinafter referred to as the "Department".

WHEREAS, Owner owns a tract of land located on <u>734 Macrie Hsville Read</u> in the <u>3rd</u> Election District of <u>Howard</u> County, Maryland, and the deed to same is recorded among the Land Records of <u>Howard</u> County, Maryland, in Liber <u>16749</u> and Folio <u>0007.1</u>.

WHEREAS, Owner's land is improved and the existing means of sewage disposal has been found to be prejudicial to the environment and/or public health.

WHEREAS, Owner's land is unsuitable for the installation of a conventional on-site sewage disposal system and owner has requested the Department's approval to install an alternative or innovative system of sewage disposal.

NOW, THEREFORE, the parties hereto agree as follows:

A. The property is currently improved with a three bedroom single family residence served by a private well and an on-site sewage disposal system.

B. The Owners agree that the County will approve no future additions, expansions of use for, or changes of use for any building on the property that may involve increased flow to the on-site sewage disposal system.

C. Owner must install and maintain a water meter on the incoming side of the water system or an event counter and an elapsed time meter on the sewage pumping system.

D. Owner hereby grants to the Department and the County the right to enter upon the property at any reasonable time for access to the system to make periodic inspections and the Owner agrees to provide

any information and data requested and needed by the Department to develop accurate and thorough test results.

E. Owner acknowledges and agrees that the proposed innovative system is experimental and that his or her participation is voluntary. Owner agrees that there shall be no liability on the part of the County or Department to Owner if this innovative system fails, and that the County and the Department do not warrant or guarantee that the system will adequately or properly function.

F. Owner acknowledges and agrees that neither the County nor the Department nor any of its agents or employees, either officially or individually, underwrites the operation of any system approved by them.

G. The Owner will devote such care and effort to the maintenance of the system so that a system malfunction is not the result of poor maintenance, faulty operation, or neglect.

H. The Owner agrees, that, should the system be determined by the County or the Department to pose a threat to the public health, safety or comfort, the County or the Department may order any necessary changes or corrections and the Owner agrees to pay for all such changes or corrections. System modifications may include requirements for holding of sewage waste in tanks and regular pumping from the holding tanks. Upon the County or Department's request, the Owner agrees to enter into a contract acceptable to the County or Department to allow a private entity to pump on a regularly scheduled basis an approved holding tank system.

I. The Owner agrees to contact both the Water Management Administration, On-site systems division of the Wastewater Permits Program and the County at least forty-eight (48) hours prior to system installation, so that the Department may lay out the system in the field with the contractor. The Owner must install this system according to the plans and specifications approved by the County and Department and any changes required by the County and Department as a result of the field layout. If installation deviates substantially from the approved plans or changes such that experimental data will be compromised or reduced, the Owner agrees to pay for all necessary corrections.

J. This agreement shall run with the land and binds the Owner, his heirs, successors, and assigns. Owner further agrees that he shall inform in writing any purchaser or lessee of the property that the system requires maintenance and other attention. The Owner agrees to record this agreement in the land records of Howard County.

К. This agreement shall not be construed to limit any authority of the County or the Department to protect the public health, safety or comfort or to issue any other orders to take any other action which is now or may hereafter be within its authority.

This agreement may be voided at the discretion of the Department if the system construction is Ľ. not completed within six (6) months of the effective date of this agreement.

This agreement contains the entire agreement and understanding between the County and the Μ. Owner and the Department. There are no additional terms other than as contained in this agreement. This agreement may not be modified except in writing signed by each of the parties or by their authorized representatives.

The laws of the State of Maryland govern the provisions of all transactions pursuant to this N. agreement.

IN WITNESS WHEREOF, the parties have signed and sealed this agreement on the date indicated above.

DATE: 844 May 2017 DATE: 844 May 2017

Numer / Jerry Concer

DATE: 4/12/2017

DATE: 5/7/2017

Neoni Hower

Naomi Howell, Division Chief On-Site Systems Division Wastewater Permits Program Water Management Administration Department of the Environment

Bert Nixon, Director Bureau of Environmental Health Howard County Health Department

