PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner:	Spear Builders, Inc.
Address:	172 Allendale Cr Troutman 28166
Phone:	704-202-4964
County:	Iredell
Location:	DavidsonWoods LOT #51
Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	360
System Flow:	21.92

Design Specifications

Drainfield Size:	300
Loading Rate (gpd/ft.^{2}):	0.3
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	24 in.
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	53
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	9.22
Dosing Volume:	137.13
Supply Manifold:	4 in. SCH 80 PVC
Supply Manifold Length:	4 ft. (minimum)
Supply Manifold Volume:	N/A
Recommended Float Controls:	SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel:	SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.
Pressure Head:	2 ft.
Friction Head:	0.67
Elevation Head:	7.80
Total Dynamic Head:	12.04
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 at Pressure Manifold
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services.

DavidsonWoods LOT #51
PRESSURE MANIFOLD DESIGN

DESIGN FLOW (gpd):	360
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	900
TOTAL LATERAL LENGTH:	300
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	300
SUPPLY LINE LENGTH:	53
TOTAL DYNAMIC HEAD:	12.04
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	137.13
PUMP TANK DRAW DOWN*:	6.5
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	1000

**Pump tank draw down based on a volume basis of 21 gallons per inch. Draw down may vary among pump tank manufacturers.*

DavidsonWoods LOT #51

Project #: 01-1308

LAYOUT FOR 3 BEDROOM HOME

July 13, 2007

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		2.3			100.00		
INSTR. 1			102.30				
HOUSE CNR				7.30	95.00		
P. TANK				7.50	94.80		
1	RED			3.00	99.30	63	63
2	ORANGE			3.50	98.80	83	83
3	PINK			4.20	98.10	85	85
4	***BLUE***			***4.70***	***97.60***	***75***	***75***
5	***RED***			***5.30***	***97.00***	***75***	***75***
6	***ORANGE***			***5.60***	***96.70***	***75***	***75***
7	***PINK***			***6.30***	***96.00***	***75***	***75***
					Total	**531**	**531**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
****System***	***300***	***0.30***	***ACCEPT.***	***0.30***	***25% RED.***	**PRESSURE**
Repair	231	0.30	*MOD.*	0.30	PPBPS	**MANIFOLD** LOW PRESSURE

Notes:

** TBM located on angle point of lot (see site plan)
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**BS, HI, and FS indicate rod readings

PRESSURE MANIFOLD TAPSHEET - DAVIDSON WOODS LOT 51

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area
4	***BLUE***	97.6	*75*	SCH 80 1/2	**5.48**	225
5	***RED***	97	*75*	SCH 80 1/2	**5.48**	225
6	***ORANGE***	96.7	*75*	SCH 80 1/2	**5.48**	225
7	***PINK***	96	*75*	SCH 80 1/2	**5.48**	225
	total	**feet =**	**300**	**gal/min =**	**21.92**	
			Des. Flow	**480**		
			Pump Run=	**6.26**		
			soil LTAR	**0.3**		
			LTAR +5%	**0.315**		
			LTAR with ACCEPTED	**0.4**		
			LTAR with ACCEPTED + 5%	**0.42**		

CALCULATIONS

Location Davidson Woods

Project Number 01-1308

Lot No: Lot 51

No. of Bedrooms	3	
Design Flow	360	$^{gal}/_{day}$
LTAR	0.3	$^{gpd/ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	53	ft.
Supply Line Volume	9.222	gal.
Required Feet of Line	300	ft.
Amount of Line from Layout	300	ft.
Gallons per Minute	21.92	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	195.9	gal.
Dosing Volume	137.13	gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down	6.5	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	6.26	minutes
Elevation Head	7.8	ft.
Pressure Head	2	ft.
Friction Factor	1.27	ft./100 ft. *(From the interpolater.)*
Friction Head	0.67	ft.
Total Dynamic Head (+15%)	12.04	ft.

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
	-1.28
30	1.78
	-1.76
35	2.37
	-2.25
40	3.03
43.07	3.48
45	3.77
48.14	4.28
50	4.58
57.11	5.89
60	6.42