PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner: SI YOUNG CHUN & MI OK CHUN

Address: 8208 Peyton Randolph Dr
Charlotte, NC 28277
Phone: 704-846-7966
County: IREDELL
Location: 176 Hickory Hill Rd

Source of Wastewater Flow: 3 Bedroom Single Family Residence
Estimated Gallons Per Day Flow: 360
System Flow: 20.2

Design Specifications

Drainfield Size: 200
Loading Rate (gpd/ft.^{2}): 0.3
Depth of Gravel in Trench: NA (25% reduction)
Gravel Size: NA (25% reduction)
Trench Depth: 36 in.
Trench Width: 24 in.
Septic Tank Size: 1000
Pump Tank Size: 1000

Estimated Supply Line Length: 137
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 23.84
Dosing Volume: 108.54
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: 1.15
Elevation Head: 6.40
Total Dynamic Head: 11.46

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.

176 Hickory Hill Rd
PRESSURE MANIFOLD DESIGN

DESIGN FLOW (gpd):	360
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	600
TOTAL LATERAL LENGTH:	200
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	200
SUPPLY LINE LENGTH:	137
TOTAL DYNAMIC HEAD:	11.46
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	108.54
PUMP TANK DRAW DOWN*:	5.2
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.*

176 Hickory Hill Rd

Project #: 01-1683

LAYOUT FOR 3 BEDROOM HOME

November 18, 2011

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		1.7			100.00		
INSTR. 1			101.70				
HOUSE CNR				7.70	94.00		
P. TANK				7.30	94.40		
1	***BLUE***			***5.90***	***95.80***	***40***	***40***
2	***PINK***			***6.60***	***95.10***	***40***	***40***
3	BLUE			7.10	94.60	61	61
4	ORANGE			7.80	93.90	81	81
~~*5*~~	~~***PINK***~~			~~*7.90*~~	~~*93.80*~~	~~*40*~~	~~*40*~~
5	***PINK***			***7.90***	***93.80***	***40***	***40***
6	***RED***			***8.20***	***93.50***	***40***	***40***
7	ORANGE			8.50	93.20	47	47
8	BLUE			8.90	92.80	81	81
					Total	**470**	**470**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	***200***	***0.30***	***MOD.***	***0.30***	***PPBPS***	**PRESSURE MANIFOLD**
Repair	270	0.25	*MOD.*	0.25	TS-II PRETREATED PPBPS	LOW PRESSURE

Notes:

** TBM located at EIP (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 -176 HICKORY HILL RD

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	# of Panels
				SCH 40 1 IN.	20.2	
1	*BLUE*	*95.80*	*40*	TRU-FLOW SPLITTER	0	9
2	*PINK*	*95.10*	*40*	TRU-FLOW SPLITTER	0	9
5	*PINK*	*93.80*	*40*	TRU-FLOW SPLITTER	0	9
5	*PINK*	*93.80*	*40*	TRU-FLOW SPLITTER	0	9
6	*RED*	*93.50*	*40*	TRU-FLOW SPLITTER	0	9
						45
	total	feet =	200	gal/min =	20.2	
			Des. Flow	360		
			Pump Run=	5.37		
			soil LTAR	0.30		
			LTAR +5%	0.315		
			LTAR with ACCEPTED	0.4		
			LTAR with ACCEPTED + 5%	0.42		

*** PRESSURE MANIFOLD CONSISTS OF ONE SINGLE SCH 40 1 INCH TAP. A ZOELLER TRU-FLOW SPLITTER MUST BE USED TO DIVIDE FLOW EVENLY TO THE 5 SEPTIC LINES.**
***SEE SITE PLAN**

CALCULATIONS

Location 176 Hickory Hill Rd

Project Number 01-1683

Lot No:

No. of Bedrooms	3	
Design Flow	360	$^{gal}/_{day}$
LTAR	0.30	$^{gpd/ft^2}$
PPBPS.? (YES OR NO)	YES	
Supply Line Length	137	ft.
Supply Line Volume	23.838	gal.
Required Feet of Line	200	ft.
Amount of Line from Layout	200	ft.
Gallons per Minute	20.2	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Panel Volume	3.6	gal.
# of Panels	45	
Dosing Volume	108.54	gal.

Note: Dosing Volume based on67% of # of panel time 3.6 gal/panel

Tank Draw Down	5.2	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.37	minutes
Elevation Head	6.4	ft.
Pressure Head	2	ft.
Friction Factor	0.84	ft./100 ft. *(From the interpolater.)*
Friction Head	1.15	ft.
Total Dynamic Head (+20%)	11.46	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