PRESSURE MANIFOLD SYSTEM FOR WASTEWATER TREATMENT

Owner: ABMS Development, Inc

Address: 111-B Raceway Drive
Mooresville, NC 28117
Phone: 704-664-7029
County: Iredell
Location: NORTHLAKE AMENITIES AREA

Source of Wastewater Flow: 80 LOTS AT 5 GALLONS PER LOT
Estimated Gallons Per Day Flow: 400
System Flow: 21.33

Design Specifications

Drainfield Size: 336
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: 36 in.
Septic Tank Size: ~~1000~~ 1500
Pump Tank Size: ~~1000~~ 1500

Estimated Supply Line Length: 305
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 53.07
Dosing Volume: 153.59
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: 5.43
Elevation Head: 4.70
Total Dynamic Head: 13.95

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.

NORTHLAKE AMENITIES AREA
PRESSURE MANIFOLD DESIGN

DESIGN FLOW (gpd):	400
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	1008
TOTAL LATERAL LENGTH:	336
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	333.3333333
SUPPLY LINE LENGTH:	305
TOTAL DYNAMIC HEAD:	13.95
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	153.59
PUMP TANK DRAW DOWN*:	7.3
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.*

NORTHLAKE AMENITIES AREA

Project #: 01-1391

AMENITIES AREA FOR A 80 LOT SUBDIVISION

October 27, 2008

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		5.9			100.00		
INSTR. 1			105.90				
HOUSE CNR				2.80	103.10		
P. TANK				2.80	103.10		
1	***BLUE***			***3.10***	***102.80***	***112***	***112***
2	***ORANGE***			***3.10***	***102.80***	***112***	***112***
3	***YELLOW***			***3.10***	***102.80***	***112***	***112***
4	PINK			3.30	102.60	112	112
5	BLUE			3.40	102.50	112	112
					Total	**560**	**560**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	*336*	*0.30*	*ACCEPT.*	*0.30*	*25% RED.*	**PRESSURE**
Repair	224	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 - NORTHLAKE AMENITIES

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area
1	***BLUE***	***102.80***	***112***	SCH 40 1/2	**7.11**	336
2	***ORANGE***	***102.80***	***112***	SCH 40 1/2	**7.11**	336
3	***YELLOW***	***102.80***	***112***	SCH 40 1/2	**7.11**	336
	total	**feet =**	**336**	**gal/min =**	**21.33**	
			Des. Flow	**400**		
			Pump Run=	**7.20**		
			soil LTAR	**0.30**		
			LTAR +5%	**0.315**		
			LTAR with ACCEPTED	**0.4**		
			LTAR with ACCEPTED + 5%	**0.42**		

CALCULATIONS

Location NORTHLAKE

Project Number 01-1391

Lot No: Lot 76

No. of LOTS 80

Design Flow 400 $^{gal}/_{day}$

LTAR 0.30 $^{gpd/ft^2}$

25% RED.? (YES OR NO) YES

Supply Line Length 305 ft.

Supply Line Volume 53.07 gal.

Required Feet of Line 333.3333 ft.
Amount of Line from Layout 336 ft.

Gallons per Minute 21.33 $^{gal}/_{min}$

Required Septic Tank Capacity 1500 ~~1000~~ gal.
Minimum Standard Tank Size 1500 ~~1000~~

Lateral Line Volume 219.408 gal.

Dosing Volume 153.59 gal.
Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down 7.3 *Generic Draw Down of 21 gal.per in.*

Pump Run Time 7.20 minutes

Elevation Head 4.7 ft.
Pressure Head 2 ft.
Friction Factor 1.78 ft./100 ft. *(From the interpolater.)*
Friction Head 5.43 ft.

Total Dynamic Head (+15%) 13.95 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