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Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 5 bedroom single family residence on Lot #107 in Anniston Subdivision, Iredell County, North Carolina.

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August 28, 2007
Project #: 01-1005
Design By: Rollans Soil & Environmental Services

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant:	Ridgeline Development
Address:	17824 Statesville Rd., Suite 112 Cornelius, NC 28031
Phone:	704 362 5007
County:	Iredell
Location:	Anniston Subdivision Lot #107
Source of Wastewater Flow:	5 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	600 gpd
System Flow:	34.44

Design Specifications

Drainfield Size:	365
Loading Rate:	0.275 gpd/ft²
Depth of Gravel in Trench:	NA (PPBPS)
Gravel Size:	NA (PPBPS)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1500 gal.
Pump Tank Size:	1500 gal.
Estimated Supply Line Length:	1234
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	214.72
Dosing Volume:	202.61
Supply Manifold:	N/A
Supply Manifold Length:	N/A
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:	29.25
Elevation Head:	49.90
Total Dynamic Head:	93.32
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 per lateral
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services

Anniston Subdivision Lot #107
LP PPBPS

DESIGN FLOW:	600
SOIL APPLICATION RATE:	0.275 gpd/ft²
TOTAL AREA TRENCH BOTTOM:	1095
TOTAL LATERAL LENGTH:	365
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	363.6363636
SUPPLY LINE LENGTH:	1234
TOTAL DYNAMIC HEAD:	93.32
MANIFOLD SIZE:	N/A
DOSING VOLUME:	202.61
PUMP TANK DRAW DOWN*:	6.5
SEPTIC TANK SIZE:	1500 gal.
PUMP TANK SIZE:	1500 gal.

**Pump tank draw down based on a volume basis of 31 gallons per inch. Draw down may vary among pump tank manufacturers.*

Anniston PH3 Lot#107

Project #: 01-1005

LAYOUT FOR 5 BEDROOM HOME

August 28, 2007

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		4.3			100.00		
INSTR. 1			104.30				
HOUSE CNR				19.00	85.30		
P. TANK				45.30	59.00		
1	***RED***			***0.40***	***103.90***	***75***	***75***
2	***ORANGE***			***1.40***	***102.90***	***110***	***100***
3	***BLUE***			***2.80***	***101.50***	***122***	***100***
4	***PINK***			***4.10***	***100.20***	***90***	***90***
5	RED			5.30	99.00	102	102
6	ORANGE			7.30	97.00	123	123
7	BLUE			9.00	95.30	73	73
8	PINK			10.60	93.70	60	60
9	RED			11.60	92.70	45	45
					Total	**800**	**768**

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
****System***	***365***	***0.275***	***MOD.***	***0.275***	***PPBPS***	***LOW PRESSURE***
Repair	403	0.3	MOD.	0.300	PPBPS	LOW PRESSURE

Notes:
** TBM located top of ground at EIP at corner 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

LP PPBPS TAPSHEET -Anniston LOT 107

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
1	***RED***	103.9	***75***	0.156	**0.41**	225	17
2	***ORANGE***	102.9	***100***	0.156	**0.41**	300	23
3	***BLUE***	101.5	***100***	0.156	**0.41**	300	23
4	***PINK***	100.2	***90***	0.156	**0.41**	270	21
							84
	total	**feet =**	**365**	**gal/min =**	**34.44**		

Des. Flow	**600**
Pump Run=	**5.88**
soil LTAR	**0.275**
LTAR +5%	**0.28875**
LTAR with mod.	**0.55**
LTAR with mod.. + 5%	**0.5775**

.156 equals 5/32 inch hole

CALCULATIONS

Location Anniston PH3 Section 2

Project Number 01-1005

Lot No: Lot 107

No. of Bedrooms 5

Design Flow 600 $^{gal}/_{day}$

LTAR 0.275 $^{gal}/_{ft^2\ day}$

PPBPS? (YES OR NO) YES

Supply Line Length 1234 ft.

Supply Line Volume 214.716 gal.

Required Feet of Line 363.6364 ft.
Amount of Line from Layout 365 ft.

Gallons per Minute 34.44 $^{gal}/_{min}$

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

Panel Volume 3.6 gal.
# of Panels 84
Dosing Volume 202.61 gal.

Note: Dosing Volume based on 67% of # of panels times 3.6 gal/panel

Tank Draw Down 6.5 *Generic Draw Down of 31 gal.per in.*

Pump Run Time 5.88 minutes

Elevation Head 49.9 ft.
Pressure Head 2 ft.
Friction Factor 2.37 ft./100 ft. *(From the interpolater.)*
Friction Head 29.25 ft.

Total Dynamic Head (+15%) 93.32 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