ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

2120 Graham Road, Mount Ulla, NC 28125 *Phone/Fax (704) 278 – 0989*

Ashley Rollans, NC Licensed Soil Scientist
Mobile: (704) 746-5046
E-mail: Rollansfortcj@aol.com

Brady Freeman, Registered Sanitarian
Mobile: (704) 746-6497
E-mail: bfree209@yahoo.com

Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 4 bedroom single family residence on Lot #24 in Lakewood Crossing Subdivision, Iredell County, North Carolina.

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October 7, 2005
Project No. 01-1089
Design By: Rollans Soil & Environmental Services

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant: Nation Land Company LLC

Address: 4330 Sterilite Street SE
Massillion, OH 44646
Phone: 330-832-4091
County: Iredell
Location: Lakewood Crossing Subdivision Lot #24

Source of Wastewater Flow: 4 Bedroom Single Family Residence
Estimated Daily Wastewater Production: 480 gpd
System Flow: 26.96538462

Design Specifications

Drainfield Size: 285
Loading Rate: 0.3 gpd/ft.^{2}
Depth of Gravel in Trench: NA (PPBPS)
Gravel Size: NA (PPBPS)
Trench Depth: 36 in.
Trench Width: 36 in.
Septic Tank Size: 1000
Pump Tank Size: 1000

Estimated Supply Line Length: 96
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 16.70
Dosing Volume: 158.64
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: 1.71
Elevation Head: 8.70
Total Dynamic Head: 14.27

Threaded Union: In Tank
Gate Valves: 1 in Tank
1 per lateral (4)
Check Valves: In Tank
Anti-Siphon Hole: NA
Additional Comments: Soil suitability was performed by Rollans Soil & Environmental Services

Lakewood Crossing Lot 24
LP PPBPS

DESIGN FLOW:	480
SOIL APPLICATION RATE:	0.3 gpd/ft²
TOTAL AREA TRENCH BOTTOM:	855
TOTAL LATERAL LENGTH:	285
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	266.6666667
SUPPLY LINE LENGTH:	96
TOTAL DYNAMIC HEAD:	14.27
MANIFOLD SIZE:	N/A
DOSING VOLUME:	158.64
PUMP TANK DRAW DOWN*:	7.6
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.*

Lakewood Crossing Lot 24

Project #: 01-1089

LAYOUT FOR 4 BEDROOM HOME — October 7, 2005

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		2.8			100.00		
INSTR. 1			102.80				
HOUSE CNR				7.90	94.90		
P. TANK				7.60	95.20		
1	BLUE			3.50	99.30	65	65
2	ORANGE			4.20	98.60	121	121
3	PINK			4.90	97.90	110	110
4	***BLUE***			***5.90***	***96.90***	***125***	***125***
5	***ORANGE***			***7.10***	***95.70***	***120***	***120***
6	***PINK***			***9.30***	***93.50***	***40***	***40***
					Total	581	581

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***285***	***0.3***	***MOD.***	***0.30***	***PPBPS***	***LOW PRESSURE***
Repair	296	0.3	MOD.	0.30	PPBPS	LOW PRESSURE

Notes:
** TBM located top of ground at EIP at corner of lot 23 and 24 (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 - Lakewood Crossing Lot 24

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
4	BLUE	96.9	**125**	0.156	**0.41**	375	28.84615385
5	ORANGE	95.7	**120**	0.156	**0.41**	360	27.69230769
6	PINK	93.5	**40**	0.156	**0.41**	120	9.230769231
	total	**feet =**	**285**	**gal/min =**	**26.965385**		
			Des. Flow	**480**			
			Pump Run=	**5.88**			
			soil LTAR	**0.3**			
			LTAR +5%	**0.315**			
			LTAR with mod.	**0.27**			
			LTAR with mod.. + 5%	**0.2835**			

.156 equals 5/32 inch hole