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SPECIFICATIONS, CALCULATIONS, SOILS REPORT

& SUPPORTING MATERIAL

FOR AN OFFSITE

GROUND ABSORPTION SEWAGE DISPOSAL SYSTEM USING SEPTIC TANK, PUMP TANK AND LOW PRESSURE T&J PANEL LATERALS

FOR A

4 BEDROOM RESIDENCE

162 SAGEMORE ROAD

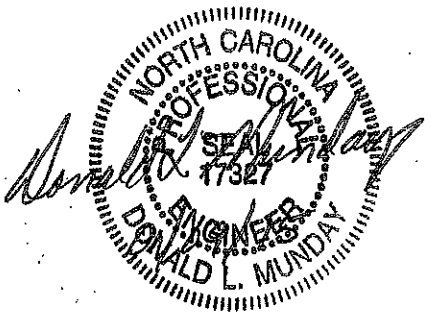
Mooresville, Iredell County, North Carolina

APPROVED MAR 1 3 2015

December 22, 2014

Prepared for:
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DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

Sheet __1__ *of* __1__
PROPERTY ID #: _____
COUNTY: _Iredell_____

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

APPROVED MAR 1 3 2015

OWNER: _____ APPLICATION DATE_____
ADDRESS: _____ DATE EVALUATED: _____
PROPOSED FACILITY: _4 bdrm_____ PROPOSED DESIGN FLOW (.1949): _480 GPD_____ PROPERTY SIZE: _____
LOCATION OF SITE: _Harbor Landing 30A_____ PROPERTY RECORDED: _____
WATER SUPPLY: ☒ Private ☐ Public ☒ Well ☐ Spring ☐ Other _____
EVALUATION METHOD: ☒ Auger Boring ☐ Pit ☐ Cut TYPE OF WASTEWATER: ☒ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
1	LS 5%	0-40	R C SBK	FR SS SP	N/A	48"	N/A	N/A	PS 0.3
		40-48	R CL WSBK	FR SS SP					
2	LS 7%	0-32	R C SBK	FR SS SP	N/A	48"	N/A	N/A	PS 0.3
		32-48	R CL WSBK	FR SS SP					
3	LS 5%	0-30	R C SBK	FR SS SP	N/A	48"	N/A	N/A	PS 0.3
		30-48	R CL WSBK	FR SS SP					
4	LS 5%	0-8	Br CL WSBK	FR SS SP	N/A	48"	N/A	N/A	PS 0.3
		8-40	R C SBK	FR SS SP					
		40-48	R CL WSBK	FR SS SP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	801 FT2	801+ FT2
System Type(s)	PPBPS	PPBPS
Site LTAR	0.3	0.3

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): _____PS_____
EVALUATED BY: _M A & Associates_____
OTHER(S) PRESENT: _____

COMMENTS: _____

Mark Kenney 4 Bedroom LP Panel Block System
162 Sagemore Road
Mooresville, Iredell County, NC

Original Date: December 22, 2014
Revised Date: December 22, 2014

Design Flow

Bedrooms	4	Bedrooms	
Flow per Day per Bedroom	120	Gal./Day/Bedroom	
Daily Design Flow (DDF)	480	Gal./Day	
Use PPBPS Laterals for 50% Reduction in Drainfield Size			
LTAR	0.30	G/D/SF	Per Michael Athanas, LSS
Sq. Ft. Trench Bottom	1,600	Sq. Ft.	DDF x LTAR
	3		
Field Sizing	533.33	LF Conventional Lines	(SF Trench Bottom/3)
PPBPS Sizing	266.67	LF 50% Reduction System	(LF Conv. Line x 0.5)
LF per Field	267	LF Total	
Laterals per Field	4	Lines	Average
LF Per Lateral	67	LF	Average

Dose Volume

No. of Panels	62	Panels	(Per Panel Design Manual)
Panel Volume	3.60	Gal./Panel	(Per Panel Design Manual)
Flow Rate	160.00	Gal./Dose	3 Doses per Day
Pump Run Time	5.16	Minutes	(Orifice Flow Rate x # of Panels)
Operation Head	3.00	Feet	(Per Panel Design Manual)
Use 5/32" Diameter Hole			
Flow Rate per Panel	0.50	G/M	(Per Panel Design Manual)
Field Flow Rate	31.00	G/M	(No. of Panels x Orifice Flow Rate)
Force Main Static Head	36.00	Feet	(From Site Plan) (HP 796 - LP 760)

Friction & Minor Loss Calculations for 3" Force Main and 1.25" Supply Laterals				
	Friction Loss	Pipe Length	Q	Pipe I.D.
Pipe Run	(Feet)	(Feet)	(GPM)	(Inches)
2" Force Main	10.20	450.00	31.00	2.067
3" Force Main	2.10	635.00	31.00	3.068
Line 1	1.01	76.61	8.00	1.380
Line 2	0.60	76.61	6.00	1.380
Line 3	0.81	55.00	8.50	1.380
Line 4	1.13	76.61	8.50	1.380
Total Friction & Minor Loss	19.04	Feet		

Total Dynamic Head	58.04	Feet	(Static HD + Friction HD + Oper. HD)	
Pump Required	**31.00**	G/M at	**58.04**	TDH

Use Goulds WE1512H or Engineer Approved Equal

Drawdown

Tank Volume per Inch	20.42	Gallons per Inch
Dose Volume	160.00	Gallons
Drawdown	7.84	Inches per Dose
Pump Run Time	5.16	Minutes per Dose

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TANK ANTI-BUOYANCY CALCULATIONS

1,500 Gallon Pump Tank — *Based on Dellinger Precast Tank Company* **PT-283**

Outer Length	7.92	Ft.		
Inner Length	7.42	Ft.		
Outer Width	4.92	Ft.		
Inner Width	4.42	Ft.		
Outer Height	5.00	Ft.		
Inner Height	4.33	Ft.		
Wt of Water Displaced	12,144.17	Lbs.		Outer Length x Outer Width x Outer Length x 62.4 Lb/CF (Wt of Water)
Wt of Tank	3,853.44	Lbs.	Top & Bottom	Outer Length x Outer Width x 150 Lb/CF x 2 (Top & Bottom) x Slab Thickness
	1,597.92	Lbs.	Ends	Inner Width x Inner Height x 150 Lb/CF x 2 (Ends) x Wall Thickness
	2,410.42	Lbs.	Sides	Outer Height x Outer Length x 150 Lb/CF x 2 (Sides) x Wall Thickness
	7,861.77	Lbs.	Total Tank Wt.	Sum Above four
Wt of Overburden	5,838.54	Lbs.	15" Cover	Outer Length x Outer Width x 120 Lb/CF (Saturated Soil Wt) x Soil Thickness
Total	13,700.31	Lbs.		Sum of Total Tank Wt. & Soil Overburden

Water	**12,144.17**	<	**13,700.31**	Tank

**Buoyancy Calculations Account for Fluid in Tank, Do Not Pump When Ground is Saturated or During Extremely Wet Conditions.*