

SouthWest BioSystems L.L.C.

9/23/2020

SouthWest BioSystems LLC

6050 N. Tula Lane

Tucson, Az. 85743

Below is a summary of the Site Suitability Analysis for a septic system located at 4146 N. Gerhart Road, Tucson, Arizona, with the exception of verifying the lot is not within a 100 year flood plain. Flood plain verification is not part of this report.

Test holes were excavated in the proposed septic location as designated at a prior meeting with Mr. Weiss. The proposed locations were not suitable due to limiting subsurface conditions, so additional ASTM Test holes were excavated around the proposed locations to search for suitable soil for a conventional septic system. 4 additional holes were excavated with ASTM Soil Analysis performed on three of the deepest holes. 3 ASTM Soil analysis sheets will accompany this letter along with a 4th sheet logging the locations of the shallowest holes along with depths to limiting conditions or bedrock.

Results are as follows:

Surface Limiting Conditions:	Yes
Subsurface limiting Conditions within 12 feet:	Yes
Wash Draining < 20 acres within 50' of proposed septic location:	None
Slope Conditions effecting system install:	None
Depth to Ground Water: > 12' per Test Hole Excavation	

ASTM Soil Analysis Summary

Of 7 test hole excavations, 4 were so shallow that no soil analysis was performed. The limiting condition was bedrock ranging from 2-4 feet. The 3 deepest holes had an ASTM soil analysis performed on the soil horizons. The results accompany this letter. The shallowest of the 3 was 5 feet with the deepest being 12 feet deep. Approximately 7 feet is required for a conventional septic system per Arizona rule with using chamber technology especially in this circumstance with 2 of the holes having a horizon of slow sandy clay soil to a depth of 2 feet.

The usable soil in these test holes had an absorption rate of 0.4 gallons per square foot per day. From the data collected, with respect to the location of the 2 usable test holes it is possible that a conventional septic system may be installed, but additional testing is needed to adequately profile the area to ensure a properly sized area for a home will fit. For example, a 3 bedroom home would require (2) leach lines 40 feet long and the reserve area would more than likely require an alternative system. A 4 bedroom home would require (2) leach

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line 53 feet long & would probably not fit with respect to the data collected and would require an alternative system for both primary & reserve leach lines.

In summary, it is possible that a small conventional septic system may be built on this lot for a two or three bedroom home & probably the reserve area would need alternative treatment. A home of 4 bedrooms or more would more than likely require an alternative septic system for both the primary & reserve leach fields. These results are based on the data collected at this time. More test hole excavations & excavations in a different location may result in finding a suitable area for a conventional septic system large enough to handle a 4 bedroom house or larger.

I appreciate your business very much. For any questions on this report or if you would like us to design and/or install your future septic system please feel free to contact me at the following: Phone # 520-429-7181, email Bob@Southwestbiosystems.com. Our installation company is Bob's Backhoe, Inc. License ROC 235096. We've been in business 31 years with zero complaints and any references are available upon request.

Thank You,



Robert Schmeltzer
President, SouthWest BioSystems LLC

ASTM SOIL CHARACTERIZATION

Name: Robert Schmeltzer		Address: 4146 N Gerhart Road		Test Hole #1							
Depth to Groundwater: >12'		Wastewater Quality: Household Domestic									
Slope: <5%	Vegetation:	Soil Type: Sandy Loam to Sandy Clay Loam									
Vertical Location		Sonoran Desert		Other							
Horizon	Depth	Estimate Water		Determination of Loading Rate							
		Dominant	Mottles	Texture	Structure	Consistence	Boundary	Remark	Loading		
A/B	0-16"	10YR3/6	none	SL	SBK2	S	VFR	S	C		0.6
Bk1	16-36"	10YR4/6	none	SCL	SBK2	SH	FR	S	C	KWC	0.4
Bk2	36-59"	10YR4 5/6	none	SCL	SBK2	SH	FR	S	C	KWC	0.4
Bk3	59-94"	10YR4/4	none	SL	SBK2	SH	FR	S	C	KWC	0.6
Bk4	94" - 12'	10YR5/4	none	LFS	SBK2	SH	FR			WC/XWC	0.4
*Remarks:											
GPS location: 32 16 55.6, -111 05 30.4 Codes in remark section refer to cementation Cementation in bottom Horizon Weak on top over xwc below											

ASTM SOIL ANALYSIS by:
ROBERT SCHMELTZER
BIOTECH SYSTEMS, LLC

[Signature]
9/23/20

ASTM SOIL CHARACTERIZATION

Name: Robert Schmeltzer		Address: 4146 N Gerhart Road		Test Hole #2					
Depth to Groundwater: >12'		Wastewater Quality: Household Domestic							
Slope: <5%	Vegetation: Sonoran Desert	Soil Type: Sandy Loam to Sandy Clay Loam							
Vertical Location		Estimate Water		Determination of Loading Rate					
Horizon	Depth	Color		Texture	Structure				
		Dominant	Mottles			Consistence	Boundary		
A/B	0-24"	7.5YR4/6	none	SCL	SBK3	SH FR	S C	Remark	Loading
Bk1	24-72"	10YR4.5/4	none	SCL	SBK2	SH FR	S C	xwc	0.2
Bk2	72-88"	10YR4/4	none	SL	SBK2	SH FR	S C	xwc	0.4
R	88"+	N/a	none	N/A	M	Vr		Limiting	0.6
*Remarks:									
GPS location: 32 16 55.9, -111 05 29.8 Codes in remark section refer to cementation									
<p>ASTM SOIL ANALYSIS by: ROBERT SCHMELTZER BIOTECH SYSTEMS, LLC</p> <p><i>RS 9/23/20</i></p>									

Name: Robert Schmeltzer	Address: 4146 N Gerhart Road		Test Hole #3
Depth to Groundwater: >12"	Wastewater Quality: Household Domestic		
Slope: <5%	Vegetation: Sonoran Desert	Soil Type: Sandy Loam to Sandy Clay Loam	
Vertical Location		Determination of Loading Rate	
Horizon	Depth	Other	
		Texture	Structure
A/B	0-24"	SCL	SBK3
Bk1	24-54"	SCL	SBK2
R	54"+	N/A	M
Estimate Water		Consistence	
Color		Boundary	
Dominant	Mottles	SH	FR
7.5YR4/6	none	SH	FR
10YR4.5/4	none	SH	FR
N/a	none	Vr	
Remarks		Bedrock	
GPS location: 32 16 56 1, -111 05 29 7		Codes in remark section refer to cementation.	

4146 N Gerhart Road Shallow Holes Excavated to Limiting Condition

Test Hole #	Test Hole GPS Location	Depth to Limiting Condition or Bedrock
#4	32 16 55.2, -111 05 31.0	3 feet
#5	32 16 54.8, -111 05 30.0	4 feet
#6	32 16 56.3, -111 05 30.3	2 feet
#7	32 16 56.3, -111 05 30.5	3.5 feet