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**Report No:** USR:W218-1000-01  
**Issue No:** 1

## Analytical Test Report

**Client:** HIMMEL HAUS FARM  
 92 Himmel Road  
 Fredericksburg, TX 78624  
**Attention:** Rose Marie Belforti  
**PO No:**

Signed: *Katy Jahr*  
 Katy Jahr  
 Chemistry Lab Supervisor  
 Date of Issue: 10/26/2018  
THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

**Sample Details**  
**Sample Log No:** W218-1000-01 **Sample Date:**  
**Sample Designation:** Livestock Manure Briquette **Sample Time:**  
**Sample Recognized As:** Biomass **Arrival Date:** 10/22/2018

### Test Results

	METHOD	UNITS	MOISTURE FREE	AS RECEIVED
Moisture Total	ASTM E871	wt. %		71.14
Ash	ASTM D1102	wt. %	18.07	5.22
Volatile Matter	ASTM D3175	wt. %		
Fixed Carbon by Difference	ASTM D3172	wt. %		
Sulfur	ASTM D4239	wt. %	0.329	0.095
SO <sub>2</sub>	Calculated	lb/mmbtu		0.857
Net Cal. Value at Const. Pressure	ISO 1928	GJ/tonne		
Net Cal. Value at Const. Pressure	ISO 1928	J/g		
Gross Cal. Value at Const. Vol.	ASTM E711	J/g	17847	5151
Gross Cal. Value at Const. Vol.	ASTM E711	Btu/lb	7673	2215
Carbon	ASTM D5373	wt. %		
Hydrogen*	ASTM D5373	wt. %		
Nitrogen	ASTM D5373	wt. %		
Oxygen*	ASTM D3176	wt. %		
*Note: As received values do not include hydrogen and oxygen in the total moisture.				
Chlorine	ASTM D6721	mg/kg	4610	1331
Fluorine	ASTM D3761	mg/kg		
Mercury	ASTM D6722	mg/kg		
Bulk Density	ASTM E873	lbs/ft <sup>3</sup>		
Fines (Less than 1/8")	TPT CH-P-06	wt. %		
Durability Index	Kansas State	PDI		
Sample Above 1.50"	TPT CH-P-06	wt. %		
Maximum Length (Single Pellet)	TPT CH-P-06	inch		
Diameter, Range	TPT CH-P-05	inch		to
Diameter, Average	TPT CH-P-05	inch		
Stated Bag Weight	TPT CH-P-01	lbs		
Actual Bag Weight	TPT CH-P-01	lbs		

**Comments**