

**LEGEND**

- STREAM / WATER
- SELECT APPROX. PROPERTY LINE (USAMNF SURVEY)
- EX. AND DISCHARGE LOCATION (APPROX.)
- EX. TREATMENT POND
- PROP. AMD COLLECTION / CONVEYANCE PIPELINE
- PROP. ACTIVE TREATMENT SYSTEM COMPONENT
- PROP. SLUDGE PIPELINE

REPRESENTATIVE WATER QUALITY						
DISCHARGE	pH	Acidity (mg/L)	Fe (mg/L)	Al (mg/L)	Mn (mg/L)	SO <sub>4</sub> <sup>2-</sup> (mg/L)
M29	3.5	81	2.4	10.7	3.1	372
BURNS BLOWOUT	3.3	185	4.3	26.2	9.0	725
LONG RUN	2.9	144	9.7	9.8	0.3	150
COKETON (M29 + BURNS)	3.4	105	3.1	12.3	3.7	441
BLACKWATER (COKETON + LONG RUN)	3.3	113	4.4	12.4	3.0	317

Note: All metal concentrations are dissolved values. All acidity values are calculated from laboratory data. Long Run representative data is a composite sample of the major Long Run discharge sources collected by BioMast, Inc. (BMI) 4/7/2021. Blackwater representative data is a composite sample of Coketon + Long Run proportional mix collected by BMI 4/8/2021. See notes under Design Basis table.

DESIGN BASIS						
ESTIMATED COMBINED WATER CHARACTERISTICS						
PARAMETER		M29 (1)	BURNS BLOWOUT (2)	LONG RUN (3)	TOTAL	PER UNIT
		FOB(CONCURRENT)	FOB(CONCURRENT)	(2021)		
FLOW (GPM)	MAX	3,529	1,220	3,008	7,758	3,879
	AVG	1,263	299	2,060	3,622	1,811
ACID LOAD (LB/DAY)	MAX	4,288	2,923	3,847	11,058	5,529
	AVG	1,240	730	3,135	5,105	2,553

(1) Treatment design - FOB data concurrent with Burns Blowout  
 (2) Treatment design - FOB data concurrent with M29  
 (3) Treatment design - Based on 3 samples in 2021 by WV DEP & BMI [(2/25/21 - HIGHEST RECORDED FLOWS), 3/22/21, 4/6/21]

**Notes:**  
 Data presented on this sheet for the sizing and design of the Blackwater Active Treatment System can be found in the 2017 Coketon Report completed by BioMast, Inc. for FOB. Additional data was collected in 2021 by WV DEP and BioMast, Inc. for the Long Run monitoring.

**Acronyms:**  
 FOB: Friends of Blackwater



**General Map Notes:**  
 Topographic contours provided by WV GIS Technical Center. The lidar aerial acquisition was conducted between November 8, 2018 and May 5, 2019. Original contour files modified by selecting only 2' contours and reprojecting into NAD83 West Virginia State Plane - North (feet). Attribute data was used to assign the elevation of the contours.  
 Select property owner and property line locations from WV State Tax Map Office published on WV GIS Technical Center Clearinghouse in August 2020.  
 Additional information from As-Built drawings for the Douglas Highway #2 project provided by the State of West Virginia, Department of Environmental Protection, Abandoned Mine Lands & Reclamation Section (# DEP 3531).  
 All property line locations are approximate. **THIS IS NOT A PROPERTY SURVEY**  
 Other features approximately located based on aerial photography (March 2019) available from the WV GIS Technical Center and limited field investigations.

200 100 0 100

**SHEET 1 OF 1**

**SITE OVERVIEW MAP**  
**BLACKWATER ACTIVE TREATMENT SYSTEM**  
 for  
**FRIENDS OF BLACKWATER**  
 Fairfax District, Tucker County, West Virginia  
 Scale: 1" = 200' November 2021  
 BioMast, Inc., Mars, Pennsylvania  
 Mining and Reclamation Services www.biomast.com

PRELIMINARY FOR DISCUSSION PURPOSES ONLY