



## ENGINEERING & ENVIRONMENTAL SERVICES DEPARTMENT

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Hameed Malik, PhD, P.E., Director  
Walt Corbin, P.E. Engineering Manager

### MEMORANDUM

**To:** Dr. Hameed Malik, PhD, PE - Director

**From:** Walt Corbin, PE - Engineering Service Manager *WNC*

**Date:** 1/29/2023

**Subject:** Emergency Procurement – Tarp Machine for Alternative Daily Cover (ADC)

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The Landfill currently owns three articulating trucks used to haul borrow material to various locations on the site. The borrow material is used for assorted operational needs of which, two activities are critical to the continued compliance with the Georgia Environmental Protection Division (GaEPD). These activities include *temporary daily waste cover* and final slope construction. Due to the aging Solid Waste handling fleet at the Augusta Landfill, operations are routinely hampered by frequent downtime due to maintenance related failures. As such the Solid Waste Operations is currently utilizing one departmental owned truck as well as one rental while the other two are awaiting repairs.

The GaEPD allows for *temporary daily waste cover* to be replaced by an Alternative Daily Cover as deemed appropriate by the operation. Because the cost (excavation, transportation, and placement) and value of the airspace consumed by traditional daily waste cover soil, it is common for landfills to seek out and use an approved Alternative Daily Cover (ADC). The savings in soil handling costs and airspace consumption are very significant and cannot be overlooked. As a consequence of these substantial annual costs, the inconsistency with available operational equipment, it has become necessary to explore suitable and proven replacements to traditional cover soil. Not only do potential replacements need to be cost effective, but they must also be operationally feasible and satisfy the regulatory minimum performance standards for ADC.

By transitioning from traditional soil waste cover to an ADC (tarp), the department will be able to continue maintaining compliance with GaEPD, be less reliant on the unreliable articulating trucks, and save a considerable amount in airspace, fuel, time and the number of staff required to meet regulatory compliance.

Procurement of the tarp machine is vital to maintaining operational efficiency and compliance.

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## By Blue Ridge: Tarp deployment system - NEED & JUSTIFICATION

Due to the cost (excavation, transportation, and placement) and value of the airspace consumed by traditional daily and intermediate cover soil, it is common for efficient-minded landfills to seek out and use an approved Alternative Daily Cover (ADC). The savings in soil handling costs and airspace consumption are very significant and cannot be overlooked.

As a consequence of these substantial annual costs, it became necessary to explore and recommend suitable and proven replacements to traditional cover soil. Not only do potential replacements need to be cost effective, but they must also be operationally feasible and satisfy the regulatory minimum performance standards for ADC. There are numerous manufactured products and waste derived materials that can be effectively utilized as ADC. However, the selection of an ADC is dependent on a variety of site-specific factors. What might perform well at one facility might not perform well at another. Based on our understanding of the site-specific factors and limited access to waste derived ADC's, we focused our efforts toward comparing the ADC's shown in the following table. For comparison sake, we also included traditional cover soil in the table. Obviously, traditional cover soil performs very well, but comes at a substantial cost due to the landfill airspace it consumes. Based on our extensive experience working with these ADC's, we developed the following table that provides a side-by-side comparison. The green areas indicate when a particular ADC favorably meets the given criteria, and the red indicates a less desirable outcome. We included the gray areas where there was insufficient information.

		ADC Performance Criteria							
		Rain Infiltration	Fires	Flies	Birds	Odors	Litter	Aesthetics	Cost
A D C T y p e	Soil								
	Enviro Cover Film								
	Tarps		?						
	Foam	?				?		?	?
	Spray on	?				?		?	?
	Wood/Greenwaste								?
	Shingles								?
	Auto Shredder Residual								?

From a performance perspective, we recommend that the landfill moves forward with purchasing an automated tarp deployment system. We have based this recommendation on our extensive experience with landfill ADC, our onsite observations, understanding of the unique operation and evaluation of ADC Performance Criteria. When used properly, tarps deployed with an automated tarp deployment system have the following positive attributes:

- Since they are removed each day, tarps do not occupy valuable airspace. Cover soil and other typical forms of ADC such as: green waste, shredded tires, auto shredder fluff, bio-solid material, roofing material all consume airspace when utilized.
- One of the key benefits of removable tarps, is that the tarps can be reused over and over. For soil and ADC's that are not removable, each day a new supply of this material must be utilized. On an annual basis, this represents a significant quantity of material and cost.
- When properly maintained and deployed as intended, landfill tarps will typically last a minimum of 18 months. In some cases, sites with effective tarp maintenance programs can extend tarp life even longer. When considering that tarps are used over and over, the initial capital costs of these tarps can be amortized over their entire life. Each tarp has the potential to cover an enormous amount of square footage over its life, so amortizing the initial capital costs over all the square footage in which they will cover results in very attractive cost per square foot.
- In comparison to cover soil and other forms of ADC, automated tarp deployment systems can cover and uncover a significant amount of square footage relatively quickly. Additionally, this coverage can take place with a single piece of heavy equipment and perhaps a spotter.

Our recommended waste cell geometry resulted in a surface of approximately 30,000 sq' that would need to be covered with soil or an ADC at the end of each day. Covering this 30,000 sq' with soil each day would require approximately 555 cy or 22 haul trucks of soil. Using an industry standard airspace valuation of \$15.00 pcy, the use of tarps in lieu of soil would save approximately \$8,300 of airspace each day. When factoring in the hourly owning and operating cost of the heavy equipment needed to excavate, transport and spread cover soil, this daily savings would be even more significant.



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TDS30F262 Spool Assembly, 30 FT, XS	EACH	7	0	9,999.500	69,996.50
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