

Give Your Air Space More Space! **COMPOST**



*The great accomplishments of man have
resulted from the transmission of ideas
and enthusiasm.*

Presented to:
2005 Annual Meeting
Colorado Rocky Mountain
SWANA Chapter
September 16, 2005
Glenwood Springs, Colorado

Presented by:
Bob Yost, A1 Organics

Introduction

A1 Organics

Colorado's Leader in Organic Recycling

A1 has...

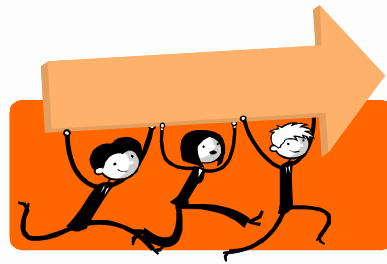
- over 30 years experience in the recycling industry
- multiple sites throughout Colorado
- produced in excess of 350,000 CY of high quality compost and soil amendments per year
- become nationally recognized for its successful partnerships with a variety of government entities and private companies



Bob Yost
Vice President
New Business Development
A1 Organics

The Obvious Conclusion

Divert material
from landfill



Save (create)
new air space.

(Analogy: “If you put a bullet in the furnace, it will explode.”)



The Obvious Challenge

Can we **DIVERT** material via composting and **ADD** to the bottom line if we are a **private landfill**?

or

DECREASE costs if we are a **public-owned landfill**?





Composting Effects on Volume

What affects does composting have on volume?

- a. Volume reductions vary by feedstock
- b. Food waste is generally very high in moisture
- c. The mix or blend of feedstock materials does have an impact on calculating volume reduction.
- d. Reasonable assumption is that a reduction of 70% can be achieved by composting (the finished compost volume will be 20 - 30% of the feedstock volume)



Composting Options

What options exist to the landfill for implementing a composting option?

- a. Permit and create a composting site on the landfill - with or without partnership with composting company
- b. Contract with an existing contractor to remove materials from the landfill and process them at their facility
- c. Divert material to separate transfer facility, and then to the composting facility.
- d. Creative options - client specific



Case Study

What are economic benefits or impacts?

Simple Case Study

Private / Public Partnership

City of Cheyenne, Wyoming and A1 Organics





Cheyenne / A1 Partnership

OBJECTIVE:

The diversion of organic wastes from the landfill to the composting facility to create new airspace and extend the life of the landfill.

BASIC OUTLINE OF PARTNERSHIP:

- Cheyenne provided the site
- A1 Organics operated the facility and marketed the products produced

Summary:

In 1997, Cheyenne projected they had approx 10 yrs of available landfill space left.

In 2005 (8 yrs later), projections show they still have 5 yrs left at existing landfill site.

A yard waste ban at landfill was enacted in 2003, and they began curbside collection in 2002.

A decorative header image on the left side of the slide. It features a glowing yellow lightbulb on the left and a glass container with a yellow liquid inside on the right, set against a dark background.

Economic Analysis

Assumptions and Conditions – Cheyenne Model

- Cost of new air space: \$35/ton or \$17.50/CY (based on loose volume conversion of 500 #'s per CY)
- Distance to landfill from transfer facility: 15 miles
- Volume diverted in 2003: 32,662 CY

Economic Analysis

Net Savings to Cheyenne – 2003 (a simple analogy)

- Volume diverted: 32,662 cubic yards or 8,165 tons *
- Total NET cost of operations (gross cost less revenue from product sales): \$202,860 - \$141,881 = \$60,979
- Cost per unit of feedstock material for composting: : \$1.87/CY or \$7.47 per ton
- Cost of air space for same volume @ \$35 per ton: \$285,775
- Net economic gain: \$224,796 (\$6.88/CY or \$27.53/ton)

* Conversion from CY to Tons based on loose volume average weight of 500 #'s per CY



What If's for you...

Landfill space costs - at \$35.00 per ton

Potential Cost Savings per Unit Diverted from Land Filling to Composting Based on Cost of Air Space										
			COST TO COMPOST Per Unit of Feedstock Volume	Savings (Cost) per unit diverted						
Weight of Compacted MSW per CY (In Landfill)	1,000 pounds									
Cost per Ton for Air Space	\$35.00	per TON	\$8.03	\$26.97						
Cost per CY for Air Space (compacted)	\$17.50	per CY	\$3.01	\$14.49						
			Estimated Compost PRODUCTION Cost per cubicyard (finished/unscreened) ====>	\$6.00	Cost per Unit of Original Volume Received			Cost to Compost Each Material Based on <u>Feedstock Volume</u> and Percentage of Mlx Received		
Feedstock Material Being Diverted	Compacted Wt. per CY in Truck	Percent of Incoming Volume Remaining After Composting	Grind Cost per Cubic Yard - Finished <u>Compost Volume</u> Basis	Estimated Cost Per Unit Including Grinding Allowance Based on <u>Finished</u> Material Volume	Per CY of Original Volume	Per Ton of Original Volume	% each item in Mixed MSW diverted	Per CY	Per Ton	
Loose Limbs and Wood Waste	750	40%	\$2.50	\$8.50	\$3.40	\$9.07	74%	\$2.51	\$6.68	
Ground Wood Waste	750	70%	\$0	\$6.00	\$4.20	\$11.20	4%	\$0.17	\$0.45	
Food Waste	750	20%	\$5.00	\$11.00	\$2.20	\$5.87	5%	\$0.11	\$0.29	
Wet Grass	750	20%	\$0	\$6.00	\$1.20	\$3.20	9%	\$0.11	\$0.29	
Wet Leaves	750	25%	\$0	\$6.00	\$1.50	\$4.00	8%	\$0.12	\$0.32	
							100%			
Grinding cost on Feedstock Volume			\$1.00		Estimate Cost per Unit for Projected Mix			\$3.01	\$8.03	

What If's...

Landfill space costs - at \$17.00 per ton

Potential Cost Savings per Unit Diverted from Land Filling to Composting Based on Cost of Air Space											
				COST TO COMPOST Per Unit of Feedstock Volume		Savings (Cost) per unit diverted					
Weight of Compacted MSW per CY (In Landfill)		1,000 pounds									
Cost per Ton for Air Space		\$17.00 per TON		\$8.03		\$8.97					
Cost per CY for Air Space (compacted)		\$8.50 per CY		\$3.01		\$5.49					
				Estimated Compost PRODUCTION Cost per cubicyard (finished/unscreened) ====>		\$6.00		Cost per Unit of Original Volume Received		Cost to Compost Each Material Based on <u>Feedstock Volume</u> and Percentage of Mix Received	
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								100%			
		Grinding cost on Feedstock Volume		\$1.00		Estimate Cost per Unit for Projected Mix			\$3.01	\$8.03	

What If's...

Landfill space costs - at \$15.00 per ton

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			COST TO COMPOST Per Unit of Feedstock Volume	Savings (Cost) per unit diverted						
Weight of Compacted MSW per CY (In Landfill)	1,000	pounds								
Cost per Ton for Air Space	\$15.00	per TON	\$8.03	\$6.97						
Cost per CY for Air Space (compacted)	\$7.50	per CY	\$3.01	\$4.49						
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Grinding cost on Feedstock Volume			\$1.00		Estimate Cost per Unit for Projected Mix			\$3.01	\$8.03	

What If's...

Landfill space costs - at \$13.00 per ton

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Wet Leaves	750	25%	\$0	\$6.00	\$1.50	\$4.00	8%	\$0.12	\$0.32	
							100%			
Grinding cost on Feedstock Volume			\$1.00		Estimate Cost per Unit for Projected Mix			\$3.01	\$8.03	




Transportation

Transportation should also be evaluated ...

For Cheyenne, they saved 8,000 miles of hauling costs in 2003.



Conclusions

 <p>Composting can significantly impact air space availability</p>	<p>Many options for implementation exist</p> 
<p>Composting can ADD TO the bottom line while “creating” new air space</p> 	<p>There is NO substitution for experience</p> 