

USING RESIDUALS TO IMPROVE NEW ENGLAND SOILS

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Resource Management, Inc.



RESOURCE MANAGEMENT, INC.

- RMI is a regional organic residuals recycling company based in Holderness, NH.
- RMI employs 25 people including agronomists, compliance specialists, field technicians, truck drivers, operations, sales, and project managers.
- Annually, RMI recycles over 325,000 cubic yards of organic residuals throughout the Northeast.



SPREADING DEMONSTRATION FROM YESTERDAY.....



RMI provides solutions for municipal treatment plants and industry throughout the northeast by connecting farmers and land owners with residuals that bring them value.



Morrill Farm

The Morrill family has grown corn on their home farm fields for generations. Biosolids and short paper fiber supplement their limited manure supply to provide fertilizer and organic matter for their corn crop.



Biosolids are a nutrient-rich fertilizer high in organic matter and micronutrients essential for hardy plant growth.



SHORT PAPER FIBER

Short paper fiber (SPF) is a residual from the paper making process. It has a high organic matter and can be recycled for many uses.



- Soil Amendment
- Animal Bedding
- Manufactured Topsoil
- Landfill Closures





Short paper fiber (SPF) increases organic matter
and improves soil tilth



MOSHER FARM

The Challenge:

Tropical Storm Irene turned a fertile pasture into a stripped wasteland.

The Solution:

RMI blended short paper fiber and biosolids to create a topsoil to restore the loss of thousands of yards of soil and vegetation and put the pasture back together again.



Pasture/Scenic Vista – Killington, VT

Ottauqueechee River



Same Pasture During Hurricane Irene – August 2011

Ottauqueechee River



Irene Cleanup Effort Summer 2012



Restored Pasture Using Manufactured Topsoil - 2013



COMMUNITY SOCCER FIELD

The Challenge:

The only land available to a small community to create a youth soccer field was a former gravel pit.

The Solution:

RMI blended short paper fiber, biosolids and a mineral base to create an engineered topsoil that would take the abuse of athletics and support a lush vegetative cover. Hydroseeding provided a nice even pattern of grass growth.



MT. TOBY FARM

The Challenge:

Due to the very sandy nature of the soils at Mt. Toby Farm's Bull Hill fields, drought conditions were common and the yields were consistently lower than those from nearby fields with better soils.

The Solution:

RMI applied short paper fiber to increase the organic matter and enhance the water holding capacity of the soil.

In addition the use of these residuals increased the % crude protein in the corn silage by nearly a full percentage point - from 2.2 to 3.1.



Building Organic Matter in Droughty Soils – Silage Corn



Silage Corn Tissue Analysis

Parameter	Amended	Non-Amended
% Phosphorus	0.08	0.06
% Potassium	0.40	0.33
% Magnesium	0.05	0.04
Cu:Mo ratio	13.3	10



- **SPF and biosolids were applied to soil surface and plowed in with dairy as potassium source**
- **500 cubic yards per acre application rate**
- **Equivalent to 60 dry tons per acre of fresh organic matter and close to 60 tons of lime equivalence per acre**

PROUTY GRAVEL PIT

The Challenge:

Once mining operations were completed at the sand pit, the remaining “soil” was truly sand, with little to no nutrients or organic matter. The former pit needed to be transformed and required organic matter and essential soil nutrients in order to achieve the goal of creating a productive hay field.

The Solution:

RMI worked with the property owner to develop a restoration plan to create a new topsoil layer and the entire pit was seeded down to create a hay field. This field now outperforms other local fields in terms of yield and quality.



Spent Gravel Pit – No Topsoil on Site



Reclaimed as Hay Field

Topsoil Manufactured from deink mill short paper fiber with heat dried biosolids as the nutrient source



IVEK SOLAR FARM

The Challenge:

The best locations for siting a solar farm is a wide open area with maximum exposure. A former gravel pit offered an ideal location for Ivek's facility, but did not support any vegetation.

The Solution:

RMI worked with the property owner to develop a restoration plan to establish a lush vegetative cover, which reduced dust and protected Ivek's solar equipment.



Spent Gravel Pit → Hayfield in One Field Season



Focus on providing crop nutrition and long-term nutrient balance



Nitrogen and base cation (calcium, magnesium and potassium) balance are critical for long-term success on agricultural fields

Sites can take longer to establish and sustain crop







Residuals Make a Difference

- ✓ Locally produced residuals provide cost-effective alternative to expensive fertilizers
- ✓ Can create topsoil and restore land where there is no other source of loam
- ✓ Provides value to farmers and landowners
- ✓ Proven long-term success using recyclable organic materials





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