Agenda

- MSRA Business
- Introduction of Technical Presentation: Kirk Mantay
- Presenters:
  - Chaney Enterprises: Sal Bianco
  - Rolanka International Inc.: Udare Santha
  - York Building Products: Brian Anstiss
  - Level Land Inc.: Justin Brendel
  - Chesapeake Valley Seed: Jon Straughn
- Q & A
Spring 2019 Technical Presentation

An Evening with Stream Restoration Material Suppliers
THIS IS WHO WE ARE!

We are passionate about providing ready-mix concrete, sand, gravel, stone, blended soils, and related construction supplies throughout the East Coast. Our focus is to improve your business by going the extra mile delivering the finest products to you the first time, on-time, every time.

- SAND GRAVEL
- READY MIX CONCRETE
- STONE RESALE
- CONSTRUCTION SUPPLIES
Mining and Reclamation

Process called “10-10-10”

- Preparing 10 acres
- Mining 10 acres
- Reclaiming & Restoring 10 acres
Mining and Reclamation
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Mining and Reclamation
MINE SITE LOCATIONS

MARYLAND
VIRGINIA
DELAWARE
<table>
<thead>
<tr>
<th>Location</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crofton</td>
<td>Concrete sand, Flume sand - very fine, Washed ¾” gravel and Pea Gravel</td>
</tr>
<tr>
<td>Riddle</td>
<td>Mason and Concrete Sand, Pea Gravel - ¾” and 2” gravel, Select Fill, Asphalt Sand</td>
</tr>
<tr>
<td>Loveville</td>
<td>Mason and Concrete Sand, Pea Gravel - ¾” and 2” gravel, Drainage Gravel (sandy)</td>
</tr>
<tr>
<td>Bridgetown</td>
<td>Mason and Concrete Sand, Pea Gravel - ¾” and 2” gravel, Unscreened Topsoil, Tailings/kickoff</td>
</tr>
<tr>
<td>Waldorf</td>
<td>Mason and Concrete Sand, Pea Gravel - ¾” and 2” gravel, Tailings, Limited Natural Bank Run, SHA and MDE Bio Soils, Ballfield mix, Specialty Blends made to order</td>
</tr>
</tbody>
</table>
Sand & Gravel Products

DE - Sussex
Mason and Concrete Sand
Pea Gravel- ¾” - 2” gravel
Barging capability great for shoreline restoration

VA - Moss Neck
Mason and Concrete Sand
Pea Gravel- ¾” - 2” gravel
TAILINGS

Not graded for size
Not washed
Generally 3” up to 6-8” diameter

Waldorf- Loveville and Moss Neck
Inventory @ 200 tons or less

Bridgetown
Large pile mixed with clay/mud
17,000 tons
Coconut fiber (Coir)
The best natural fiber for protecting and preserving our environment

Udare S. Santha
RoLanka International, Inc.
Stockbridge, GA, USA
Coconuts Trees (Cocos nucifera)

- Tall palm tree native to East India
- Coconut trees grow all over Sri Lanka
- No waste - every part of the tree can be used
- Grown as a plantation crop
- Year round production
- Over 100,000 acres of coconuts grow in plantations
- Coconut fruits are harvested once in every 7 weeks
  - About 700 -1000 nuts/acre
- Manual harvest with a skilled labor force
Coconut trees have a life span of 60-80 years.
Uses of Coconut Trees

- Mainly for food
- Water inside is healthy to drink
- The outer hard shell is burnt to make activated carbon
- Left over husks are processed for fiber
- Coconut leaves can be used as temporary roofing material
- Wood can be used as lumber or firewood
What is Coconut fiber (coir)

- Abundant, renewable natural resource
- Byproduct from the coconut industry
- No waste is generated
Processing of coir

- Traditional coir processing involves curing (retting) the coconut husks in freshwater for at least 3 months.

- During curing, the coconut husks turn dark brown in color.
  
  - Curing also increases the durability, strength and flexibility of the coir.

- With increased demand, there are new machines to separate fiber without the retting process. This fiber is light brown in color and have less durability, strength and flexibility.
Coir Separation

- With skilled processing, coir fiber is separated into different grades, depending on the length of the fiber.

- This fiber separation process is done only in Sri Lanka. Many countries use coir as mixed fiber without separating.
Coir Dust

- Pith (dust) is left after processing the fiber
- An excellent soil-less plant growing medium for organic gardening
- Coir pith can also be used in worm cultures and as reptile bedding
- High absorption - good for environmental cleanups
- No waste at all
Advantages of Coir Fiber

- Higher strength compared to most natural fibers
- High water holding capacity and supportive of plant growth
- Excellent filtering medium
- Unpalatable for animals and environmentally safe
- Capable of making a variety of economical finished products
- Slow rate of decomposition, last longer
- Easily mixed with soil and can provide mulch
- Readily available
Product Performance

- Fiber processing method
- Type of fiber used

Bristle Coir Woven Mat

Mixed coir woven mat

Darker brown

Lighter brown
Advantages of bristle coir woven blankets

- Holds moisture and supports vegetation growth
- No plastic netting
- Open weave allows seeding through the mat and re-seeding, if necessary
- Easy installation
- Higher resistance to UV light compared to synthetic mats
- Coir twine poses no threat to wildlife
- High tensile strength and provide initial support in bioengineering applications
- Last 4 - 6 years
Side by side comparison
coir mat vs synthetic mat

Woven coir mat  Synthetic mat
Synthetic Sediment Control Products

- Increases costs
- Not environmentally friendly
Coir Streambank Restoration Products
Thank you!
Company Overview

Part of Stewart Companies, a ten-company conglomerate.

Group of 12 brands of auto dealerships. Also holds car wash, parts delivery, collision centers and used vehicle operations.

Billboard media company with boards located throughout central PA and northern MD.

Specializes in the acquisition, development, and management of upscale neighborhood shopping centers in central PA and northern MD.

Baltimore-based construction contractor noted for excellence in institutional construction and historic preservation.

Hanover, PA-based Welding, Fabricating, and Metal Servicing operation.
Company Overview

Stewart & Tate
A full-service building, sitework and industrial contractor. Serving the central Pennsylvania and Maryland regions.

Stewart Properties
A real estate development and investment company that serves the Mid-Atlantic region.

WSM
An aggregate mining and construction materials supply company based in Carbondale, Colorado. Includes a ready-mix subsidiary.

YMG
Asphalt manufacturing concern, with multiple locations serving the greater York and Adams county areas.

York Building Products
A construction materials company producing aggregates, concrete block, colored mortars, concrete hardscapes, and construction supplies.
Quarry Facilities

YORK COUNTY, PA
- Lincoln Stone Quarry
- Roosevelt Stone Quarry

CECIL COUNTY, MD
- Belvedere Sand & Gravel Plant
- Cecil Sand & Gravel Plant
- Perryville Sand & Gravel Plant

QUEEN ANNE'S COUNTY, MD
- Eastern Shore Sand & Gravel Plant
Sand & Gravel Facilities

EASTERN SHORE PLANT

Located in Ingleside, MD
- Sand & Gravel Products

Quick Facts:
100 acres
XX tons per year
Sand & Gravel Facilities

BELVEDERE PLANT

Located in Port Deposit, MD
- Sand & Gravel Products

Quick Facts:
XX tons per year
BELVEDERE PLANT

- Operations 6am to 4pm, 6 days a week
- Produce 24 different products
- 63 employees between the 3 sites
- Surface mine only
- All natural. No crushing... just screens
Quarry Facilities

LINCOLN QUARRY

Located in Thomasville, PA
- Primarily Limestone Products

Quick Facts:
  XX tons annually
1 asphalt plant on site
Quarry Facilities

ROOSEVELT QUARRY

Located in York, PA
- Primarily Limestone Products

Quick Facts:
- XX tons annually
- 1 Asphalt plant on site
ROOSEVELT QUARRY

- Operations 6am to 4pm, 5 days a week
- Plant operates nine hours a day
- Constant pumping of water to dewater pit
- Blasting performed almost twice a week
- 25,000 ton blast on average
- 22 employees between the 2 pits
- Grapple on site used to load imbricated rock
- CAT 988 used to load dump trucks
- Produces more than 27 different products
- Main primary crusher averages 800 tons per hour
Quarry Facilities
# Quarry Splits

<table>
<thead>
<tr>
<th>Historical Quarry Production Yields/Needs</th>
<th></th>
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<tbody>
<tr>
<td>Crusher Run</td>
<td>25.00%</td>
</tr>
<tr>
<td>#8, #7</td>
<td>11.00%</td>
</tr>
<tr>
<td>1/4&quot;, #9</td>
<td>11.00%</td>
</tr>
<tr>
<td>Coarse Agg, 57, 6, 67</td>
<td>38.00%</td>
</tr>
<tr>
<td>MFCS, #10</td>
<td>10.00%</td>
</tr>
<tr>
<td>Rip Rap, misc</td>
<td>5.00%</td>
</tr>
<tr>
<td></td>
<td>100.00%</td>
</tr>
</tbody>
</table>
Imbricated Rock

Imbricated = Stackable on both sides
Imbricated Rock

Imbricated = Stackable on both sides
Imbricated Rock

Armour Stone = Normally one flat side
The values above are an approximation of the manufactured material. Due to its large sizing, this material cannot be physically tested in the laboratory.
# Rip Rap Specifications

<table>
<thead>
<tr>
<th>Test Performed</th>
<th>Result</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Bulk Specific Gravity (GSB)</td>
<td>2.676</td>
<td>ASTM C 127</td>
</tr>
<tr>
<td>Bulk Specific Gravity (SSD)</td>
<td>2.702</td>
<td>ASTM C 127</td>
</tr>
<tr>
<td>Apparent Specific Gravity (GSA)</td>
<td>2.746</td>
<td>ASTM C 127</td>
</tr>
<tr>
<td>Absorption</td>
<td>0.94</td>
<td>ASTM C 127</td>
</tr>
<tr>
<td>Los Angeles Abrasion</td>
<td>23.40</td>
<td>ASTM C131</td>
</tr>
<tr>
<td>Alkali Reactivity</td>
<td>0.026</td>
<td>AASHTO C1293</td>
</tr>
<tr>
<td>Sodium Sulfate Soundness</td>
<td>2.54</td>
<td>AASHTO T104</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parent Stone Chemical Prop.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>1.10</td>
</tr>
<tr>
<td>CaCO₃</td>
<td>62.1</td>
</tr>
<tr>
<td>Fe₂O₃</td>
<td>0.49</td>
</tr>
<tr>
<td>K₂O</td>
<td>0.47</td>
</tr>
<tr>
<td>MgCO₃</td>
<td>24.8</td>
</tr>
<tr>
<td>MnO</td>
<td>0.02</td>
</tr>
<tr>
<td>Na₂O</td>
<td>0.04</td>
</tr>
<tr>
<td>SiO₂</td>
<td>4.36</td>
</tr>
<tr>
<td>TiO₂</td>
<td>0.06</td>
</tr>
</tbody>
</table>

The actual stone is deemed to be a relatively hard stone in its nature, and there is no chance for alkali-carbonate reactivity. The stone is of low abrasion, and it is not anticipated that when the stone is placed in the size of pieces that the imbricated comes in, that there will be any significant breakdown due to erosion or dissolution from being in contact with water.
Woodbine, Maryland

Recycled Organic Products
WHO, WHAT, WHERE?

- Level Land Incorporated is engaged in Land Clearing and Organics Recycling

- Providing clearing on stream restorations, right of way projects, commercial projects

- We operate a wood waste recycling facility permitted by MDE to recycle and compost natural wood waste

- We provide transport for all of our products to job sites within 60 miles of our facility
TRADITIONAL RECYCLED ORGANIC PRODUCTS

- Coarse wood grindings
- Wood Chips – screened and un-screened
- Leaf compost
WOOD GRINDINGS

Source Material

First Grindings
WOOD CHIPS

Un-Screened

Screened
LEAF COMPOST

Source Material

Finished Product
ALTERNATIVE RECYCLED PRODUCTS

- Coarse Wood Screenings
- Medium Soil Screenings
- Coarse Recycled Assorted Product
COARSE WOOD SCREENINGS

Source: Chips & Wood Waste

From top deck of screener

3” plus material: large chips, twigs

2-3,000 yds per year
MEDIUM SOIL SCREENINGS

Source: soil & landscape waste

Second deck material

3/4” – 3” gravel, soil, organics

1,500 yds per year
COARSE RECYCLED ASSORTED PRODUCT

Source: Landscape waste & soil screening

Top deck material

3” – 8” rock, roots, other assorted organics, inert material, soil

2,000 yds per year
- Currently we find “homes” for these recycling by-products

- These materials would incorporate easily into many projects

- Use of alternative products would complete the recycle spectrum
Maryland Stream Restoration Association
Jon Straughn
March 27, 2019
Chesapeake Valley Seed, Inc.
Savage, MD

WHOLESALE DISTRIBUTOR OF:

*Seed
- Native, Reclamation, Forage, Forbs/Wildflowers, Cover Crop & Turf
- Just about all seed except for vegetable & row crop (corn, soy beans, etc.)
- Full blending capabilities

*Erosion Control Blankets & Staples

*Fertilizer & Lime

*Hydromulch

chesapeakevalleyseed.com
Availability vs. Commercially Available

Available...???
- Abundance of internet hand collectors. Small quantities and very high priced. Many times they sell w/out the seed test which tell us purity, germ, weed content, etc.

Commercially Available
- Farmers w/ production fields.
- Large quantities
- Wholesale pricing

chesapeakevalleymillseed.com
Planting Equipment
Harvest Time

Key Harvest Factors
- Seed Moisture
- Ability to get into field

Yield Factors
- Moisture at pollination
- Timing of harvest
- Over maturation resulting in seed shatter
Custom Combines
Combining Wild Bergamot
Cleaning Butterfly Milkweed
Seed Testing

Purity Test
Seed Testing

Germination Test
Seed Testing

“AOSA RULES”

The Association of Official Seed Analysts (AOSA) is an organization of member laboratories. Members include official state, federal, and university seed laboratories across the United States and Canada.
Seed Testing

**Seed Label...Why?**
The information shown on a label, is required by either State or Federal laws. It is meant to supply information to consumers to enable them to make wise decisions as to the kind, variety, and quality of seed purchased.

chesapeakevalleyseed.com

Seed Tag
Best Time For Availability is Now March/April

Why?

* Seed is harvested starting in late summer and continues until mid December.

* Seed is cleaned during the winter months.

* After cleaning samples are sent out for testing. Results take about 30 days to get back.

* Species that produced poorly will sold out by May 1st.

chesapeakevalleyseed.com
Monarch Butterfly Chrysalis
Swamp Milkweed

Monarch Butterfly
Wild Bergamot

Bee on Marsh Dense Blazingstar
Jon Straughn
jstraughn@chesapeakevalleyseed.com
Questions?