ROLLINS SOIL ENHANCEMENT, LLC

VPA APPLICATION
WESTMORELAND COUNTY FACILITY
TO PREPARE MATERIALS
FOR DISTRIBUTION AND MARKETING

August 27, 2013
Revised April 14, 2014

Prepared For:

ROLLINS SOIL ENHANCEMENT, LLC
ATTN: RODNEY ROLLINS
10558 KINGS HIGHWAY
KING GEORGE, VIRGINIA 22485

Submitted To:

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Prepared By:

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Phone: 540 423-9706
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VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION
FORM A
ALL APPLICANTS

1. Facility	Name	Rollins Soil Enhancement, LLC.
	County/City	Westmoreland County
	Address	Rappahannock Road
2. Owner	Legal Name	Rollins Soil Enhancement, LLC.
	Mailing Address	10558 Kings Highway King George, VA 22485
	Telephone Number	540 775-2442
	Email address	rollinsenter@aol.com
3. Owner Contact	Name	Rodney Rollins
	Title	President
	Mailing Address	10558 Kings Highway King George, VA 22485
	Telephone Number	540 775-2442
	Email address	rollinsenter@aol.com

4. Existing permits (e.g., VPA, VPDES; VWP, RCRA; UIC); other:

Agency	Permit Type	Permit Number
DEQ	VDHBUR - CROPS, Inc. Westmoreland County - Biosolids	VDHBUR59
DEQ	VPA - CROPS, Inc. - King George County -Biosolids & Storage	VPA00051

5. Nature of Business: The proposed Rollins Soil Enhancement, LLC facility is for for the production/preparation of soil enhancement products.The facility is to be located in Westmoreland County, The BUR permit detailed above is in the name of CROPS, Inc. (Rodney Rollins, President) and is a permit for land application of biosolids in Westmoreland County. The control of CROPS, Inc is under the direction of Rodney Rollins and this permit for biosolids land application is detailed since Mr. Rollins is President. CROPS, Inc also operates in King George County and holds VPA00051 which includes two facilities for the routine storage of biosolids and land application operations

SIC Code(s):	0711		

6. Type of Waste:
(check box as appropriate)

	Proposed	Existing
Animal Waste (complete Form B)	☐	☐
Industrial Waste (complete Form C)	☐	☐
Land Application of Municipal Effluent (complete Form D, Part I)	☐	☐

Land Application of Biosolids/Sewage Sludge (complete Form D, Part II)	☒	☐
Reclamation and/or Distribution of Reclaimed Wastewater (Application Addendum)	☐	☐

7. General Location Map:

   Provide a general location map which clearly identifies the location of the facility

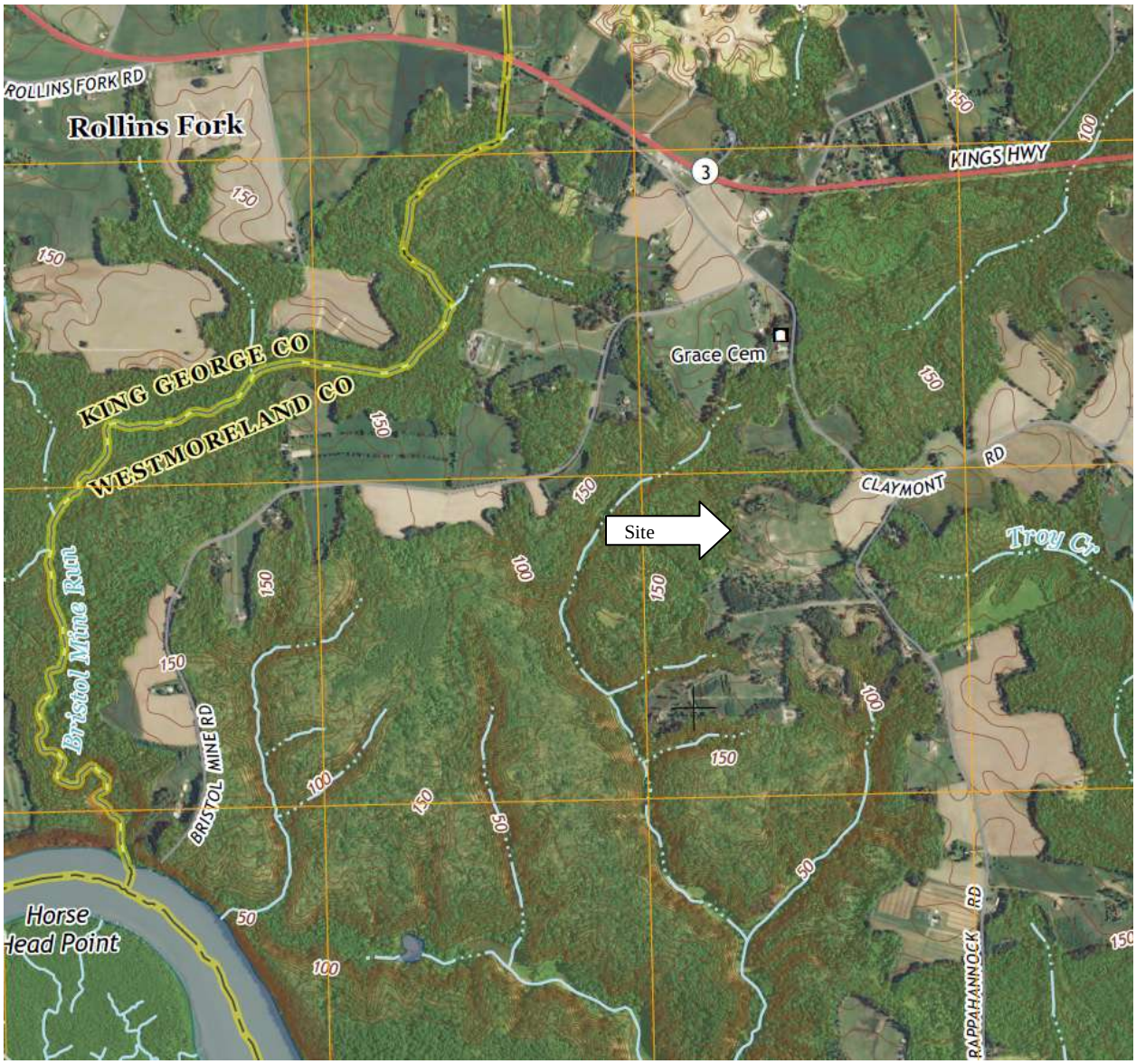
Application is for a facility to prepare materials from biosolids for distribution and marketing.

VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION
FORM A
ALL APPLICANTS

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. I further certify that I am an authorized signatory as specified in the VPA Permit Regulation (9VAC25-32).

Signature:	Rodney D Rollins	Date: 8-23-13
Printed Name:	RODNEY D. Rollins	
Title:	PRESIDENT	

LOCATION MAP
ROLLINS SOIL ENHANCEMENT FACILITY
RAPPAHANNOCK ROAD, WESTMORELAND COUNTY
TM 8 PARCEL 14



APPLICATION FOR A VPA PERMIT FOR A FACILITY TO PREPARE MATERIALS FOR DISTRIBUTION AND MARKETING

Type of System or Works: ☒ NEW ☐ UPGRADE ☐ MODIFICATIONS

Owner:

Name: Rollins Soil Enhancement, LLC. ATTN: Rodney D. Rollins

Street or Mailing Address: 10558 Kings Highway

City: King George State VA Zip Code: 22485

Phone No.: (540) 775-2442
Area Code

Authorized Representative:

Name: Rodney D. Rollins

Street or Mailing Address:10558 Kings Highway

City: King George State: VA Zip Code: 22485

Phone No.: (540) 775-2442
Area Code

Consulting Engineer:

Name of Firm: Culpeper Engineering, P.C.

Project Engineer: : Rebecca S. Tolliver

Street or Mailing Address: 3251 Germanna Highway, Locust Grove, VA 22508

Phone No.: (540) 423-9706
Area Code

PROJECT DESCRIPTION:

Rollins Soil Enhancement, Inc. is proposing to establish a facility for the preparation of agricultural/horticultural products. The facility will produce agricultural/horticultural products including: mulch, blended mulch, topsoil, compost, soil amendments, organic based fertilizer material and horticultural potting mixes. Products are to be prepared using various feedstocks which may include: wood chips (chipped onsite or imported), bark, shredded wood, herbivorous manures, class A and Class B dewatered biosolids, agricultural residues, fish-farm waste, and other agricultural products.

Additives/materials to enhance a finished product for specialty markets will be utilized during product blending to incorporate materials to address specific requests. Anticipated materials include, but are not limited to, the addition of sand/perlite/vermiculite/lime/micro & macro nutrients/gypsum/coal combustion byproduct gypsum/wood ash. Additives may be incorporated, upon request to produce specialty blended soil amendment/ horticultural planting materials.

The materials processing operations will include grinding/shredding; screening; drying and blending operations; composting; windrowing of blended materials other than compost at the facility. Feedstocks for preparation of the mulch; blended mulch; topsoil; compost; soil amendment; organic based fertilizer material and or horticultural planting material will be product specific. Materials to be utilized at the facility include: brush/limbs/leaves (yard waste materials) received and shredded onsite, shredded wood products delivered from offsite, herbivorous manures, litter and/or litter manure mixes, fish-farm waste material, class A and class B dewatered biosolids as well as materials which may be incorporated into products to address specialty blends produced upon request.

Materials are currently planned to be marketed in bulk. Should markets for bagged or baled products be developed; facilities for bagging/baling product will be installed.

The proposed site, located in Westmoreland County, is owned by Rodney & Mildred Rollins. The property is identified as “Residue of Porteus VI”. In addition to the field which is to include the Rollins Soil Amendment Operations, the property includes a nursery. Materials produced may be used on existing nursery stock and/or future plantings at this location.

The property where the facility is to be located, identified as “Residue of Porteus VI” is owned by Mildred and Rodney Rollins. The property includes 70.38 +/- acres (TM 8 Parcel 14). The property includes existing nursery stock. Products from the Soil Enhancement Facility may be utilized on the property.

FEEDSTOCK MATERIALS

BIOSOLIDS SOURCES

At this time, it is anticipated that materials meeting Class A requirements may be received as feedstock. This proposed facility does not have an existing contractural arrangement with a Class A generator; however, the site is proposing to establish the facility for receipt of verified (DEQ) Class A products. One potential source is Alexandria Renew Enterprises Class A biosolids (ARenew). ARenew located at 1500 Eisenhower Ave., Alexandria, VA, generates +/- 22,000 WT/Yr or ~ 85 WT/Week Day (M-F).

In addition to class A material, class B material will be managed to obtain class A status. At this time, material generated at the Dale Service Authority Section 1 Plant, located at 15051 Birchdale Road, Dale City, VA and the Dale Service Authority Section 8 Plant, located at 14420 Delaney Road, Dale City, VA, are available sources. These facilities each generate +/- 4,700 WT/Yr. These biosolids are currently managed by CROPS, Inc. (Rodney Rollins, President). CROPS may elect to direct material from these facilities to the Soil Enhancement facility or continue to manage these materials under current, permitted land application operations.

Once the Rollins Soil Enhancement Facility is operational, marketing of services will be active. Additional biosolids sources may be accepted upon verification of quality/characterization. It is proposed that construction of buildings to be utilized for preparation of products at the Rollins Soil Enhancement facility will be phased. Phasing development is beneficial to managing capital expenditure with demand for services to be provided. A CTO will be obtained for each phase of construction. This application details the overall project which details 10 buildings. Phase I will include capacity to receive a minimum of 100 WT/D of dewatered biosolids. Three buildings are to comprise Phase 1.

BIOSOLIDS QUALITY

It is anticipated that the facility will accept Class A materials approved by DEQ as Exceptional Quality Biosolids. One identified potential EQ Biosolids source, ARenew, utilizes a bio-pasturization system. The system can be operated under two pathogen treatment options, both employ thermal treatment for pathogen control and are followed by anaerobic digestion to achieve vector attraction reduction requirements. The ARenew treatment process produces Class A pathogen control biosolids that meet state and federal standards. The trace elements in the biosolids are below the EPA Table 3 and Table 4 of 9VAC25-32-356 pollutant concentrations. ARenew biosolids are characterized as exceptional quality (EQ) material. It is anticipated that the facility will accept Class A materials approved by DEQ in the future.

Class B biosolids may be accepted for introduction to PFRP processes at the site. Materials accepted shall be limited to PC material (meeting EPA Table 3 pollutant concentrations & Table 4 of 9VAC25-32-356). Accepted materials shall meet class B pathogen and vector attraction reduction requirements prior to acceptance. The Dale Service Section 1 and Section 8 facilities are sources currently identified. Both are aerobically digested materials that monitor quarterly for fecal coliform concentration to verify Class B pathogen requirements. Both are currently verifying vector attraction reduction through quarterly monitoring which verifies 38% volatile solids reduction. Both facilities are monitored quarterly for trace metals and comply with the pollutant concentrations detailed in EPA Table 3 and Table 4 of 9VAC25-32-356.

YARD WASTES

Yard waste (brush/limbs/leaves) will be accepted as feedstock material and may be incorporated in the blending/composting/processing operations at the site. Received materials will be reduced in size using mechanical equipment (Morbark or equal tub grinder; Morbark Beever or equal chipper) and will be screened using a Trommel screen. Screened materials may be marketed as mulch or incorporated into blending operations. Materials (shavings/sawdust/etc.) that have beens shreeded/ground offsite may be received. Materials will be assessed prior to further processing/incorporation at the facility. Materials received may be ground/chipped or screened as necessary prior to introduction into blending/composting operations.

AGRICULTURAL WASTES

Agricultural wastes will be received and processed as required for incorporation into blending, composting operations. Materials may be dried prior to use as necessary. Materials will be managed under roof.

PROPOSED BUILDING FACILITIES

Rollins Soil Enhancement, Inc. is proposing to establish a facility for the preparation of agricultural/horticultural products. The operation is being designed for the recycling/reuse materials including: yard wastes, agricultural wastes, fish farm wastes and Class A and Class B biosolids.

A layout of proposed buildings is attached. An electronic copy of the final site plan has been provided to the Department. The construction of structures will be phased. The site plan details an office and a total of ten structures which may be constructed based on demand for services and market development for products. An overview of proposed buildings and operations is presented.

BUILDINGS

The proposed structures are 140’ X 65’ ClearSpan™ HD Buildings with a center height of 25’4-1/16”. The ClearSpan structures are described below:

ClearSpan™ HD Freestanding Buildings - 65'W

Introducing our line of heavy-duty freestanding and pony wall buildings. ClearSpan ™ HD Buildings are designed, manufactured and constructed with the highest structural integrity.

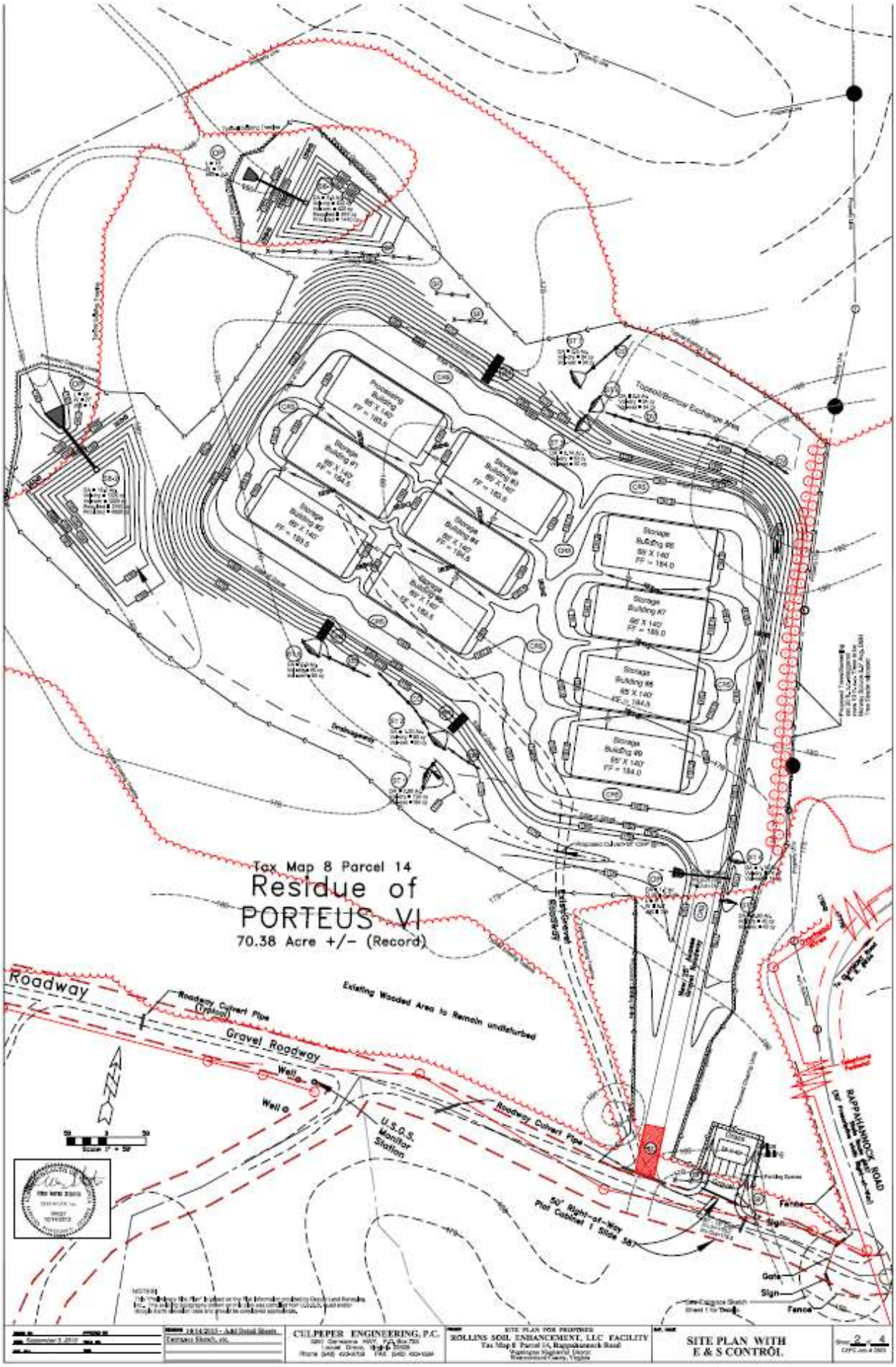
- High clearance and wide-open space of these structures make them ideal for virtually any application.
- 12.5 oz., 24 mil rip-stop polyethylene covers are UV resistant and available in your choice of four colors.
- Durable frames are manufactured from our American-made, triple-galvanized structural steel, which is resistant to corrosive environments and long lasting.
- 65'W buildings are 25'4-1/16"H.
- Truss spacing is 20' on center.
- Available in freestanding style.
- Industry-leading 15 year warranty on frame and cover.
- Custom covers, end panels and accessories are available, all sold separately.

The structures are to be provided with a concrete floor, with thickened footings, as a working surface. Interior concrete walls (~4’ height) are to be installed on the slab (sides and rear based on building use). Cover attachments are to be located outside the barrier walls. Building floors will be prepared to allow management of any liquids within the structure. Based on the proposed use (processing/curing/blending) the installed concrete floor and barrier wall system will allow retention of managed materials in the facility. The installed cover system will limit the exposure of materials to precipitation. Buildings that may be installed primarily as cover, or buildings which may be used for temporary storage of products for incorporation into final product and holding/storage areas for finished materials and or areas used primarily for equipment storage may not require installation of barrier walls. Concrete floors will be provided in all buildings. Building installation will be phased (based on demand); potential building locations have been identified. All buildings shown may not be required. Prior to installation of buildings, areas identified may be used for staging/receipt of yard wastes. CTC/CTO requests will be provided for each phase. Phase 1 is anticipated to include three buildings. A CTC will be provided for each phase and prior to initiation of operations a CTO request will be submitted.

Barrier walls and floors are to be similar to the floor/wall system installed by Mr. Rollins at the CROPS, Inc. storage facility in King George. A picture of the floor/wall system is presented. A CTC will be submitted for the Department’s approval of final building plans. As noted, construction of buildings is to be phased and a CTO request will be submitted prior to initiation of operations.

Picture detailing proposed floor and wall system. The structure in the below picture is not the cover system planned for the Rollins Soil Enhancement structures. The cover system is to be Clear Span as described above.

A site location map detailing the location of structures is presented below. Final site plan approval from Westmoreland County has been obtained. A copy of the approved site plan has been forwarded to DEQ.


Tax Map 8 Parcel 14
Residue of
PORTEUS VI
70.38 Acre +/- (Record)
Existing Wooded Area to Remain undisturbed
Roadway
Roadway Culvert Pipe (Typical)
Gravel Roadway
Well
U.S.G.S. Monitor Station
Roadway Culvert Pipe
50' Right-of-Way Plat Cabinet 1 Slide 387
Fence
Sign
Gate
Sign
Fence
RAPPAHANNOCK ROAD
Processing Building 85 X 140 FF = 185.5
Storage Building #1 85' X 140' FF = 184.5
Storage Building #2 85' X 140' FF = 185.5
Storage Building #3 85' X 140' FF = 185.5
Storage Building #4 85' X 140' FF = 184.5
Storage Building #5 85' X 140' FF = 184.0
Storage Building #7 85' X 140' FF = 185.0
Storage Building #8 85' X 140' FF = 184.5
Storage Building #9 85' X 140' FF = 184.0
Scale 1" = 50'
CULPEPER ENGINEERING, P.C.
ROLLINS SOIL ENHANCEMENT, LLC FACILITY
SITE PLAN WITH
E & S CONTROL
2 of 4

Structures are proposed for the following processes:

- Receiving area for agricultural wastes; materials which include manures;
- Receiving area for class A and class B biosolids;
- Blending/processing operations;
- Composting;
- Drying operations;
- Management/storage of specialty additives;
- Curing/aging of blended product as necessary.

Processes/operations may be co-located in a structure due to the size/footprint (140' X 65") of the proposed structures. The identified footprint of each proposed structure is the maximum size (9100 square feet) that will be installed. Potential building sites have been identified. Phasing is anticipated and the initial phase is anticipated to include a maximum of three buildings. The Phase 1 building plan CTC application will be submitted upon VPA issuance. CTC/CTO requests will be made for each phase as the facility is developed. Phasing is to be based on demand.

MANAGEMENT OPERATIONS

Biosolids materials delivered to the facility will be scheduled for "processing" within 48 hours of offloading in a structure. All processes and procedures shall be conducted in accordance with the issued VPA Permit. It is anticipated that processing will include blending/drying and or preparation of windrows for composting/blending/curing. In addition to the management of biosolids, the facility will receive agricultural wastes and "yard waste" (brush/limbs/leaves/wood products). Agricultural wastes containing manures will be placed under roof prior to processing. Yard wastes may be stockpiled for grinding/shredding and screening operations as required prior to use.

The proposed facility for the production of Rollins Soil Enhancement products will receive various feedstocks to be utilized in preparation of products which may be distributed/sold in bulk or bag (or other container). Feedstocks will be managed to minimize their exposure to precipitation.

Feedstocks will be managed as follows:

Raw wood products (brush/limbs/leaves) will be received in an area designated for receipt. Materials received will be shredded onsite. Material shredded offsite may be accepted. Onsite shredding operations will be scheduled based on the volume of material received. Shredded wood product will be screened to produce various grades/sizes of materials. Materials shredded may be utilized for blending with other stock to produce additional products or distributed/sold. Shredded/screened product will be stored onsite prior to distribution/sale/use. A tub grinder/and shredder will be utilized for grinding and shredding operations. Grinding/shredding equipment utilized will be selected based on the size and or volume of material being managed.

Wood products as received (prior to grinding/chipping) will be managed in a designated receiving area convenient to the new access road. The receiving area may be in the location of a proposed building during initial (Phase 1) operation. Shredded materials will be screened, as required, for further use/management and may be stored outside prior to introduction into material processing operations (blending/composting). Shredded/screened materials may also be cured for sale as mulch.

Manures and litter/manure mixtures received will be placed under roof. Received materials may be subjected to drying prior to use/blending. Materials may be placed and turned to improve uniformity/properties prior to use in blending and or composting operations. The facility may utilize a rotary drier to reduce the solids content of received materials/feedstock (including manure) prior to blending operations. Product derived from blending manures and manure/litter mixtures may include: topsoil, compost, soil amendments and horticultural potting blends. Other agricultural residues may be utilized as feedstock. Such residues may be processed (ground/screened) prior to use in blending operations.

Class A and class B biosolids will be accepted as feedstock. Biosolids received will be placed under roof. Received biosolids may be subjected to drying prior to use/blending. The facility may utilize a rotary drier to reduce the moisture content of received materials/feedstock. Biosolids received should be scheduled for processing operations within 48 hours of offloading. Products derived from blending biosolids may include: topsoil, compost, soil amendments and horticultural potting blends. Blended material, to be sold or given away in a bag or other container or in bulk. Materials derived from class A and class B biosolids, will be managed under cover prior to being transported offsite. Covering will limit exposure to precipitation and may be considered beneficial to product quality control.

Supplements and specialty materials to be incorporated into custom mixes are to be managed under roof.

Blending operations are to be conducted under roof. Managing blending operations in a covered location limits exposure to precipitation and affords control of product moisture content. Blended product will be retained under roof during any required curing, turning operations and during preparation of specialty products requiring the addition of specialty additives (preparation of custom products). Products may be screened following blending operations to prepare finished product with desired textural properties. The facility may utilize an enclosed, four auger agricultural mixer for blending materials. Blending may also be accomplished utilizing a loader to mix materials. A rotary dryer will be incorporated in the process to facilitate dewatering of feedstock materials.

Bagging/baling operations are an option that may be incorporated in the operation in addition to bulk distribution & marketing, based on marketing demands/requirements.

The proposed soil enhancement facility is for the preparation of agricultural/horticultural products. The facility is not a routine biosolids storage facility. Blended soil enhancement product may be retained/stored/cured (storage buildings) during product conditioning (turning) and prior to marketing/distribution. Material management shall be in accordance with the issued VPA Permit.

ROLLINS SOIL ENHANCEMENT OPERATIONS PLAN

The goal of the soil enhancement facility is to produce and market agricultural/horticultural materials. Emphasis is placed on utilizing options to produce agricultural/horticultural products based on the principal of reuse. The facility will accept yard waste or "wood products" including brush/limbs/leaves which will be shredded and screened. These materials may be recycled directly as mulch and/or serve as a source of feedstock for the blending operations to produce additional soil amendment products. Materials received will be recycled or reused.

The facility proposes to prepare soil amendment products which incorporate biosolids as a nitrogen source. The following regulatory information is provided regarding products which will incorporate biosolids as a feedstock.

Distribution or marketing as approved by the Department of Environmental Quality allows for the sale or distribution of exceptional quality biosolids or mixtures of exceptional quality biosolids with other materials such that the mixture achieves the Class A pathogen control, vector attraction reduction and pollutant control standards. Use of such mixtures shall be evaluated through proper testing designed to assess the suitability of the material for such use. Exceptional quality biosolids marketed as fertilizers or soil conditioners must meet the following conditions:

1. The biosolids product must be registered with the Virginia Department of Agriculture and Consumer Services in accordance with the provisions of § 3.2-3607 of the Code of Virginia.

2. The biosolids product must be processed to meet Class A pathogen requirements as specified in 9VAC25-32-675 A.

3. The biosolids product must meet one of the vector attraction reduction requirements as specified in 9VAC25-32-685 B 1 through B 8.

4. The biosolids product must meet the ceiling concentrations specified in 9VAC25-32-356 - Table 2.

5. The biosolids product must meet the pollutant concentrations specified in 9VAC25-32-356 - Table 4.

6. Additional parameters may be required for screening purposes such as organic chemicals, aluminum (mg/kg), water soluble boron (mg/kg), calcium (mg/kg), chlorides (mg/l), manganese (mg/kg), sulfur (mg/kg), and those pollutants for which removal credits are granted.

Products which are produced utilizing biosolids at the facility shall be monitored to verify Class A pathogen requirements as specified in 9VAC25-32-675 A is achieved. Material may be verified as meeting class A pathogen requirements prior to receipt at the facility or Class B material may be received and managed in a process to further reduce pathogens at the facility. Procedures to further reduce pathogens that may be utilized at the facility include:

1. Composting. Using either the within-vessel composting method or the static aerated pile composting method, the temperature of the sewage sludge is maintained at 55°C or higher for three days. Using the windrow composting method, the temperature of the sewage sludge is maintained at 55°C or higher for 15 days or longer. During the period when the compost is maintained at 55°C or higher, there shall be a minimum of five turnings of the windrow.

2. Heat drying. Sewage sludge is dried by direct or indirect contact with hot gases to reduce the moisture content of the sewage sludge to 10.0% or lower. Either the temperature of the sewage sludge particles exceeds 80°C or the wet bulb temperature of the gas in contact with the sewage sludge as the sewage sludge leaves the dryer exceeds 80°C.

Additional measures may be advanced in the future. Any processes utilized will be in accordance with requirements specified and/or approved by the Department of Environmental Quality.

PFRP PROCEDURES PROPOSED

HEAT DRYING

Heat drying is to be a PFRP option. Materials (specifically dewatered Class B biosolids) may be introduced to a rotary drier, fueled by an EPA Clean Burn heater which utilizes waste oil as the fuel source. The rotary drier is for moisture reduction to achieve a final moisture content in the finished biosolids exiting the dryer of 10% or lower; the temperature of the biosolids is to be at minimum 176 degrees F (80 degrees C) as it leaves the dryer. The dryer to be installed is a proprietary unit. Verification testing shall be provided to assure process control. Material dried in the unit will be verified as meeting Class A requirements. Dried Class A material may be distributed or may be utilized in blended product/soil amendments prepared or as a component of specialty mixes prepared upon request.

Manures received may also be introduced to the dryer prior to use in preparing products for distribution and marketing as organic based fertilizers/soil conditioners/horticultural potting mixtures.

WINDROW COMPOSTING

Composting is a process which relies on aerobic biological decomposition of organic material. The process of composting increases the decomposition rate. It is anticipated that ground "yard waste" including brush/limbs/leaves that have been reduced in size using a tub grinder or shredder will be mixed with additional organic materials, including dewatered biosolids (may use Class B material as a source). When organic materials are composted, the Carbon:Nitrogen(C:N) ratio must be managed. If the mixture has too little Carbon present, C:N below 20:1, Nitrogen may be released as ammonia gas resulting in odor. If too much carbon is present. C:N > 40:1, the process will slow down. Managing the C:N ratio at a target value of 30:1 is recommended. Optimal mixes (ratio of biosolids to carbonaceous material) will be determined to manage the C:N of the mixture. The temperature of the pile will rise more rapidly as the N content of the pile mixture increases. The ratio may be adjusted based on monitoring. Use of a finely shredded carbon source (fine woodchips or sawdust) may allow a higher C:N mixture since the carbon source will be easily accessed by the microbes decomposing the pile. Field monitoring and experience will be utilized to determine the ratio depending on the composition of the material used. The C:N ratio will decrease as decomposition proceeds.

Composting is impacted by the source material size also. Small materials provide more exposed area; however, very small particles may tend to compact and restrict air flow. The bulking (carbon) material should be sized to assure aerobic conditions are maintained. Turning/mixing during the process will also tend to reduce the size of feedstock. Materials which are screened may be selectively used in compost operations. Preference may be to use materials in the 1/8" to 2" range for pile preparation. Small particles from grinding and screening may be utilized in other onsite blending operations.

Biosolds introduced to the compost operation help to balance both the moisture and nitrogen required for the composting process. Biosolids are used to supply required moisture and nitrogen for microbial degredation during composting. As noted, controlling the C:N ratio and providing adequate moisture for decomposition are necessary for composting to be properly managed.

Organic waste is formed into rows of long piles called "windrows" and aerated by turning the pile periodically(at minimum 5 times per 15 days) by either manual (loader) or mechanical means (specialty equipment). The pile height, should be between 4 and 8 feet to allow for a pile large enough to generate

sufficient heat and maintain temperature at a minimum of 55^0 C (131 degrees F), yet small enough to allow oxygen to flow to the windrow's core. The pile width should be between 14 and 16 feet.

Windrows shall be placed under roof to help control moisture content. Leachate is liquid released during the composting process. Managing the material in a building affords containment of any released materials which will be managed. Floor (poured concrete) design will provide measures to allow accumulated water to be removed by a pump truck and managed as septage. Routine turning of formed piles affords temperature and moisture control. Free water in the building will be removed (sump/sloped design to allow collection & removal).

Curing of the product allows the compost to mature and helps assure the most active phase of decomposition is complete. Curing may be considered complete when the material internal temperature approaches ambient temperature. It is desired to have a final material that is benefical to plants. Screening of the final product may enhance product character.

Production of finished soil amendments may incorporate both Class A biosolids and compost produced with biosolids as a feedstock. Any biosolids product shall meet the Class A requirements prior to distribution and marketing.

BLENDED PRODUCTS

Blended products for soil amendment and/or preparation of a fabricated topsoil may be prepared using Class A (biosolids) material. A variety of blends may be prepared. Products will be developed based on demand. Class A material (approved for distribution and marleting) or blended Class A material may be added to finished compost (meeting class A criteria) with the addition of a structural component such as sand. The biosolids and compost provide a carbon source and a nitrogen source with the compost providing a desireable dark appearance. The sand in the mixture may enhance the product's structure. Additional specialty blends/ horticultural products incorporating optional structural/nutrient/ micronutrient components will be developed.

Blended product, produced as a soil amendment using biosolids meeting class A criteria, may be prepared using screened mulch. The product is proposed for use to: improve soil structure and porosity; reduce bulk density of heavy soils and/or improve moisture retention of light soils. A blend, composed of a 50:50 mixture by volume of screened mulch and class A material (Class A/Exceptional Quality biosolids) is anticipated. The product (50:50 blend of Class A material and screened mulch) will be mixed and windrowed prior to distribution. The blending operation is to enhance the aesthetic quality of the final product. Material will be blended (mixer or using a loader) and formed into windrows in a building. The material will be aerated through turning to expedite drying and control temperature. The product moisture shall be routinely checked until the finished product achieves a moisture content between 40-50% (for bulk use). If material is to be bagged in the future, the desired moisture of the bagged amendment is 30-40%. Material will be subject to routine turning based on temperature. The internal temperature should be managed so that it does not regularly exceed 145 degrees F (~63 degrees C). Turning will reduce internal temperature. The specific volume of the feedstocks for the blended mixture may be adjusted based on C:N ratio and actual moisture content. The target C:N ratio will range from 12:1 to 18:1. Product processing completion and final product quality is assessed by routine facility O & M monitoring.

All products shall be assessed for offensive odor prior to any distribution. Material that exhibits an ammonia smell will continue to be turned/cured to finish products prior to offsite distribution.

QUALITY ASSURANCE AND QUALITY CONTROL

Blended products which include biosolids shall be verified, through routine testing, to assure compliance with the Regulations' requirements for Class A products which may be distributed and marketed. Compost and soil amendment products shall be registered with VDACS. Products registered with VDACS shall be analyzed to verify product composition and to verify any provided product data. Mulch products which do not include biosolids are not subject to monitoring/testing. Products not regulated by DEQ or VDACS may be marketed and QA/QC shall be provided to assure marketability.

Records of quantities of materials received will be maintained. Records of operations/production and distribution are subject to reporting requirements. A manifest system will be utilized for recording volumes of materials received. A manifest system will be used for recordation of volumes of materials marketed/distributed.Reports will be prepared for submission to VDEQ/VDACS as required.

VDACS Requirements shall be followed.

§ 3.2-3606. Distributor required to obtain license; fee.

A. It is unlawful for any person whose name appears upon the label of any regulated product as distributor to distribute a regulated product without first obtaining a license to distribute the regulated product in the Commonwealth. The person who distributes the regulated product shall file an application with the Commissioner on a form furnished by the Commissioner, and pay to the Commissioner a license fee of $50.

B. Any person who distributes a regulated product shall obtain a license prior to distributing any regulated product for each manufacturing location that he operates and that distributes any regulated product within the Commonwealth. The person who distributes a regulated product shall apply for a license on a form furnished by the Commissioner, and pay to the Commissioner a license fee of $50 for each manufacturing location that distributes in the Commonwealth.

C. The license application shall include the name and address of the applicant and the name and address of the applicant's distribution points in the Commonwealth.

D. The licensee shall place the name and address shown on the license on:

1. The labels of any regulated product, and pertinent invoices thereof, distributed by the licensee in the Commonwealth; and

2. All storage facilities for any regulated product distributed by the licensee in the Commonwealth.

E. The licensee shall inform the Commissioner in writing of additional distribution points established during the period of the license.

F. Any new applicant who fails to obtain a license within 15 working days of notification of the requirement to obtain a license, or any licensee who fails to comply with the license renewal requirements, shall pay a $35 late fee to the Commissioner in addition to the license fee.

A. In addition to licensing requirements:

1. Any person who is the guarantor of and who distributes in the Commonwealth any specialty fertilizer shall: (i) apply for registration for such specialty fertilizer with the Commissioner on forms furnished by the Commissioner; (ii) pay to the Commissioner by July 1 of each registration year a registration fee of $50 for each grade under a given brand prior to distributing the fertilizer in the Commonwealth; and (iii) provide labels for each grade under a given brand with the application.

2. Any person who is the guarantor and who distributes in the Commonwealth a soil amendment or horticultural growing medium shall: (i) apply for registration for such soil amendment or horticultural growing medium with the Commissioner on forms furnished by the Commissioner; (ii) pay to the Commissioner by July 1 of each registration year a registration fee of $100 for each product name or brand of soil amendment or horticultural growing medium prior to distributing the product in the Commonwealth; and (iii) provide labels for each product name or brand with the application.

B. The Commissioner shall furnish a certificate of registration to the applicant after approval of the registration.

C. Any person applying for registration of a specialty fertilizer, soil amendment or horticultural growing medium shall include with the application the following information:

1. For specialty fertilizer, the grade under a given brand; for soil amendments or horticultural growing media, the product name or brand;

2. The guaranteed analysis;

3. The name and address of the registrant; and

4. The quantity statement.

D. The Commissioner may require verification of any labeling claims for and any composition of any regulated product.

E. Custom-media and horticultural growing media planted with live plant material are exempt from labeling and registration requirements and inspection fees.

F. Beginning December 31, 2013, no lawn maintenance fertilizer containing more than zero percent phosphorus or other compounds containing phosphorus, such as phosphate, shall be registered with the Commissioner or offered for sale, distribution, or use in the Commonwealth. This prohibition does not include lawn fertilizer, manipulated manure, yard waste compost, products derived from sewage sludge, soils containing fertilizer, fertilizer products intended primarily for gardening, tree, shrub, and indoor plant application, including nurseries, or reclaimed water. The provisions of this section shall not restrict the continued sale by retailers of any prohibited fertilizer from any existing inventories in stock on December 31, 2013.

G. Beginning July 1, 2014, only lawn maintenance fertilizer that, when applied in accordance with its directions for use, results in the application of nitrogen at rates that are consistent with the nitrogen application rates recommended for turfgrass in the Virginia Nutrient Management Standards and Criteria shall be registered with the Commissioner or offered for sale, distribution, or use in the Commonwealth. The provisions of this subsection shall not restrict the continued sale by retailers of any prohibited fertilizer from existing inventories in stock on July 1, 2014.

H. The Commissioner shall give the guarantor or distributor of any unregistered regulated product in commerce in the Commonwealth a grace period of 15 working days from issuance of notification within which to register the regulated product. Any person required to register any regulated product who fails to register the regulated product within the grace period or fails to comply with registration renewal

requirements shall pay to the Commissioner a $50 late fee in addition to the registration fee. The Commissioner may issue a stop sale, use, removal or seizure order upon any regulated product until the registration is issued.

§ 3.2-3611. Labeling.

A. The distributor or guarantor of any regulated product distributed in the Commonwealth shall affix a label to the container or provide an invoice at the time of delivery for a bulk regulated product that states in clear, legible and conspicuous form, in the English language, the following information:

1. The quantity statement;

2. The grade under a given brand. The grade shall not be required when no primary nutrients are claimed;

3. The guaranteed analysis, which shall:

a. For fertilizers, conform to the requirements adopted by AAPFCO in its Official Publication in the Rules and Regulations-Fertilizer section of the Officially Adopted Documents, as amended, with the percentage of each plant nutrient stated as follows:

(1) Total Nitrogen (N) ..... %

Available Phosphate (P205) ..... %

Soluble Potash (K20) ..... %

(2) For unacidulated mineral phosphate materials and basic slag, bone, tankage, and other organic phosphate materials, the available phosphate (P205), or the degree of fineness, or both, may also be guaranteed;

(3) Guarantees for plant nutrients other than nitrogen (N), phosphate (P205), and potash (K20) shall be expressed in the form of the element. A statement of the sources of nutrients including oxides, salt, and chelates, may be required on the application for registration of specialty fertilizers, and may be included as a parenthetical statement on the label. Degree of acidity or alkalinity (pH), beneficial substances, or compounds determinable by laboratory methods also may be guaranteed by permission of the Commissioner and with the advice of the Director of the Virginia Agricultural Experiment Station. When any degree of acidity or alkalinity (pH), beneficial substances, or compounds are guaranteed, they shall be subject to inspection and analysis in accord with the methods and regulations prescribed by the Board;

b. For soil amendments, conform to the requirements adopted by AAPFCO in its Official Publication in the Labeling section of the Uniform Soil Amendment Bill of the Officially Adopted Documents, as amended;

c. For horticultural growing media, include a list of ingredients and other guarantees as required by regulation and a statement of added fertilizers, if any;

d. When compost derived from sewage sludge, hazardous materials, unrendered animals or poultry or their parts, or other source material specified in regulations established by the Board is used as an ingredient, identify the source material of the compost;

e. When an industrial co-product is used as an ingredient, identify the source material and percentage or other acceptable unit; and

f. Include a list of such other ingredients and guarantees as may be required by the Board through regulation.

4. The name and address of the registrant or licensee; and

5. Directions for use and warning statements in accordance with the standards adopted by AAPFCO in its Officially Adopted Documents of the Official Publication, as amended.

B. A commercial fertilizer that is formulated according to specifications provided by a consumer prior to mixing shall be labeled to show: (i) the quantity statement; (ii) the guaranteed analysis; and (iii) the name and address of the distributor or the licensee.

C. [Repealed.]

D. Beginning December 31, 2013, lawn fertilizer and lawn maintenance fertilizer shall be labeled as follows:

"DO NOT APPLY NEAR WATER, STORM DRAINS, OR DRAINAGE DITCHES. DO NOT APPLY IF HEAVY RAIN IS EXPECTED. APPLY THIS PRODUCT ONLY TO YOUR LAWN/GARDEN, AND SWEEP ANY PRODUCT THAT LANDS ON THE DRIVEWAY, SIDEWALK, OR STREET, BACK ONTO YOUR LAWN/GARDEN."

In addition to VDACS requirements, final product shall routinely be monitored to verify conformance with DEQ requirements related to products produced and/or incorporating biosolids. Monitoring requirements as specified in the issued VPA permit shall be followed and reports detailing pollutant content; pathogen concentration and any vector attraction reduction requirements submitted per the specified frequency.

QUANTITY RECORDS – MANIFEST SYSTEM

A manifest system shall be utilized to log quantities of materials received at the facility. Weight tickets shall be retained when appropriate (biosolids/finished product) and any materials not weighed shall be logged based on volume received (yard waste/agricultural waste & maure/imported wood product etc.). Any required reporting of materials received (County/State) shall be reported in tonnage or volume as required.

The manifest system records shall note the source and nature of materials received. All records will be maintained for 10 years. The reports of operations prepared for the Departments, based upon the record management system, will be submitted monthly (or as specified in issued permits/licenses to the Departments. Any required County reporting shall be at the frequency specified by Westmoreland County. All reports will be retained for a minimum of 10 years.

Products and product volumes shall routinely be monitored to verify compliance with Department of Environmental Quality and VDACS licenses. Monitoring and reporting will be provided to the appropriate Departments. Quality monitoring shall be maintained with quantity records and used to verify product quality with the issued permit and registrations made with VDACS. An information sheet shall be provided to recipients of regulated products. All distributed volumes shall be logged in the manifest system noting the volume distributed and the recipient. No labeling/information is proposed for bulk distribution of mulch. Distributed mulch volumes shall be logged and reported to the County if required.

PRODUCTION QA/QC

Blended products and compost placed in windrows will be monitored during processing. Suggested O & M monitoring includes:

- Monitoring windrow internal temperature – windrows should be managed such that internal temperatures do not regularly exceed 145 degrees F. If temperatures are near or above 145 F the facility manager should initiate turning to moderate internal temperature;
- C:N ratio of mixtures shall be checked for process control by the facility manager to verify target values of blended mixtures are prepared at targeted values;
- Moisture content of processing materials shall be utilized as a control measure by the facility manager for product operation and management control;
- Bulk density testing may be conducted on feedstock to assure consistent blending ratios are achieved;
- Odor evaluation of processing amendments shall be checked routinely by the facility manager. Odorous material shall be retained in process for additional conditioning/curing. Odorous materials shall not be distributed.

All monitoring detailed in the issued permit shall be conducted and reported to the Department in accordance with the specified monitoring frequency. Monitoring for product quality assurance/quality control will be ongoing.

DISTRIBUTION AND LABELING

Any material subject to VDACS and/ or DEQ labeling or product information sheet shall be distributed with the required material use/loading instructions. Availability and the source of product nutrients will be clearly displayed on the information sheet/label with recommended rates of application. Product information should include directions for application of products to minimize any impacts to surface waters as well as suggested amounts to be used when utilized in a surface application or when incorporated into the soil profile.

Beginning December 31, 2013, lawn fertilizer and lawn maintenance fertilizer shall be labeled as follows:

"DO NOT APPLY NEAR WATER, STORM DRAINS, OR DRAINAGE DITCHES. DO NOT APPLY IF HEAVY RAIN IS EXPECTED. APPLY THIS PRODUCT ONLY TO YOUR LAWN/GARDEN, AND SWEEP ANY PRODUCT THAT LANDS ON THE DRIVEWAY, SIDEWALK, OR STREET, BACK ONTO YOUR LAWN/GARDEN."

Product labeling shall identify the source of products as specified in VDACS and DEQ requirements. Handouts/labeling shall be approved prior to initiation of Distribution for compliance with State requirements.

ENVIRONMENTAL AND PUBLIC PROTECTION

Environmental concerns related to distributed products are managed by routine product and process control monitoring to be performed. Directions for product use and identification of the source of materials included in distributed products will be provided with distributed materials. Should bagging of products be included in the future, the labeling will provide identification of the source of materials included in the product and required control measures including product quality information and application rates to minimize environmental impacts. Products including biosolids to be distributed shall conform to requirements established for the distribution and marketing of exceptional quality biosolids as appropriate. Routine monitoring shall be performed in accordance with requirements specified by DEQ in the facility VPA permit. Testing shall verify the "quality" of the products routinely maintain compliance with DEQ regulatory requirements for Distribution and Marketing:

9VAC25-32-570. Distribution and marketing.

A. Exceptional quality. Distribution or marketing provides for the sale or distribution of exceptional quality biosolids or mixtures of exceptional quality biosolids with other materials such that the mixture achieves the Class A pathogen control, vector attraction reduction and pollutant control standards. Distribution or marketing of Class A biosolids that have been mixed with inert materials may be approved on a case-by-case basis. Use of such mixtures for agricultural purposes shall be evaluated through proper testing or research programs designed to assess the suitability of the material for such use. Exceptional quality biosolids marketed as fertilizers or soil conditioners must meet the following conditions:

1. The biosolids product must be registered with the Virginia Department of Agriculture and Consumer Services in accordance with the provisions of § 3.2-3607 of the Code of Virginia.

2. The biosolids product must be processed to meet Class A pathogen requirements as specified in 9VAC25-32-675 A.

3. The biosolids product must meet one of the vector attraction reduction requirements as specified in 9VAC25-32-685 B 1 through B 8.

4. The biosolids product must meet the ceiling concentrations specified in 9VAC25-32-356 - Table 2.

5. The biosolids product must meet the pollutant concentrations specified in 9VAC25-32-356 - Table 4.

6. Additional parameters may be required for screening purposes such as organic chemicals, aluminum (mg/kg), water soluble boron (mg/kg), calcium (mg/kg), chlorides (mg/l), manganese (mg/kg), sulfur (mg/kg), and those pollutants for which removal credits are granted.

B. Bulk distribution. Exceptional quality biosolids may be distributed and marketed in either bulk amounts (unpacked) or as a bagged product. The following requirements shall apply to distribution and marketing of biosolids products:

1. Any permit holder who distributes or markets exceptional quality biosolids shall comply with the reporting requirements of §§ 3.2-3609 and 3.2-3610 of the Code of Virginia. The records shall be maintained for five years and made available to the department upon request.

2. Bulk quantities of exceptional quality biosolids shall be land applied in accordance with a nutrient management plan prepared by a certified nutrient management planner as stipulated in regulations promulgated pursuant to § 10.1-104.2 of the Code of Virginia, except under the following conditions:

a. The percent solids of the biosolids is equal to or greater than 90% based on moisture content and total solids, or

b. A blended product derived from biosolids is utilized for a purpose other than land application at agricultural operations.

3. Within 30 days after land application at the site has commenced, the permit holder shall provide a copy of the plan to the farm operator of the site and the Department of Conservation and Recreation.

C. Approval of biosolids sources. Only exceptional quality biosolids produced from a sludge processing facility approved by the board can be distributed and marketed.

D. Information furnished to all users. Labeling requirements shall be addressed in a biosolids management plan. Either a label shall be affixed to the bag or other container in which exceptional quality biosolids is sold or given away for application to the land, or an information sheet shall be provided to the person who receives exceptional quality biosolids. The label or information sheet shall contain the following information:

1. The name and address of the person who prepared the exceptional quality biosolids;

2. A statement that application of the exceptional quality biosolids to the land is prohibited except in accordance with the instructions on the label or information sheet;

3. The annual whole sludge application rate for the biosolids that does not cause any of the annual pollutant loading rates in Table 5 of 9VAC25-32-356 to be exceeded; and

4. Information required in accordance with regulations promulgated under § 3.2-3601 of the Code of Virginia and with the labeling provisions of § 3.2-3611 of the Code of Virginia.

E. Recordkeeping.

1. The person who prepares exceptional quality biosolids shall develop the following information and shall retain the information for five years:

a. The concentration of each pollutant listed in Table 4 of 9VAC25-32-356 in the biosolids;

b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in 9VAC25-32-675 A and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in 9VAC25-32-685 B 1 through B 8) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.";

c. A description of how the Class A pathogen requirements in 9VAC25-32-675 A are met; and

d. A description of how one of the vector attraction reduction requirements in 9VAC25-32-685 B 1 through B 8 is met.

2. The person who derives the material that meets the criteria of exceptional quality biosolids shall develop the following information and shall retain the information for five years:

a. The concentration of each pollutant listed in Table 4 of 9VAC25-32-356 in the material;

b. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in 9VAC25-32-675 A and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in 9VAC25-32-685 B 1 through B 8) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.";

c. A description of how the Class A pathogen requirements in 9VAC25-32-675 A are met; and

d. A description of how one of the vector attraction reduction requirements in 9VAC25-32-685 B 1 through B 8 is met.

3. If the requirements in 9VAC25-32-356 B 4 b are met when biosolids is sold or given away in a bag or other container for application to the land, the person who prepares the biosolids that is

sold or given away in a bag or other container shall develop the following information and shall retain the information for five years:

a. The annual whole sludge application rate for the biosolids that does not cause the annual pollutant loading rates in Table 5 of 9VAC25-32-356 to be exceeded;

b. The concentration of each pollutant listed in Table 5 of 9VAC25-32-356 in the biosolids;

c. The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in 9VAC25-32-570 E and F, the Class A pathogen requirement in 9VAC25-32-675 A, and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in 9VAC25-32-685 B 1 through B 8) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.";

d. A description of how the Class A pathogen requirements in 9VAC25-32-675 A are met; and

e. A description of how one of the vector attraction reduction requirements in 9VAC25-32-685 B 1 through B 8 is met.

F. An annual report shall be submitted to the department that includes the following information:

1. Total amount in dry tons of exceptional quality biosolids distributed in a bag or other container per year;

2. Total amount in dry tons of exceptional quality biosolids distributed in bulk; and

3. Total amount in dry tons of exceptional quality biosolids distributed from each approved source.

SUMMARY

Rollins Soil Enhancement, LLC is proposing to establish a facility for the preparation of products derived utilizing processes/procedures which will recycle and reuse materials including: yard wastes, agricultural wastes/manures, approved Class A and Class B biosolids and supplements/materials (as requested). The facility proposes to market materials which include mulch, fabricated soil (landscape and or specialty blends), soil amendments, compost, blended products, and/or horticultural potting/growing mixtures. All products shall be tested to assure compliance with DEQ and VDACS requirements prior to distribution.

Products shall be prepared to assure the quality of the marketed products complies with regulatory requirements and is of a quality to meet the consumer's needs and expectations. The proposed facility will be operated in accordance with a permit issued by the Department of Environmental Quality. Product quality control and quality assurance procedures shall be in effect to assure any distributed products are as specified to the recipient of materials and in compliance with regulatory requirements related to feedstock materials such as biosolids. RSE will accept materials delivered to the site for processing based on criteria specified in this submission.

RSE will accept yard wastes: from the public; from landscape contractors; from clearing contractors; from State/County entities (such as VDOT) and during emergency events as necessary. Based on quanitity of yard waste to be delivered, prearrangement may be required for acceptance and management of high volumes of these materials. Yard waste will be received and processed in a location specified by the site manager. Processing of yard waste (grinding/chipping/screening) will be outdoors. Materials/products may be derived (mulch) or these materials may be incorporated into additional processing operations.

Prearrangement with RSE is necessary for receipt of agricultural wastes/litter and manures. Agricultural wastes are anticipated to require processing onsite and scheduling of receipt shall be managed. Delivery of agricultural wastes/manures shall be to a covered structure at the site. Receipt of liquid manures (<+/- 15% solids) which would require “tank” storage is not proposed.

RSE will accept previously approved, dewatered, Class A & Class B biosolids delivered to the site. Prearrangement is required prior to acceptance to verify the quantity and quality of the material to be delivered. Materials shall be previously approved by DEQ as meeting Class A requirements, which may not require PFRP measures at the facility, and may be included in blending or curing operations; or Class B material,which will require PFRP measures at the facility for additional pathogen reduction.

RSE will prepare products, as detailed in this submission, and assure the quality of products, in process and following completion of processing are in accordance with QA/QC specifications. Temperature and moisture monitoring are significant operational controls to verify products are achieving operating standards. Product testing for quality (metals)/pathogen and nutrient content will be required for QA/QC of marketed products. Specialty blends may require additional testing to meet the specifications of a purchaser.

RSE will make materials/products available at the site. It may be possible to make arrangements with others for bulk delivery. This application is for a facility to receive and prepare materials which will allow materials to be recycled/reused for a beneficial use. All site operations shall be conducted in accordance with the issued VPA Permit.

ATTACHMENTS

Equipment: Tub Grinder; Chipper; Screen, Four Auger Trailer Mounted Mixer; Dryer

Tub Grinder - Unit to be Morbark or equal tub grinder. Sample specification provided:

MORBARK® 950 TUB GRINDER

BENEFITS

- A compact, easy-to-haul tub grinder for lower volume applications, this long-lasting, durable machine is ideal for processing yard waste, pallets and other mixed woody feedstocks into saleable products.
- Proven drive line protection system protects against catastrophic damage from contaminants.
- Like all Morbark equipment, the 950 Tub Grinder is a long-lasting, durable machine backed by a world-class parts and service support team.

Hammermill
Laser-cut, factory-balanced hammermills with forged hammers offer unsurpassed durability and smooth operation.

Torque Limiter
The full breakaway torque limiter system protects the engine and clutch against shock and overload without stalling the engine.

Hydraulic Augers
Quickly remove product from beneath the mill and during material surges, pressure sensors automatically slow tub rotation to prevent plugging.

Tub Tilt
Hydraulically tilt the tub for easy access to grates and screen for routine maintenance.

SPECIFICATIONS

SPECIFICATIONS MAY VARY WITH EQUIPMENT OPTIONS

General

Length (transport) ..... 22'
Length (operating) ..... 29'5"
Height (transport) ..... 12'5"
Width ..... 8'4"
Gross weight ..... 12,750 lbs.
Engine ... CAT, Cummins, John Deere or Perkins
Horsepower ..... 172 HP to 215 HP
Fuel capacity (tank) ..... 59 gallons
Hydraulic oil capacity ..... 50 gallons
Tires ..... (T)245/75R16.B
Tow arrangement ..... Pintle hitch
Brake ..... Electric

Discharge System

Two 12" diameter augers discharge onto a 28" x 15' upright discharge conveyor

Tub

Tub has 8' 4" diameter opening across the top, 6'6" diameter inside base, and 44" deep walls constructed of 1/4" reinforced steel plate, floor constructed of 1/4" thick T-1 wear-resistant steel

Tub supported by (5) rubber line guide rolls,

Hydraulic tub tilt for easy access to hammermill with hydraulically powered variable RPM forward and reverse tub control with electronic sensor drive

Remote control

Front Stabilizer

Dual axles

Tub cover for debris containment

Hammermill and Screen

22-1/2" x 32-1/2" Hammermill system constructed of heavy-duty 16" diameter laser-cut rotor, (13) 1-1/8" thick 2-piece laser-cut rotor plates to ensure precision and enforce steel strength. The plates are keyed on a 4-1/2" diameter rotor shaft with 2-15/16" bearings direct driven at engine RPM and (8) 1-1/4" hammer retaining rods.

Options

Magnetized end pulley for discharge conveyor, complete with collecting slide tray for ferrous metal removal
28" wide x 15' long hydraulic folding discharge conveyor
Single tub slide tray assembly
Dual tub slide tray assembly
Fifth wheel towing arrangement
1/3 Tub cover
Hydraulic front stabilizer
Variety of screens

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Chipper: Unit to be Morbark or equal. Sample specification provided:

MORBARK® BEEVER™ M12D

BENEFITS

- With its power and easily transportable design, this compact and economical chipper is the ideal unit for utility line clearing, residential tree services, rental yards and municipalities.
- The 18" diameter single top feed wheel easily climbs over material, reduces drag and increases chipping efficiency.
- Staggered knife pockets maintain a more consistent chip quality, reduce hang slows, reduce disc wear and use less like chipper knives versus two long and ten short in each pocket.
- Like all Morbark equipment, the M12D is a long-lasting, durable machine backed by a world-class parts and service support team.

Chipper Disc
33" diameter x 2" thick chipper disc material, ultrasonically tested and certified free of material defects, has four full length, serviceable paddles for maximum chip throwing velocity.

Channel Frame
8.2 lb., 6" Channel frame fully extends beneath the infeed for maximum support.

Infeed System
Folding infeed tray with single input feed wheel and straight, flow-through infeed design for more efficient material feed.

Feed Wheel
"Sculptor™" Top Feed Wheel Compression system with spring assisted down pressure generates more than 3,000 lb.ft. of material pulling force.

SPECIFICATIONS

General
Chipping capacity ..... 10"
Height ..... 8'2"
Width ..... 5'11"
Length (transport) ..... 19'2"
Length (operating) ..... 17'5"
Gross weight ..... 5,350 lbs.
Suspension ..... 4,000 lb. torsion
Infeed opening ..... 13" wide x 32" high
Throat opening ..... 18" wide x 12" high
Disc ..... 2" thick x 33" diameter
Engine ..... CAT or Kubota
Horsepower ..... 84-99 HP
Fuel capacity ..... 26½ gallons
Hydraulic capacity ..... 9 gallons
Knife ..... 8.2 lb., 6" channel
Tires ..... (2) 235/75R15"
Hitch ..... 2 5/16" Pintle

Equipment Highlights
Chipper disc with four staggered 9" x 5" x 1¼" thick edged knives and four full length, bolt-on chip throwing paddles
Folding infeed tray for reduced transport length and increased maneuverability
Quarter disc hood access for disc maintenance and easier serviceability
360° manual rotation discharge with adjustable chip deflector
Enclosed engine with gauge panel, radiator fines screen and drain exit for fuel adjustment
Fuel tank sight gauge, drain plug and shut off valve
Hydraulic tank shut-off valve, drain plug, chem-net sieve and vented filler fixed assembly with dipstick to check oil level

Additional Features
Morthane Fluid System: A chemically cured, electrostatically applied urethane coating with high gloss finish, built-in UV protection, chip and chemical resistance and corrosion protection

Options
Variable speed flow control
Reversing automatic feed system with hydraulic lift assist
Winch package: heavy-duty, 5,000 lb. pull capacity with rope and 10" chute guard
Aluminum diamond plate fenders
Custom paint and logo packages
Knife cover tool
Engine stop on infeed
Material pushing tool
Discharge chamfered door on side or bottom
Spanish and English safety decals

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Trommel Screen (or Equal) Sample specification provided:

Mixer – Purchased Used. Four Auger trailerable mixing unit.

Dryer – Proprietary Unit built for Owner.

Biosolids Data:

Data is provided for three potential sources; additional DEQ approved biosolids may be accepted in the future.

ARenew: Data taken from a recent ARenew RFP. If material is to be accepted additional current data will be provided.

Characteristics of Biosolids:

Type and Condition: Normal product is pasteurized anaerobically-digested biosolids which meet the EPA Part 503 quality criteria for Class "A" categorization and the Virginia | 9VAC25-32 Regulations for Exceptional Quality biosolids. This material is dewatered to an average of twenty-eight percent (28%) solids by Centrifuges.

2012 Solids Data:

MONTH	WET TONS	% SOLIDS
January	2,043.57	26.8
February	1960.64	27.1
March	1717.48	26.8
April	1830.27	27.8
May	2021.28	27.8
June	1804.80	28.4
July	2102.14	28.9
August	1659.68	28.9
September	1479.00	28.1
October	1708.12	28.2
November	1793.98	27.6
December	1598.52	27.5
Totals	21,719.5/yr.	27.8 avg.

Chemical Composition: The following chemical data are taken from a recent biosolids analysis report from a contracted laboratory. These data are to be considered typical only. They are not intended to be a guarantee of chemical composition.

POLLUTANT	CONCENTRATION (mg/kg dry weight)
Arsenic	7.0
Cadmium	<2.0
Chromium	47
Copper	375
Lead	38
Mercury	0.9
Molybdenum	9
Nickel	17
Selenium	5.0
Zinc	866
Iron	60,500
Ammonia-Nitrogen	13,200
NO_3-NO_2-Nitrogen	9.58
Phosphorus	35,200

Dale Service - Section 1 Biosolids Results 2012-13

Sample Date:	6/11/12	8/18/2012	10/14/12	3/3/2013	4/14/2013
Parameter:					
Ammonia	1630	2160	2650	4310	3220
Nitrate/Nitrite	48.9	591	58.9	2350	26.7
TKN	39,000	41,900	53,700	50,000	68,200
Phosphorus	38,500	36,700	36,300	33,600	28,600
VS%	53.3	70.3	66.2	65.9	
Arsenic	24.9	<20	<10	<10	<3
Cadmium	2.48	<2	<2	<2	<2
Chromium	20	8.19	7.97	19.1	27
Copper	165	113	111	136	131
Lead	19.6	<4	<4	<4	6
Mercury	0.663	0.025	0.704	0.403	0.5
Molybdenum	<4	<4	<4	<4	<5
Nickel	10.4	4.74	4.97	13.2	19
Selenium	<4	<20	<4	<10	<5
Zinc	422	281	232	315	394

Level of Pathogen Reduction - Class B

Dale Service Corporation - Section 1 **2012**

Pathogen Reduction - Alternative 1 Fecal Coliform Count

Biosolids are stabilized by aerobic digestion & monitored for

Fecal Coliform Concentration - MPN per gram Total Solids

Quarter 1 Date	Results MPN/g	Quarter 2 Date	Results MPN/g	Quarter 3 Date	Results MPN/g	Quarter 4 Date	Results MPN/g
3/5/2012	500,000	6/12/2012	1,810,000	8/17/2012	185,000	10/15/2012	331,000
3/7/2012	142,000	6/13/2012	458,000	8/20/2012	186,000	10/17/2012	149,000
3/9/2012	309,000	6/15/2012	233,000	8/22/2012	485,000	10/19/2012	149,000
3/12/2012	140,000	6/18/2012	184,000	8/24/2012	500,000	10/22/2012	362,000
3/14/2012	1,800,000	6/20/2012	139,000	8/27/2012	110,000	10/24/2012	1,020,000
3/16/2012	1,400,000	6/22/2012	435,000	8/29/2012	485,000	10/26/2012	331,000
3/19/2012	1,240,000	6/25/2012	314,000	8/31/2012	291,000	10/29/2012	170,000
Geometric Mean	514,918		352,388		278,376		284,988

Dale Service Corporation - Section 1

Vector Attraction Reduction - Option 1

(Calculation showing 38% Reduction in Volatile Solids)

Percent Volatile Solids Reduction - 2012

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Date	2/26/2012	6/19/2012	8/16/2012	12/18/2012
Reduction	41.30%	56.40%	40.30%	49.20%

Dale Service - Section 8 Biosolids Results 2012-13

Sample Date:	6/11/12	8/16/2012	10/14/12	3/3/2013	4/14/2013
Parameter:					
Ammonia	1800	2630	5090	3210	5070
Nitrate/Nitrite	617	440	2	1380	19.2
TKN	44,800	45,900	62,500	51,200	62,300
Phosphorus	34,600	34,800	32,600	21,600	29,700
VS%	60	63.3	66.2	70.4	
Arsenic	37.1	<20	<10	<10	<3
Cadmium	2.12	<2	<2	<2	<2
Chromium	20.1	14.1	8.77	18.4	27
Copper	179	157	119	144	114
Lead	16	<4	<4	<4	5
Mercury	0.47	0.0891	0.916	0.299	<0.4
Molybdenum	<4	5.25	<4	<4	<5
Nickel	11.7	10.1	5.74	12.4	17
Selenium	<4	<20	<4	<10	<5
Zinc	486	462	287	322	382

Results reported as mg/kg

Dale Service Corporation - Section 8 **2012**

Pathogen Reduction - Alternative 1 Fecal Coliform Count

Biosolids are stabilized by aerobic digestion & monitored for
Fecal Coliform Concentration - MPN per gram Total Solids

Quarter 1 Date	Results MPN/g	Quarter 2 Date	Results MPN/g	Quarter 3 Date	Results MPN/g	Quarter 4 Date	Results MPN/g
3/4/2012	301,000	6/11/2012	71,000	8/17/2012	108,000	10/15/2012	305,000
3/7/2012	186,000	6/13/2012	284,000	8/20/2012	146,000	10/17/2012	286,000
3/9/2012	183,000	6/14/2012	281,000	8/22/2012	41,200	10/19/2012	305,000
3/12/2012	488,000	6/18/2012	160,000	8/24/2012	80,200	10/22/2012	110,000
3/14/2012	126,000	6/20/2012	128,000	8/27/2012	281,000	10/24/2012	307,000
3/16/2012	284,000	6/22/2012	168,000	8/29/2012	338,000	10/26/2012	751,000
3/19/2012	747,000	6/25/2012	105,000	8/31/2012	121,000	10/29/2012	289,000
Geometric Mean	279,618		153,922		129,133		295,124

Dale Service Corporation - Section 8

Vector Attraction Reduction - Option 1

(Calculation showing 38% Reduction in Volatile Solids)

Percent Volatile Solids Reduction - 2012

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Date	2/28/2012	6/17/2012	8/6/2012	10/20/2012
Reduction	49.50%	47.30%	63.40%	62.20%