

RICHMOND REGIONAL PLANNING DISTRICT COMMISSION
Minutes of Meeting
January 8, 2015

Members (Alternates) Present

Manuel Alvarez (A).....	Goochland County
Jonathan T. Baliles	City of Richmond
Steve A. Elswick	Chesterfield County
Evan Fabricant.....	Hanover County
Daniel A. Gecker, Treasurer.....	Chesterfield County
Richard W. Glover	Henrico County
Kathy C. Graziano.....	City of Richmond
Russell J. Gulley.....	Chesterfield County
Dorothy Jaeckle.....	Chesterfield County
Angela Kelly-Wiecek	Hanover County
David A. Kaechele	Henrico County
Patricia S. O’Bannon.....	Henrico County
C. Harold Padgett	Hanover County
Ken Peterson, Chairman.....	Goochland County
W. Canova Peterson	Hanover County
Edward W. Pollard	New Kent County
Rodney Poole	City of Richmond
Frank J. Thornton	Henrico County
C. Thomas Tiller.....	New Kent County
Carson Tucker	Powhatan County
Arthur S. Warren	Chesterfield County
David Williams, Vice Chairman	Powhatan County

Members Absent

Parker C. Agelasto.....	City of Richmond
Daniel Arkin	City of Richmond
Karin Carmack	Powhatan County
Timothy M. Davey	Chesterfield County
James M. Holland.....	Chesterfield County
Eric Leabough	Henrico County
Floyd H. Miles, Secretary.....	Charles City County
John H. Mitchell	Henrico County
Tyrone E. Nelson.....	Henrico County
Faye O. Prichard.....	Town of Ashland
Charles R. Samuels.....	City of Richmond

Others Present

John Amos RRPDC Legal Counsel
Robert Crockett..... Advantus Strategies
Jodi Deal Richmond Suburban News
Leigh Dunn Goochland County
Scott Dunn Chesterfield County
Joe Emerson Henrico County
Lidia Epp..... New Kent County
Gregory Evanylo..... Virginia Tech
Mike Flagg Hanover County
James Grandstaff..... Henrico County
Frank Harksen..... Hanover County
Rodney Hathaway..... New Kent County
Jackie Hart Citizens Group
Wayne Hazzard..... Hanover County
Angie Jenkins..... Virginia Department of Environmental Quality
Tyla Matteson Chesterfield County
Thomas Miller..... New Kent County
Del. Chris Peace..... Virginia House of Delegates, 97th District
Myra Goodman Smith..... Leadership Metro Richmond
John Uzupis..... Synagro
John Vithoulkas Henrico County
Don Wagner King William County
Kyle I. Winter Virginia Department of Environmental Quality

Staff Present

Robert A. Crum Executive Director
Jo A. Evans..... Assistant Executive Director
Julie H. Fry Executive Secretary
Sulabh Aryal..... Planner
Anne Darby Senior Planner
Chuck Gates Manager, Community Affairs
Barbara Jacocks Director, Planning
Jin Lee Senior Planner
Leigh Medford..... GIS Coordinator
Kathy Robins Senior Planner
Greta Ryan..... Senior Planner
Jackie Stewart..... Manager, Special Projects
Sarah Stewart..... Senior Planner
Peter M. Sweetland..... Finance and Contracts Administrator

Call to Order

Chairman Peterson called the regularly scheduled January 8, 2015 RRPDC meeting to order at approximately 9:05 a.m. in the RRPDC Board Room. He then led members in the pledge of allegiance to the flag.

I. ADMINISTRATION

A. Certification by Commission Executive Director of Meeting Quorum

Mr. Crum reported that a quorum of members was not present. He said that since this is an informational meeting, action on the Consent Agenda can be deferred until the end of today's meeting, if a quorum is present at that time, or until the February meeting.

B. Requests for Additions or Changes to the Order of Business

As there were no changes to be made to the agenda, Chairman Peterson said the agenda will be accepted as presented.

C. Open Public Comment Period

Chairman Peterson opened the public comment period, noting that if anyone wished to address the members, to please come to a microphone and provide his or her name, locality of residence, and if appropriate the name of any organization being represented. Chairman Peterson asked that any speaker please limit comments to three minutes per speaker.

The first speaker was Ms. Tyla Matteson, a resident of North Chesterfield. She said she'd like to speak to the matter of industrial residuals and sludge applications. Ms. Matteson noted that the panel of speakers scheduled for today's meeting will speak to both sides of the issue, and she hoped that members would ask questions following the presentations.

Ms. Matteson said that RockTenn residuals contain a number of known carcinogens which threaten waterways, groundwater, people's drinking water wells, streams, rivers, and the Chesapeake Bay. She said these residuals can also pollute animal life, crops, and marine life. Once the residuals are applied to the land, the sludge and associated persistent pollutants are difficult to remove, if not impossible. She said she understands that *persistent* in this case means these residuals will not degrade.

Ms. Matteson said she believes the Virginia Department of Environmental Quality (DEQ), will only maintain application records for a few years following the land application. She said if records are only kept for a few years, it is difficult to monitor safety issues following the application. She gave an example that mercury has now been found to be 100 times more toxic than it was believed to be 20 years ago. Information on the entire chemical and biological composition of residuals from RockTenn, Tyson, and Smithfield is inadequate.

DEQ will be avoiding analyzing and monitoring the pollutants. The data used in the permit package was based on water-based leachates, the toxicity characteristic leaching procedure (TCLP). This is a requirement for landfilling and not for land application. All of the sludge will be land applied, not just the leachate. Ms. Matteson noted that this information was received from Dr. Rob Hale, Virginia Institute of Marine Science, who is an expert in flame retardants. He has written many papers on the effects of pollutants on terrestrial and aquatic organisms.

Ms. Matteson said that slaughterhouse waste was not analyzed for the permit. This type of waste contains antibiotics, growth promoters, pathogens, and other toxins. Information on phosphorus, which is already at high levels in some areas along the Pamunkey River, was omitted from the permit discussion.

Ms. Matteson said it would be safer to landfill the residuals, which is the current process used by RockTenn, and not to land apply or burn.

There is a 25-year/24-hour storm requirement which Ms. Matteson said she and others believe is no longer adequate given that storms now are heavier and more frequent and compromise the adjacent land and streams with toxic runoff.

Ms. Matteson noted that Synagro recently had violations in Virginia (2012) in Goochland, Essex, and Fauquier Counties. The State Water Control Board fined Synagro \$65,000. However, Synagro only paid \$16,250, agreeing to a two-year environmental project in lieu of paying the total fine amount. The reason for the fine was because ammonia, e-coli, and bacterial colonies leaked from a storage pod into a tributary of Dragon Run. Surry County was party to a lawsuit a few years ago involving hog waste. There have also been violations in New York, California, Rhode Island, and Connecticut resulting in other fines and jail terms.

Ms. Matteson thanked members for the opportunity to speak.

The next speaker was Mr. Don Wagner, a resident of King William County. He said he is speaking this morning because everyone shares a common interest with three of the counties in the Richmond Regional PDC and the deep concern with the very probable environmental impacts resulting from the land application of industrial residuals on farmlands and forests.

Mr. Wagner said he and other concerned citizens have spent the past year expressing their concerns with the contamination of rural wells, groundwater, streams, and rivers as a result of the application of materials laden with heavy metals and toxins which can infiltrate groundwater and wash into streams through erosion. DEQ and the industry have turned a deaf ear to these concerns steadfastly maintaining that these industrial residuals will be applied in accordance with their regulations. Mr. Wagner said while he and others do not entirely disagree with that approach, there is concern that the regulations are not being properly applied to the variety of materials found in the various sources of industrial residuals and that the so-called science being used by DEQ is outdated. As an example,

Mr. Wagner said that DEQ often cited that the 100-foot setback from wells is based on long-standing health department regulations that required water wells to be 100 feet from the septic tank and drain fields. The health department regulation was not based on any kind of science in regard to infiltration or migration of drain field pollutants through the groundwater. In fact, there is a vast difference between the types of pollutants found in home septic systems and those found in industrial residuals.

Mr. Wagner noted that during this morning's meeting, RRPDC members will hear a presentation from DEQ and from the Biosolids Council, which is likely to be the same rhetoric he and other concerned citizens have been hearing for the past year. Presentations will also be made by Dr. Greg Evanylo, who is a Virginia Tech Extension Specialist and coauthor of a study paper on papermill sludge. Mr. Wagner said he has provided to the RRPDC Chairman a letter from Thomas Swartzwelder, King and Queen County Administrator, which is a critical evaluation of the study completed by Dr. Evanylo as well as two other studies on the use of industrial residuals. Mr. Wagner said he hoped members will review the letter as they consider the presentations that will be made this morning.

Mr. Wagner said he and other concerned citizens are in support of legislation presented by Delegate Chris Peace, which calls for further studies on the use of these industrial residuals. Mr. Wagner said he would like to recommend that any such studies be performed by a third party interest, such as the Virginia Marine Resources Commission.

Mr. Wagner thanked members for the opportunity to speak.

The next speaker was Mr. Tom Miller from New Kent County, formerly from Chesterfield County. He said he is in support of Del. Peace's legislation.

Mr. Miller said that three years ago, he and his wife built a house in New Kent County, adjacent to property owned by Mr. Ray Davis, a member of the New Kent County Board of Supervisors. Mr. Davis is a farmer. Mr. Miller said when he asked Mr. Davis for his opinion regarding industrial residuals, Mr. Davis said farmers in New Kent County do not till their soil. If sludge is placed on top of the soil, it will run off into streams and other waterways. Mr. Miller said the entire New Kent County Board of Supervisors is in opposition to sludge application.

Mr. Miller noted that when he built his house, he was required to install about 2,000 feet of silt fencing to contain the sediment created during construction. He said very few farmers use silt fencing.

Mr. Miller thanked members for the opportunity to speak.

The final speaker was Ms. Jacqueline Hart from King and Queen County. She said she represents a large number of citizens who are represented by members of the RRPDC Board. She said this group is not formally organized, but they have met frequently over the past year to discuss this important issue.

Ms. Hart said this is the fifth time she's spoken, in writing or verbally, regarding the issue of industrial residuals. She said during the process, she and other like-minded citizens have been labeled as "city elitists" who have moved into rural communities and are trying to push their way of life onto farmers. She said this is not accurate. Ms. Hart said when it's convenient, her group of concerned citizens has been called "country bumpkins" because they can't understand the science being applied. She said this is also not true. She said as she's met all of the citizens in the area who are opposed to this type of sludge, their collective belief that this application is harmful has been validated.

Ms. Hart said she first wrote a letter to DEQ during the first comment period, appealing to the DEQ's sense of integrity, asking that they act in a holistic manner. She said when this type of issue is partitioned, it's easy to create an inaccurate picture for those who need to make decisions. She said it is important that all areas of the issue be considered. The letter did not have the result that she thought it might have.

Ms. Hart then spoke during the first public hearing, appealing to DEQ's sense of logic and reason in the sequence in which DEQ is applying their decision about the permit. She said she did receive some constructive feedback from DEQ following the hearing.

Ms. Hart said the next time she spoke, she presented a large amount of scientific information in the form of reports and studies from organizations DEQ had indicated they would consider – state land grant colleges and peer review scientific journals. Ms. Hart said she provided about 30-40 of these studies which were not included for consideration and they were not presented to the DEQ board prior to the meeting.

Ms. Hart said she presented legal evidence during the meeting at which the decision on the permit was made. The legal evidence showed that the permit would violate several regulations and codes within the state of Virginia. This was also ignored and the permit was approved.

Ms. Hart said today she hopes RRPDC Board members will access the information needed to assist them in their decision making within their localities. She said there are some financial considerations. She said her organization is working with citizens in many of the surrounding localities to obtain grassroots input. She indicated that DEQ has not done this type of outreach. Many of the citizens are concerned about their land values, especially if they are trying to sell their homes. She said many have indicated they will do whatever is needed to avoid living in a locality where this type of land application is allowed. Many of these citizens are also concerned about health issues.

Ms. Hart said when property values decrease, then tax revenues will also decrease. Property taxes can also drop. The studies being applied have been funded by organizations that will benefit from this type of land application. The universities need funding for the studies. Ms. Hart said citizens pay taxes that they hope will be used for such studies. However, studies presented so far have been paid for by industries. She said this brings into question ethical concerns.

Ms. Hart said she hoped RRPDC members understand the financial issue. Studies paid for by an industry will not be objective. She said other studies have been completed, but DEQ is not required to use them.

Ms. Hart said that she feels those farmers who contaminate the land in this manner should not be allowed to be called farmers. The agricultural lobby has a strong influence on state decision makers. She said she's thankful that Del. Peace has been willing to look at the issue objectively. Ms. Hart said she and members of her organization recognize it will be the local leaders who can make the difference.

Ms. Hart said she and her organization would like to ask that localities require enforcement by DEQ, including requiring that DEQ follow its own regulations. Secondly, her organization requests that localities provide funding for objective testing.

Mr. C. Peterson asked Ms. Hart the name of her group. Ms. Hart said the group does not have a name at this time but they have been collectively communicating on a regular basis. She said she can provide names of group members by locality if that is required.

There were no other requests from the public to make comments and Chairman Peterson closed the Public Comment period. He thanked the speakers who did comment this morning. He said an informed and engaged citizenry is an important part of the process.

D. Chairman's Report

Chairman Peterson said as a courtesy to the guest speakers for today's presentation, he will not have a report.

E. Executive Director's Report

Mr. Crum said he will follow the Chairman's lead and not provide a report today out of respect for the guest speakers.

F. Environmental and Intergovernmental Reviews

Chairman Peterson asked Mr. Crum to provide information on this item.

Mr. Crum said RRPDC staff did not process any environmental or intergovernmental reviews since the December report.

II. CONSENT AGENDA

Chairman Peterson said that a quorum of members is in attendance at this time, which he confirmed with Mr. Crum, and action can be taken on items listed on the Consent Agenda:

- A. Meeting Minutes – December 11, 2014
- B. Financial Reports – November 2014

Chairman Peterson asked if there were any questions on these items.

Ms. Graziano made a motion that the Consent Agenda be approved as presented. Mr. Gecker seconded the motion. There was no additional discussion and the motion carried unanimously.

III. UNFINISHED BUSINESS

There was no Unfinished Business to bring before the Board.

IV. NEW BUSINESS

A. Informational Presentation on Biosolids and Industrial Residuals Disposal

Chairman Peterson said today's presentation and discussion is of a workshop nature and no vote or position will be taken on the issue. This discussion is for information and education only. Following the presentations, members will have an opportunity to ask questions of today's speakers. Chairman Peterson asked members to hold their questions until all speakers have had a chance to speak in order to allow everyone sufficient time to make their presentations.

Chairman Peterson said today's discussion is topical as many of the jurisdictions have taken positions and adopted resolutions on the issue. He also noted that there may or may not be new legislation presented during this year's General Assembly session regarding the issues. One of the RRPDC Board members requested that this topic be brought forward to provide more information on the topic. Mr. Crum was asked to contact various experts on the issue who have generously given their time to attend today's meeting. Chairman Peterson asked Mr. Crum to introduce today's speakers.

Mr. Crum recognized Ms. Sarah Stewart, RRPDC Senior Planner, who put forth a lot of effort to bring together today's speakers and to organize the program. Mr. Crum thanked Ms. Stewart for her work.

Mr. Crum said today's first speaker will be Mr. Robert Crockett, who is with Advantus Strategies and Virginia Biosolids Council.

Mr. Crockett thanked members for their request to address the biosolids topic during today's meeting. He said Advantus Strategies represents the Virginia Biosolids Council, which is composed of municipalities across the Commonwealth and contractors which land apply or recycle compost biosolids.

Mr. Crockett said he will provide a brief overview of today's topic and then introduce the other speakers.

Biosolids are primarily organic, semi-solid material that result from the treatment of wastewater to kill pathogens. It is safe, extraordinarily well researched, and used on farms

and in compost. In Virginia, biosolids are permitted and land applied in 62 counties. In 2013, the total amount of biosolids land applied was 185,000 tons. This was used on about 52,000 acres. This represents one-half of one percent of the total of farms and forests in the state.

Mr. Crockett said that within the RRPDC footprint, biosolids were land applied in Charles City, Chesterfield, Goochland, Hanover, Henrico, New Kent, and Powhatan Counties.

The most frequently asked question is whether biosolids are safe. Mr. Crockett said that in 2007, the Virginia State Department of Health published a study by three respected doctors entitled *Health Effects of Biosolids Applied to Land – Available Scientific Evidence*. He said the study represented an exhaustive review of the current scientific literature about biosolids. The primary conclusion of the study was:

...There does not seem to be strong evidence of serious health risks when biosolids are managed and monitored appropriately. Human health allegations associated with biosolids usually lack evidence of biological absorption, medically determined human health effects, and/or do not meet the biological plausibility test.

In 2014, this work was reconfirmed by the Virginia Department of Health.

Mr. Crockett said that since the Virginia Farm Bureau is not represented at today's meeting, he would try to speak on behalf of those Virginia farmers who choose to use biosolids, noting that not all farmers use biosolids. He said biosolids have rehabilitated farms with poor soil conditions and sustained farms all over Virginia. Biosolids have also sustained farms through draught due to its unique composition. For farmers who do choose to use biosolids, they can be vitally important to the farm's economy.

Mr. Crockett said more information will be provided by today's speakers. He said he would introduce all speakers in the order in which they will appear.

Mr. James Grandstaff – Division Director of Henrico County's Department of Public Utilities Water Reclamation Facility. Mr. Grandstaff is a graduate of Virginia Commonwealth University (VCU) and a former VCU employee.

Mr. Kyle Winter – Regional Deputy Director/Water Compliance and VPA Program Manager, Virginia Department of Environmental Quality. He is a graduate of Virginia Military Institute.

Dr. Gregory Evanylo – Professor and Extension Specialist, Department of Crop and Soil Environmental Sciences at Virginia Tech. His degrees are from the University of Connecticut and Massachusetts as well as the University of Georgia. He began his career as an agronomist at the Eastern Shore Experiment Station in 1984. Dr. Evanylo joined Virginia Tech in 1989. His experience with biosolids and industrial residuals is extensive.

Del. Chris Peace – Virginia House of Delegates, 97th District. He is a graduate of Hampden Sydney College.

Mr. Crockett said that Mr. John Uzupis, who is with Synagro as a regional manager in the Piedmont office, is in attendance and will also be available to answer any questions.

Mr. Grandstaff said that in addition to his work with Henrico County, he also currently serves as the President of the Virginia Biosolids Council and is a member of the Virginia Association of Municipal Wastewater Associations, Biosolids Committee. He thanked members for the opportunity to provide information on how Henrico County works to make dirty water clean. Mr. Grandstaff said his presentation will provide an overview of the organization, a summary of wastewater treatment processes, how biosolids are produced, and why land application is an important biosolids management strategy.

Mr. Grandstaff clarified that he will be discussing biosolids and not industrial residuals. Biosolids are applied in Henrico County and on property owned by the County, and have been applied historically.

The current Director of Henrico County's Public Utilities Department is Art Petrini. The Department of Public Utilities provides water and sewer service to approximately 95,000 customers representing about 300,000 people. The Department operates as an enterprise fund, which means water and sewer projects are funded through payments received from water and sewer customers. There are no general fund tax dollars used in these projects. Mr. Grandstaff said the Department has seven divisions –

- Business
- Construction
- Design
- Operations
- Solid Waste
- Water Reclamation Facility
- Water Treatment Facility

The Water Reclamation Facility has 66 full time employees and an operating budget of approximately \$11 million, with over \$500 million in assets.

The Department also houses the Henrico County Central Environmental Laboratory which supports the wastewater treatment process and drinking water distribution. The County's industrial waste pretreatment facility is also part of the Department. The core business function is to protect human health and the environment, as it is in every jurisdiction. The treatment technologies used in Henrico County are very similar to those used in other localities.

Mr. Grandstaff noted that wastewater treatment facilities are essentially industrialized manufacturing facilities, with the end products being clean water, biosolids, and gas. Henrico County's treatment facility treats and returns over 40 million gallons of clean

water each day. About 103 tons of biosolids are generated during this process as well as 650,000 cubic feet of gas, also on a daily basis.

All of Henrico County's facilities are highly regulated by state and federal agencies, as are all of these types of facilities across the state.

Mr. Grandstaff provided information on the wastewater treatment process at the Henrico County facility. He noted there are 1,500 miles of sewer pipes in the County to collect wastewater and transport it to the facilities. Industrial customers must, as required by regulation, pretreat wastewater to protect the environment and employees from materials that may pass through the treatment process.

The liquid processing steps include preliminary treatment screening; dewatered screenings with items (grit) collected for landfill disposal; preliminary clarification (sedimentation tank); biological reactors (micro organisms consume the dissolved organic waste/pollutants); secondary clarifier (used to settle the micro organisms generated in the biological reactors); final filters and disinfection (chlorine); final effluent (discharge of clean water into the James River). Mr. Grandstaff noted that there is a subsurface discharge station underneath the Chester/Enon Bridge.

The solids collected during the liquid process undergo a separate treatment process to meet state and federal requirements for beneficial use such as land application – Class B biosolids product. Steps in this process include screenings/grit; dewatering; anaerobic digestion (heat and treatment in the absence of oxygen); cleaning of gas collected during the anaerobic process. The excess gas produced during the digestion process is flared (burned) to the atmosphere to protect air quality. Dewatered biosolids are processed to a final product that is more or less 25 percent solids.

In accordance with state and federal regulatory requirements, the County continually monitors various parameters to ensure they are performing as designed and to ensure the final product – Class B biosolids in Henrico County – meet all regulatory requirements established for land application of Class B biosolids. Records are provided to the state and the land application vendor on a monthly basis and to the EPA on an annual basis.

Once the Class B biosolids have been confirmed as meeting all requirements, it is stored until the land application vendor collects it for distribution to local farmers.

Henrico County is a member of the Virginia Biosolids Council and is a party to a Code of Good Practice which goes above and beyond state and federal regulations.

Mr. Grandstaff summarized by saying that biosolids are the stabilized and dewatered semi-solid residuals generated during the wastewater treatment process. Henrico County believes its decision to provide biosolids for land application is well informed and responsible. The two most commonly applied alternatives to biosolids land application are landfill disposal and incineration. Landfill disposal is twice as expensive as land application. Landfill space is also limited. Incineration requires many layers of permitting.

There are also air quality issues and disposal issues of the residual that remains after incineration.

Henrico County believes that biosolids land application provides Virginia farmers with substantial benefits. It is estimated that land application can save a farmer approximately \$300 per acre in fertilizer costs compared with commercial fertilizers. Local farmers routinely report that biosolids are superior to commercial fertilizers. Land application represents recycling of biosolids for beneficial use.

Land application has been practiced for decades and is the most common use for biosolids. Nutrients such as phosphorus and nitrogen, micro-nutrients (trace metals essential for life), and organic matter in the biosolids are beneficial for crop production, gardening, forestry, turf growth, landscaping, and other vegetations. Biosolids conditions soil and eliminates the need for commercial fertilizers.

Mr. Grandstaff pointed out that to date, overwhelming scientific literature has shown that when biosolids are managed and applied in accordance with state and federal regulations, they are protective of human health and the environment. All of this is the basis on which Henrico County determined decades ago that land application of Class B biosolids is the most economical and environmentally sound strategy to manage biosolids. Land application helps to keep utility rates low, returns a valuable resource to the land, and supports local farmers and land reclamation efforts while protecting human health and the environment.

Mr. Grandstaff thanked members for their attention.

Mr. Crum introduced the next speaker, Mr. Kyle Winter.

Mr. Winter thanked members for their time. He said he works for DEQ as the Regional Deputy Director of the Piedmont office. He said he directly supervises the land application program for the Piedmont Region and air, water, and solid waste permitting and inspection programs for the region. Mr. Winter said he has been with DEQ since 1991. In 1994, he wrote a Virginia Pollution Abatement (VPA) permit for the facilities doing land application in Goochland, Hanover, New Kent, and Charles City Counties. He said he has also negotiated permits and some enforcement actions in most of the counties represented by the RRPDC. Mr. Winter said he's also issued permits for several of the Region's landfills.

Mr. Winter said during his presentation, he will provide information on the following:

- authorization for the program
- DEQ approach to permitting
- history of program
- industrial residuals versus biosolids
- VPA permit processing
- contents of VPA permit

Mr. Winter said some of his presentation will be the same as the information provided by Mr. Grandstaff.

He noted that land application of biosolids and industrial residuals represents a way to reuse the nutrient content and soil conditional properties of the materials involved. Many publicly owned treatment facilities in the RRPDC Region were designed on the premise that land application would remain economically feasible and administratively permitted. Should either of those two premises change, it would take time for the affected localities to adapt. Mr. Winter noted that alternatives to land application include incineration and landfilling. A broader reliance on these technologies would also require time and would have environmental, social, and political ramifications.

Mr. Winter said the program is authorized based on the following:

- Constitution of Virginia, Article 11, recognizes citizens' right to clean air, water, and soil
- §62.1-44.15 of the Code of Virginia establishes Virginia Pollution Abatement (VPA) permit program
- 9VAC25-32-30 (VPA regulation) permits land application of industrial waste
- 9VAC20-130-30 (Virginia Solid Waste Regulation) establishes reuse as preferential to disposal
- no federal equivalent to VPA program; EPA has historically shown deference to Virginia

DEQ's approach to permitting is based on the following:

- due process for the applicant is required
- once an application is determined complete, a permit will be developed unless proposed activity is otherwise prohibited
- controversial permits are approved as drafted, approved with modifications, or denied by vote of a citizen board approved by the Governor

Mr. Winter provided a brief timeline of the program's history:

- Industrial Waste No Discharge (IWND) / Municipal Waste No Discharge (MWND) certificates were used until the early 1990s
- individual VPA permits have been used since the 1990s
- general permits for animal and poultry wastes were developed
- Virginia Department of Health (VDH) was involved in the process from the mid-1990s until 2007
- biosolids program returned to DEQ in 2008
- VDH / Biosolids Use Regulation (BUR) permits currently being phased out

A summary of the difference between industrial residuals and biosolids was provided:

- industrial residuals come from specific activities

- waste streams are controlled by the generator of residuals as opposed to regulation by the generator of biosolids (i.e., local pretreatment programs)
- industrial residual characteristics may be more predictable and more consistent
- permits are similar because industrial residuals and biosolids are often intended for similar uses on similar sites and similar operational practices may be reasonably expected to provide similar protection to human health and the environment

Mr. Winter reviewed the VPA process:

- application includes material characteristics, proposed sites for application, and where applicable, landowner agreements
- aside from verifying information on landowner agreement forms is complete and accurate, DEQ does not interfere with arrangements between private parties
- localities are notified when the application is received and when the permit goes to public notice
- as stated above, once the application is determined to be complete, DEQ is required to develop the permit unless the proposed activity is otherwise prohibited
- controversial permits may go to hearing if there is significant public interest, there are substantial disputed issues, and action requested is not inconsistent with state or federal laws or regulations

There are several types of permits:

- biosolids – under VPA program (third party application) or Virginia Pollutant Discharge Elimination System (VPDES) program (generator applies own biosolids)
- industrial wastewater – under VPA program (typically on dedicated site owned by generator/permittee)
- industrial residuals – under VPA program (similar to biosolids application)
- Virginia Department of Agriculture and Consumer Services (VDACS) certification for commercial marketing

Mr. Winter reviewed the typical limits and conditions to permits:

- application rate determined by Nutrient Management Plan (NMP) and is based on soil fertility, soil productivity, crop to be grown, and propensity of field to lose nutrients to surface and ground water
- includes restrictions on timing to ensure crop utilization of applied nutrients
- some NMPs must be approved by the Virginia Department of Conservation and Recreation (DCR)
- two concepts regarding metals limits: ceiling limitation not to be exceeded at any time and cumulative pollutant loading which limits the total amount applied to a field over its lifetime

- metals concentrations in many materials proposed for application are lower than found in some commercial fertilizers and are comparable to Class A biosolids (which may be marketed for consumer use)
- frequency of analysis is dependent on the amount applied; as little as once a year and as often as once a month

Mr. Winter said there are several options to demonstrate reduction of pathogens to meet Class B treatment standards. Those are:

- digestion (time and temperature requirements)
- air drying for three months
- composting
- pH adjustment

Another concern Mr. Winter reviewed is vector attraction (flies and mosquitoes). He said there are several ways to demonstrate the reduction of vector attraction:

- reduction of volatile solids
- dewatering
- digestion (time and temperature requirements)
- pH adjustment
- incorporation or injection into soil

Mr. Winter said that DEQ is required to provide notifications to localities and to properties adjacent to where the land application will take place. He said this process is one of the most heavily regulated and about 75 percent of the fields where land application is taking place are inspected. Some of the localities will hire additional monitors. The requirements are:

- 100-day notification to the locality
- 14-day notification to the locality and DEQ
- 24-hour notification to the locality and DEQ
- notification to the locality at sign posting

Signage requirements are:

- at least five business days before land application at site begins
- sign cannot be removed until at least 30 days after land application at site has ended

Mr. Winter said application can be made up to full agronomic nitrogen need for a one-year crop rotation period, once per three years. If the agronomic nitrogen need is greater than 50 percent, application more often than once in three years may be allowed with pre-approval by DCR.

Mr. Winter reviewed other contents of VPA permits:

- monitoring and reporting requirements
- special conditions pertaining to minimizing discharge to state waters except during 25-year / 24-hour storm events (setbacks/buffers, nutrient management, other site restrictions)
- boilerplate (emergency reporting, duration of permit, other standard conditions)

Mr. Winter concluded his presentation by reviewing other permit conditions:

- depth to water table
- depth to bedrock
- slopes greater than 15 percent
- snow-covered ground
- requirements for land-applier certification
- odor control plan
- transport

Mr. Winter thanked members for their time.

Mr. Crum asked Dr. Evanylo to begin his presentation.

Dr. Evanylo said that he began working on biosolids as a research topic about 40 years ago, at the beginning of his Masters degree. For the last 15 years, he has served on a national committee comprised of researchers from land grant universities across the country. He said this group continuously reviews and researches the topic for information on the benefits and concerns. He said most of his presentation today will focus on industrial residuals as he feels that's where most of the interest is for those attending the meeting today.

Dr. Evanylo provided information on biosolids production, usage, and disposal in the United States from 1998 through 2010. He said the benefits of land application are:

- nutrients
- root growth promoters
- soil structure improvement
- carbon sequestration

Dr. Evanylo noted that human health and environmental issues are the main concerns of citizens. He provided information on metal concentration in various fertilizer sources and how these compare with Part 503 Standards.

A listing of common bacteria, viruses, and parasites found naturally in wastewater was also provided. These are treated so that there are no detectable levels found in resulting Class B biosolids.

Dr. Evanylo also reviewed a listing of trace organic chemicals (TrOCs) that are common in everyday items for human and animal use. He said the levels of these TrOCs are higher in the products used than what would be found in Class B biosolids.

Dr. Evanylo provided a review of a research project he has been involved with for the past 20 years – the assessment of industrial residuals. He said this study is ongoing with Virginia Tech and cooperating state agencies:

- VDACS – labels and regulates fertilizers, liming products, soil amendments, potting soils, etc.
- DEQ – waste definition allows for industrial byproducts that are beneficially recycled to be excluded from “waste” designation and considered as a VDACS-registered soil amendment

A review was provided of the various types of industrial wastes: meat, vegetable, hard rock mining, and fly ash.

Dr. Evanylo presented a chart that depicted byproduct properties necessary to evaluate land application benefits and drawbacks as well as a chart that analyzed wood ash.

A brief review of the wastewater treatment process was provided.

Information was provided on the properties of poultry dissolved air floatation sludge and an analysis of papermill sludge. He noted that papermill residuals are tested by assessing nitrogen availability and growth promotion and phytotoxicity.

Dr. Evanylo summarized biosolids and industrial residuals uses as follows:

- benefits: inexpensive supply of nutrients and lime; carbon sequestration; potential environmental stress amelioration
- lower health and environmental risk from commonly land-applied industrial residuals than from biosolids

Mr. Crum introduced Del. Chris Peace, a member of the Virginia House of Delegates, representing the 97th District.

Del. Peace said he appreciates that RRPDC arranged for this discussion to take place. He thanked the Hanover and New Kent officials for their local leadership. Del. Peace said he also appreciates those citizens who have taken the time to voice their concerns regarding this topic.

Del. Peace said the issue has been brought forward by the request for land application in Hanover County by Synagro. He said he spoke with a member of the Hanover County Board of Supervisors who is a farmer to ask his opinion on land application of industrial residuals. Del. Peace said he was told that there are mixed feelings among farmers regarding biosolids and industrial residuals. Del. Peace was told that Hanover County

farmers do not use and never have used industrial sludge because of concerns regarding its processing and contents and that it's not pelletized.

Del. Peace acknowledged that biosolids are commonly used in the area, and there is not the same concern regarding biosolids as there is about industrial residuals.

Del. Peace said he has tried to reach out to all of the various partners and agencies to receive input from all aspects and opinions.

Del. Peace requested that DEQ delay the permitting process for Synagro until the legislature can further study the request. Del. Peace was told that the permitting process has been delayed already and EPA and notification requirements cannot allow additional delay.

Del. Peace said that during the process, he feels that there is consensus among all parties that at the very least, there should be a local monitoring process for industrial sludge. He said this monitoring process is in place for biosolids but not for industrial sludge.

The state Water Control Board has approved Synagro's permits with the exception of the one originating from Hanover County, which was previously withdrawn. There were two dissenting votes. He said the two dissenting votes, in his mind, validated the concerns that have been raised on safe application of the sludge.

Del. Peace said he understands that industrial sludge is a material that is commonly confused with biosolids. Biosolids are nutrient-rich organic materials resulting from the treatment of domestic sewage in a treatment facility and commonly used throughout the farming community. When domestic waste water is treated through treatment facilities, the resulting biosolids can be used and recycled, applied as fertilizer to improve and maintain productive soils and stimulate plant growth. Industrial sludge, even when treated to reduce pollutants, can still contain heavy materials and germs.

Del. Peace said he has introduced HB 1363 (Industrial waste; land applications unlawful in certain counties) which calls for a moratorium on the application of industrial sludge in the 97th District, specifically in the Counties of Hanover, King William, and New Kent. Del. Ware has asked to join as a patron. Del. Ware also has some legislation pending to address the issue, along with Del. Fowler.

HB 1363 – Industrial waste; land application unlawful in certain counties: This will make it unlawful to apply industrial wastes to land located in the County of Hanover, King William, or New Kent. The bill contains an emergency clause [permit is approved and application is imminent].

Del. Peace noted the bill is based on requests from the Hanover and New Kent Boards which have passed resolutions asking for the moratorium. King William's Board of Supervisors has also recently passed a resolution in support of the moratorium in addition to further study of industrial residuals/industrial sludge.

During the moratorium, Del. Peace said he hoped that DEQ will develop more technical standards and a regulatory scheme to specifically address industrial sludge. A regulatory scheme is in place for biosolids. He said he would also like to see additional hearings held in the affected localities to allow all residents to attend.

HB 1364 – Industrial wastes; fees for testing and monitoring of land application: Allows localities to adopt ordinances that provide for the testing and monitoring of the land application of industrial wastes. The bill requires the State Water Control Board (the Board) to adopt emergency regulations, requiring persons that land apply industrial wastes to collect a fee from the generator of the industrial wastes and remit the fee to the Department of Environmental Quality (DEQ). The fee cannot exceed the direct costs to localities of testing and monitoring the land application of industrial wastes. The bill requires the Board's regulations to include procedures for (i) collection of the fees by DEQ, (ii) deposit of the collected fees into the Sludge Management Fund (the Fund), and (iii) disbursements from the Fund to localities for the testing and monitoring of the industrial wastes.

Del. Peace said localities have let him know they would like to have tools in place to allow them to effectively monitor this land application as well as being mindful to provide adequate funds to the localities for such monitoring. This will address the localities' previous requests that legislators not pass unfunded mandates.

HB 1511 – Disclosure of industrial waste and sewer sludge on land: Requires the owner of land upon which industrial waste or sewage sludge has been stored or to which industrial waste or sewage sludge has been applied pursuant to a permit issued by the Department of Environmental Quality (DEQ) to disclose such storage or application to a prospective purchaser or lessee of the land. If the owner of the subject land fails to make the disclosure in writing, on a form developed by the Real Estate Board in consultation with DEQ, prior to acceptance of a contract for the sale or lease of the subject land, the prospective purchaser or lessee may institute an action to recover actual damages. The disclosure and remedy provisions of the bill are similar to those in the Virginia Residential Property Disclosure Act.

Del. Peace noted that Del. Lee Ware has introduced HB 1511. He said a pattern in proposed legislation is growing based on the concerns that have been brought forward. Del. Ware has also put forward HJ 506, which directs DEQ to study the long-term effects of storage and land application of industrial wastes and sewage sludge on public health, residential wells, and surface and ground water. Del. Peace said he felt HJ 506 could pass in conjunction with any of the above-mentioned legislation.

Del. Peace said he asked Ms. Lidia Epp to join him today in order to provide some additional information to members. He said she spoke during the public hearing held by the State Water Control Board. As a scientist, she may be able to bring forward additional facts that were not addressed by the other speakers this morning.

Ms. Epp said she is a resident of New Kent County. She is a molecular biologist and is the Lab Manager for the Molecular Core Facility at the College of William and Mary. Ms. Epp noted that she is not representing William and Mary this morning but wanted to state her credentials to let members know that she does have a scientific background.

Ms. Epp noted that the EPA rebranded industrial sludge to biosolids in the late 1980s. EPA had considered industrial sludge to be a hazmat item. Once the EPA rebranded industrial sludge to biosolids, it was no longer considered to be hazmat. Ms. Epp said none of the properties of the sludge changed; it was just renamed. She also noted that industrial sludge is now referred to as industrial residuals. She said she understands that biosolids are processed sludge.

In 1986, the US Congress banned ocean dumping. Until then, industrial sludge was dumped into the ocean. In 1988, Synagro was funded to take on the task of industrial sludge disposal. Ms. Epp said that the EPA funded a public relations campaign in 1991-1993 to change public attitudes regarding biosolids. In 1993, biosolids were rebranded to become natural fertilizer.

In 1993, the EPA Part 503 Rule was established dealing with biosolids disposal. Prior to 1993, there was evidence on the harm to public health from biosolids. Ms. Epp said she believes that science can be skewed to support industry that has been created to deal with sludge disposal.

Ms. Epp noted the Clean Water Act prohibits certain practices with regard to keeping water clean. She said there is no similar Act to keep soil clean. She believes that if there was a similar Act for clean soil, many of the current concerns regarding sludge would be moot.

Ms. Epp said bacteria can regrow even after sludge has been treated. She noted that under the 503 Rule, there are over 500 heavy metals that are not regulated and are present in sludge. The 503 Rule addresses only nine heavy metals plus phosphorus and nitrogen. The 503 Rule was based on accepted science from the 1980s and 1990s.

Ms. Epp provided an example of how dangerous quantities of heavy metals can differ from country to country. For cadmium, in Denmark only 1 part per million is considered acceptable. In Canada this rises to 20 parts per million and in the United States, it is 39 parts per million.

Farmland application of sludge is prohibited in Europe. Ms. Epp noted that China has more research on the ill effects of sludge to human health than the United States with regard to land applied sludge/biosolids.

Ms. Epp said that even though more information is available now, the United States still follows the 503 Rule that is based on outdated science. She said more research is needed on the effects of biosolids. She noted that when many elements degrade, they become even more toxic.

She recommended that monitoring should be expanded to five years following land application instead of the current one year.

Chairman Peterson asked Ms. Epp if she could begin to summarize her presentation in the interest of time.

Ms. Epp said the animal waste used years ago by farmers to fertilize their fields is a far cry from the industrial sludge/biosolids now being land applied to fields. She said she hopes that the information provided during today's meeting will help local leaders see that more research is needed on the topic. She thanked members for their time.

Del. Peace said he appreciated the RRPDC Board for allowing additional public comment. He said he would encourage members to do their own research and to learn more about the issue. He said he would also encourage members to speak with their constituents regarding their concerns. Del. Peace thanked members for their time.

Chairman Peterson thanked Del. Peace for taking time from his schedule to participate in today's meeting. He said that he would like to allow time for a few questions. However, in the interest of time, if there are members who need to leave but who have questions, these can be forwarded to Mr. Crum. Mr. Crum will then make sure the appropriate speaker can respond offline.

Ms. O'Bannon noted that both Mr. Grandstaff and Dr. Evanylo referenced the product Milorganite, which has been in use for about 100 years. She said this is Milwaukee organic nitrogen, Milwaukee's municipal waste, and she has used this on her own lawn. She asked if local biosolids can be packaged the same way.

Mr. Grandstaff said additional processing would be required to meet the Milwaukee standard. Dr. Evanylo added that the reason most localities do not pelletize their waste is due to cost. He said farmers do prefer this type of product.

Ms. Kelly-Wiecek said there seems to be a conflict as to whether industrial residuals or biosolids are better. She said with the trace materials found in biosolids, many are saying industrial residuals are better. The evidence is that these are not the same; however, they are still being treated as the same. As an elected official, she said it's important for her to know which is better and to be able to explain why both are treated the same.

Dr. Evanylo said the concentrations of human pathogens, trace organics, and heavy metals are lower in industrial sludges than in the biosolids that are allowed to be land applied. They are treated the same because some type of guidance is needed on how to assess the benefits and potential detriments of each product. Because they are both largely sludge generated products, both coming from a wastewater treatment plant and biological process, many of the matrix effects are nearly identical in industrial sludges as they are in biosolids. The same standards can be applied to both during studies and can assess them in the same manner.

Ms. Kelly-Wiecek thanked Mr. Winter for making a similar presentation in Hanover County. She said following that presentation, one of her constituents asked her what action can be taken if, during a site inspection, it is found that the application is not consistent with the permit.

Mr. Winter said if application is found not to be applied per the parameters of the permit, then corrective action is based on what's found at the scene. He said there is no universal answer. He said a warning notice of violation can be issued if necessary. With the number of fields that DEQ has inspected, very few violations and/or warning letters have been issued. Most enforcement action taken against the land appliers is typically due to improper storage that has led to an offsite impact. Or, loads may be lost on the highway and those are handled in conjunction with the Virginia State Police. He said the citizenry is very aware of the issue and will contact DEQ if violations are suspected. Mr. Winter said action will be taken but historically, this is an unlikely event.

Ms. Kelly-Wiecek asked if the inspectors do any onsite testing to ensure what is being applied is what was permitted. Mr. Winter said inspectors will find out where the product originated and DEQ can go back to the source to ensure the product is what was permitted. He said typically the inspectors do not sample unless there is a pollution issue that may have a water quality impact. Mr. Winter said that the DEQ relies heavily on self-reporting by those treatment facilities. He said inspectors go to the facilities once every one to three years. Discharge reports are accepted at face value. Mr. Winter said the compliance rate is very high.

Mr. Williams asked if staff would make today's presentations available to members. Mr. Crum said staff will be glad to send those out.

Mr. Williams asked Dr. Evanylo if he had stated he had been studying this issue for the last 20 years. Dr. Evanylo said he has been working with various industrial residuals and registering materials for VDACS since the early 1990s.

Mr. Williams asked if there are other researchers doing similar work. Dr. Evanylo said the national group he belongs to was created in the 1980s and this group assessed data that went into biosolids. He said this group contains researchers from land grant universities around the country, as well as the US EPA and DEA. The research has not stopped.

Mr. Williams asked if there is a consensus in the research. Dr. Evanylo said within his group there is a consensus. He said he can point to other research groups with regard to the biosolids issues which do not share the same views. Dr. Evanylo said that most of the consensus, however, is in line with what he and his group have found.

Mr. Williams asked how Virginia compares with other states with regard to land application of biosolids and industrial sludge.

Dr. Evanylo said with regard to biosolids, each state must follow either the 503 Rule or any program a state has developed on its own. In all cases, the minimum EPA standards are being used.

Mr. Glover said he appreciates the work done by Henrico County staff. He noted that the County's staff keeps up-to-date on all information and regulations and makes regular reports to the County's leadership. Mr. Glover said that the County's citizens seem to be very satisfied with how the County handles this issue. He said he feels very comfortable with what the County does with regard to biosolids and industrial residuals.

Mr. Tiller asked if the biosolids released by Henrico County are as clean as the treated water the County releases back into the James River.

Mr. Grandstaff said that Henrico County receives some of the materials from the New Kent County facility for further processing, along with some materials received from Hanover County. He said he would not compare clean water with semi-solid material that is essentially dirt and other micro-nutrients, metals, etc. Mr. Grandstaff said he feels it is important to understand that decisions are made based on science. If the science changes, then policies must also change. It is important for municipalities to meet standards set by the state and federal governments. The regulations are developed to protect human health and the environment. He said he didn't mean to avoid Mr. Tiller's question, but he felt that would be like comparing apples to oranges.

Chairman Peterson said he believed there may be time for one more question and then if the presenters are available following the adjournment of the meeting, perhaps additional questions could be asked at that time.

Mr. Alvarez thanked Del. Peace for adding Goochland County to his bill. He noted that Goochland County wrote a letter in opposition to the Synagro permit and requested more study on the issue. He said DEQ monitors buffers but not what is in the material being applied. Mr. Alvarez said when biosolids are applied, there is an associated odor. Biosolids are applied by the farmers, who are not experts on biosolids.

Mr. Alvarez asked for an example of a controversial permit. Mr. Winter said DEQ looks for three things during the permitting process. The first thing is the number of legitimate commenters during the public comment period. The second thing is there must be an issue being raised that is pertinent to the permit; are the comments factually accurate; are the comments relevant to the topic being discussed. The last thing to consider is if relief can be given to the commenter in a manner that will not impact the applicant's rights or cause a violation to state law. He said during the Synagro comment period, some comments received were demonstrably false or had no relevance to what was being applied. DEQ needs to be able to know if it has the authority to modify the permit in a way that does not deny due process to the applicant. Many of the comments received were in regard to the VPA program. He said these types of issues cannot be addressed in one permit. The regulation would need to be changed by law. DEQ enforces the current permitting requirements as stated in existing or future laws.

Mr. C. Peterson asked Mr. Winter about his reference to ceilings. Mr. Winter said a ceiling concentration is material, for a given application event, that has too much of a given metal to warrant application even once. Pollutant cumulative loading is a concentration below the ceiling concentration. Continued application at that rate would lead to a concentration that would make application on the field ineligible. When the application package is received or when the monitoring reports are reviewed, DEQ evaluates these. He gave the example of taking a daily vitamin versus taking a mega dose of vitamins.

Mr. C. Peterson asked what determines the lifetime of a field. Mr. Winter said when any sample is over the cumulative loading samples, a limit is set on how much more the field can take. DEQ will monitor this until that limit is reached.

Dr. Evanylo said when the pretreatment requirements for biosolids were added in the 1980s, the level of metals dropped due to a requirement that industrial wastes could not be applied. He said that was the reason the number of metals dropped; not because EPA changed the numbers. Since the pretreatment was required, the number of metals continues to decline.

Ms. Jaeckle asked which materials have been denied as industrial waste. Dr. Evanylo said lithium has been recommended as one material not to be considered.

Chairman Peterson said he is going to recommend that the RRPDC meeting conclude due to the time. He said if the presenters are available to stay, then members can continue to ask questions. If members cannot stay and have questions, they can forward those to Mr. Crum, who will pass them along to the appropriate speaker for a reply.

Chairman Peterson thanked all of the presenters for their time.

V. OTHER BUSINESS

Chairman Peterson asked if there was any other business or any announcements. There was no other business identified.

VI. ADJOURNMENT

As there was no additional business to bring before the Board, Chairman Peterson adjourned the meeting at approximately 11:30 a.m.

Robert A. Crum, Jr.
Executive Director

Ken Peterson
Chairman