

VPA PERMIT PROGRAM FACT SHEET

This document gives pertinent information concerning the issuance of the VPA permit listed below. The permit authorizes the land application of Biosolids/WTP Residuals on agricultural land without a discharge to surface waters, in accordance with VPA Regulation 9VAC25-32.

1. Permittee Name: Synagro Central, LLC. 10647 Tidewater Trail Champlain, VA 22438	
2. VPA Permit Name: Synagro Central, LLC. - Madison County VPA Permit No: VPA00076 Expiration Date: June 29, 2026	
3. SIC Code(s): 0711 - Soil Preparation Services	
4. Facility Contact: Steve McMahan Senior Technical Services Director 540-443-2170 smcmahan@synagro.com	
5. Permit Application Information: Initial issuance of a Virginia Pollution Abatement permit to authorize the land application of biosolids and WTP residuals.	
Initial Permit Application submitted by:	Synagro Central, LLC.
Application receipt date:	November 18, 2013
Additional information requested:	May 8, 2014; November 25, 2014, March 26, 2015
Additional information received:	January 13, 2014; February 26, 2014; March 5, 2014; May 8, 2014; November 26, 2014; October 19, 2015
Application complete date:	November 6, 2015

6. Permit Processing Information:		
DEQ Regional Office:	Northern	
Site Inspection performed by:	John Thompson, Joe Garner, Beth Biller	
Date of site inspections:	February 11, 2014, November 5, 2015	
Date of public meeting for permit application*:	January 20, 2016	
Permit drafted by:	John Thompson	
Date permit drafted:	January 11, 2016	
Draft permit reviewed by:	Ed Stuart	
Date draft permit reviewed:	January 19, 2016	
Dates of draft permit public comment period	From:	January 28, 2016
	To:	February 29, 2016

*As required

7. Permit Characterization:		
Permit Action	Facility	Permit Type
<input checked="" type="checkbox"/> Issuance	<input checked="" type="checkbox"/> Existing facility	<input checked="" type="checkbox"/> Biosolids land application
<input type="checkbox"/> Reissuance	<input type="checkbox"/> Proposed facility	<input type="checkbox"/> Biosolids Composting
<input type="checkbox"/> Revocation and reissuance	<input type="checkbox"/> Treatment Works	<input type="checkbox"/> Biosolids distribution and marketing
<input type="checkbox"/> Owner modification	<input type="checkbox"/> Biosolids Routine Storage	<input type="checkbox"/> Land application/storage of animal waste
<input type="checkbox"/> Staff initiated modification	<input type="checkbox"/> N/A	<input type="checkbox"/> Land treatment of wastewater
<input type="checkbox"/> Interim authorization	Type of Facility	<input type="checkbox"/> Industrial
<input type="checkbox"/> Enforcement action	<input type="checkbox"/> Municipal	<input type="checkbox"/> Municipal
<input type="checkbox"/> Revised VPA Permit Regulations	<input type="checkbox"/> Industrial	<input type="checkbox"/> Land application of industrial sludge
	Ownership	<input checked="" type="checkbox"/> Land application of water plant residuals
	<input type="checkbox"/> Public	<input type="checkbox"/> Land application of septage*
	<input checked="" type="checkbox"/> Private	<input type="checkbox"/> Water reclamation and reuse
	<input type="checkbox"/> Federal	
	<input type="checkbox"/> State	

* Pump and haul of wastewater other than sewage. Pump and haul of sewage is regulated by the Virginia Department of Health in accordance with the Sewage Handling and Disposal Regulations (12VAC5-610).

8. Annual permit maintenance fee: \$100.00

9. Licensed Operator Requirements: Certified Land Appliers required onsite during land application activities

10. Reliability Class: N/A

11. Pollution Management Activity Description:

Land application of Biosolids and WTP Residuals to agricultural sites, as identified in the permit application. Application rates shall be in accordance with site specific nutrient management plans.

Madison County		
<i>Permit Action</i>	<i># of Sites</i>	<i>TOTAL GROSS ACRES:</i>
<i>Permit Issuance 6/30/16</i>	8	2,024.5
TOTAL :	8	2,024.5

12. Location Description:

Site maps were provided with the permit application and are an attachment to the permit. Part I.K. of the permit lists the description of each land application site.

13. Compliance Schedules.

<i>EVENT:</i>	<i>DUE BY:</i>
<i>Odor Control Plan</i>	<i>September 28, 2016</i>
<i>BSMP</i>	<i>September 28, 2016</i>

14. Public Notice Information per 9VAC 25-32-140.B:

All pertinent information is on file, and may be inspected by contacting John Thompson at: Telephone No. (540) 223-6039; john.thompson@deq.virginia.gov.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

The draft permit public notice was published in the *Madison Eagle* on January 28, 2016 and February 4, 2016. The public comment period ran from January 28, 2016 to February 29, 2016. One hundred and thirty-two (132) comments were received. One hundred and twenty-eight (128) of the comments requested a public hearing. The DEQ Deputy Director authorized the convening of a public hearing on March 30, 2016.

The public hearing comment period was published in the *Madison Eagle* on April 21, 2016. The public comment period ran from April 21, 2016 to June 17, 2016. Twenty (20) written comments were received. A public hearing was held at Madison County High School on June 8, 2016. Twelve (12) citizens provided oral comments. Nine (9) citizens that provided oral comments also submitted written comments to supplement their oral comments.

Comments received during both public comment periods related to the following:

- Protection of surface waters;
- Protection of groundwater;
- Biosolids composition and protection of public health and the environment;
- Livestock, wildlife, and unrestrained domestic animal well-being;
- Landowner consent;

- Odor;
- Insufficient laws, regulations and permits;
- Property values, truck traffic, and Quality of life in Madison and Orange Counties;
- Background water and soils monitoring;
- Permit applicant's compliance history;
- Documents not made available for review;
- Application rates;
- Medically sensitive individuals;
- Sampling of biosolids and soils;
- Biosolids use in other counties;
- Public hearing procedures; and
- Support of permit issuance and biosolids use.

The Virginia Department of Health – Office of Drinking Water (VDH-ODW) provided recommendations affecting the MA10 and MA15 sites. The recommendations were:

- Increase setback from 100 feet to 200 feet from Rapidan River for MA15-07 and MA15-08;
- Provide notification to the Town of Orange when biosolids application will occur on sites that are upstream from the Town of Orange WTP raw water intake; and
- Provide notification to the Town of Madison and Rapidan Service Authority (RSA) when biosolids application will occur on sites that are upstream from the Town of Madison WTP raw water intake.

The draft permit was modified from its original draft to incorporate the VDH-ODW recommendations.

The State Water Control Board voted unanimously to approve the draft permit to include the VDH-ODW recommendations on June 27, 2016.

15. Basis for Limits and Monitoring Requirements.

A. Basis for Limitations and Monitoring Requirements in Part I.A.

Part I.A.1.a. Metals Limitations

Monitoring Type: Biosolids and Water Treatment Plant (WTP) Residuals (Biosolids/WTP Residuals) Monitoring

Monitoring Location: Final biosolids and/or WTP residuals product after all treatment, prior to land application

PARAMETER ⁽¹⁾	BASIS FOR LIMITS	LIMITATIONS		MONITORING REQUIREMENTS	
		Monthly Average ⁽²⁾	Maximum ⁽²⁾	Frequency	Sample Type
Total Arsenic (mg/kg)	1,2,3,4,5,7	41	75	5	Composite
Total Cadmium (mg/kg)	1,2,3,4,5,7	39	85	5	Composite
Total Copper (mg/kg)	1,2,3,4,5,7	1,500	4,300	5	Composite
Total Lead (mg/kg)	1,2,3,4,5,7	300	840	5	Composite
Total Mercury (mg/kg)	1,2,3,4,5,7	17	57	5	Composite
Total Molybdenum (mg/kg)	1,2,3,4,5,7	NA ⁽³⁾	75	5	Composite
Total Nickel (mg/kg)	1,2,3,4,5,7	420	420	5	Composite
Total Selenium (mg/kg)	1,2,3,4,5,7	100	100	5	Composite
Total Zinc (mg/kg)	1,2,3,4,5,7	2,800	7,500	5	Composite
Total Aluminum (mg/kg) ⁽⁴⁾	6	NL	NA	1/Year	Composite

NL = No Limitation, Monitor and Report

NA = Not Applicable

mg/kg = milligrams/kilogram

- (1) All parameters are subject to pollutant concentrations (PC), cumulative pollutant loading rates (CPLR), and ceiling limitations. PC biosolids contain the parameters identified above at concentrations below the monthly average specified in Part I.A.1. CPLR biosolids contain the parameters identified above at concentrations above the monthly average and each sample must be below the ceiling limitations specified in Part I.A.1. If the concentration of any of these parameters in biosolids from any source exceeds the monthly average concentration, then the biosolids from the source are subject to CPLR rules (Part I.A.1.b., Part I.C.3., and Part I.I.16.). [Basis 1 & 7]
- (2) All limits and criteria are expressed on a dry weight basis. [Basis 1]
- (3) The monthly average concentration for molybdenum is currently under study by USEPA. Research suggests that a monthly average Molybdenum concentration below 40 mg/kg may be appropriate to reduce the risk of copper deficiency in grazing animals. [Basis 4]
- (4) Aluminum monitoring is required for WTP residuals only. All WTP residuals generated at a WTP that uses any aluminum based coagulant are subject to aluminum monitoring and the tracking of the aluminum loading at each field on which WTP residuals are applied. [Basis 6]

Basis for Limitations

1. 9VAC25-32-356.
2. 9VAC25-32-356, Table 1
3. 9VAC25-32-356, Table 2
4. 9VAC25-32-356, Table 4
5. 9VAC25-32-358.A.1, Table 1
6. Guidance Memorandum (GM) No. 95-002
7. 9VAC25-32-313.C. & F.

Part I.A.1.b. Site Specific Metals Loading Limitations

Monitoring Type: Biosolids/WTP Residuals Monitoring (only applicable to biosolids subject to Cumulative Pollutant Loading Rates (CPLRs))

Monitoring Location: Calculated for each land application field where biosolids subject to CPLRs or WTP residuals are land applied

PARAMETER	BASIS FOR LIMITS	LIMITATIONS CPLR ⁽²⁾		MONITORING REQUIREMENTS	
		(kg/ha) ⁽³⁾	(lb/A) ⁽³⁾	Frequency	Sample Type
Total Arsenic	1	41	36	Each Application	Calculated
Total Cadmium	1	39	35	Each Application	Calculated
Total Copper	1	1,500	1,340	Each Application	Calculated
Total Lead	1	300	270	Each Application	Calculated
Total Mercury	1	17	16	Each Application	Calculated
Total Molybdenum	1	NL ⁽⁴⁾	NL ⁽⁴⁾	Each Application	Calculated
Total Nickel	1	420	375	Each Application	Calculated
Total Selenium	1	100	89	Each Application	Calculated
Total Zinc	1	2,800	2,500	Each Application	Calculated
Total Aluminum ⁽¹⁾	2	4,570	4,113	Each Application	Calculated

kg/ha = kilogram/hectare

lb/A = pounds/Acre

- (1) All sites that receive WTP residuals containing aluminum are subject to the tracking of aluminum loading, regardless of concentration of aluminum in the residuals. [Basis 3]
- (2) The CPLR is the maximum cumulative application of trace elements that can be applied to soils used for crop production. The maximum cumulative application rate is limited for all ranges of cation exchange capacity due to soil background pH in Virginia of less than 6.5 s.u. and lack of regulatory controls of soil pH adjustment after biosolids application ceases. [Basis 4 & 5]
- (3) All limits and criteria are expressed on a dry weight basis in kg/ha and lb/A. [Basis 6]
- (4) The maximum cumulative application is currently under study by USEPA. Research suggests that for Molybdenum a cumulative pollutant loading rate below 40 kg/ha may be appropriate to reduce the risk of copper deficiency in grazing animals. [Basis 1]

Basis for Limitations

1. 9VAC25-32-356, Table 3
2. EPA Process Design Manual - Land Treatment of Municipal Wastewater (EPA 625/1-81-013)
3. GM No. 95-002
4. 9VAC25-32-313.C. & F.
5. 9VAC25-32-356.B.
6. 9VAC25-32-356.A.

Part I.A.1.c. Pathogen Reduction Requirements**Monitoring Type:** Biosolids Monitoring**Monitoring Location:** Final biosolids product after all treatment, prior to land application

BASIS FOR LIMITS	PATHOGEN REDUCTION ALTERNATIVE	PROCESS TO SIGNIFICANTLY REDUCE PATHOGENS (PSRP) OPTION	CLASS B PATHOGEN REDUCTION TREATMENT STANDARDS	MONITORING REQUIREMENTS
1,2,3,4,5	1	NA	Fecal coliform monitoring: <2,000,000 MPN/gm or <2,000,000 CFU/gm, geometric mean of seven samples. (9VAC25-32-675.B.2.)	4 ⁽¹⁾
1,2,3,4,5	2	1	PSRP: Aerobic Digestion: Sludge mean cell residence time from 40 days at 20°C to 60 days at 15°C. (9VAC25-32-675.D.1.)	(2)
1,2,3,4,5	2	2	PSRP: Air dry in a drying bed for three months. Ambient average daily temperature must be above 0°C for two of the three months. (9VAC25-32-675.D.2.)	(2)
1,2,3,4,5	2	3	PSRP: Anaerobic digestion for a mean cell residence time between 15 days at 35°C - 55°C up to 60 days at 20°C. (9VAC25-32-675.D.3.)	(2)
1,2,3,4,5	2	4	PSRP: Composting at 40°C or above for five or more days, maintaining > 55°C for four consecutive hours during the five days. (9VAC25-32-675.D.4.)	(2)
1,2,3,4,5	2	5	PSRP: Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 s.u. after two hours of contact. (9VAC25-32-675.D.5.)	(2)
1,2,3,4,5	3	PROCESS AS APPROVED	Process equivalent to PSRP: PROCESS AS APPROVED (9VAC25-32-675.B.4.)	(2)

(1) Between sampling events, operating records must demonstrate that the Wastewater Treatment Plant (WWTP) is operating at a performance level known to meet pathogen reduction standards. [Basis 1 & 5]

(2) Process monitoring must be sufficient to demonstrate compliance with PSRP treatment requirements. [Basis 1-3 & 5]

Basis for Limitations

1. 9VAC25-32-357.A. – B.
2. 9VAC25-32-675.B.
3. 9VAC25-32-675.D.
4. 9VAC25-32-358.A.1, Table 1

5. Environmental Regulations and Technology - Control of Pathogens and Vector Attraction Reduction in Sewage Sludge (EPA/625/R-92/013)

Part I.A.1.d. Vector Attraction Reduction (VAR) Requirements

Monitoring Type: Biosolids Monitoring

Monitoring Location: Final biosolids product after all treatment, prior to land application

BASIS FOR LIMITS	VAR OPTION	VECTOR ATTRACTION REDUCTION TREATMENT STANDARD	MONITORING REQUIREMENTS
1,2,3,4	1	38% Reduction of volatile solids by digestion. (9VAC25-32-685.B.1.)	3 ⁽¹⁾
1,2,3,4	2	When 38% reduction is not achieved by anaerobic digestion, 40 day bench study at temperatures between 30°C and 37°C to demonstrate further reduction of volatile solids <17%. (9VAC25-32-685.B.2.)	3 ⁽¹⁾
1,2,3,4	3	When 38% reduction is not achieved by aerobic digestion, 30 day bench study at 20°C to demonstrate further reduction of volatile solids <15%. (9VAC25-32-685.B.3.)	3 ⁽¹⁾
1,2,3,4	4	Specific Oxygen Uptake Rate of ≤ 1.5 mg O ₂ /hour/gram total solids at 20°C (aerobically processes sludge). (9VAC25-32-685.B.4.)	3 ⁽¹⁾
1,2,3,4	5	14 day aerobic process, temperatures above 40°C with an average temperature of >45°C. (9VAC25-32-685.B.5.)	(2)
1,2,3,4	6	Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 s.u. after two hours of contact and maintain a pH of 11.5 s.u. or higher for an additional 22 hours. (9VAC25-32-685.B.6.)	(2)
1,2,3,4	7	Where biosolids do not contain unstabilized solids from primary wastewater treatment, the percent solids of the biosolids shall be ≥ 75%. (9VAC25-32-685.B.7.)	3 ⁽¹⁾
1,2,3,4	8	Where biosolids contain unstabilized solids from primary wastewater treatment, the percent solids of the biosolids shall be ≥ 90%. (9VAC25-32-685.B.8.)	3 ⁽¹⁾
1,2,3,4	9	Sewage sludge shall be injected below the surface of the land. (9VAC25-32-685.B.9.)	NA
1,2,3,4	10	Sewage sludge land applied shall be incorporated into the soil within six hours after application. (9VAC25-32-685.B.10.)	NA

⁽¹⁾ Between sampling events, operating records must demonstrate that the WWTP is operating at a performance level known to meet the VAR standards. [Basis 1-4]

⁽²⁾ Process monitoring must be sufficient to demonstrate compliance with VAR treatment requirements. [Basis 1-4]

Basis for Limitations

- 9VAC25-32-357.A. & D.
- 9VAC25-32-685.
- 9VAC25-32-358.A.1, Table 1
- Environmental Regulations and Technology - Control of Pathogens and Vector Attraction Reduction in Sewage Sludge (EPA/625/R-92/013)

Part I.A.1.e. Biosolids Characteristics**Monitoring Type:** Biosolids/WTP Residuals Monitoring**Monitoring Location:** Final Biosolids and/or WTP Residuals product after all treatment, prior to land application

PARAMETERS	LIMITATIONS		MONITORING	
	Monthly Average	Minimum and Maximum	Frequency	Sample Type
Percent Solids (%)	NL	NA	2	Composite
Volatile Solids (%)	NL	NA	2	Composite
Total Kjeldahl Nitrogen (mg/kg) ⁽¹⁾	NL	NA	2	Composite
Ammonium Nitrogen (mg/kg) ⁽¹⁾	NL	NA	2	Composite
Nitrate Nitrogen (mg/kg) ⁽¹⁾	NL	NA	2	Composite
Total Phosphorus (mg/kg) ⁽¹⁾	NL	NA	2	Composite
Total Potassium (mg/kg) ⁽¹⁾	NL	NA	2	Composite
pH (s.u.)	NA	NL	2	Composite
Alkalinity as CaCO ₃ (mg/kg) (If lime by weight is less than 10%)	NL	NA	2	Composite
CCE as CaCO ₃ (%) (If lime by weight is 10% or more)	NL	NA	2	Composite

CCE = Calcium Carbonate Equivalent

⁽¹⁾ Expressed on a dry weight basis. [Basis 1]**Basis for Limitations**

1. 9VAC25-32-356.A.
2. 9VAC25-32-358.A.1, Table 1

Part I.A.1.f. Nutrient Loading Rates**Monitoring Type:** Biosolids/WTP Residuals Monitoring**Monitoring Location:** Nutrient loading rates shall be calculated for each source of Biosolids and/or WTP Residuals land applied and each application of Biosolids and/or WTP Residuals to an application

PARAMETERS	LIMITATIONS				MONITORING	
	Concentration (lb/Dry Ton)	Field Application Rate	12 Month Field Loading	NMP Application Rate	Frequency	Sample Type
Biosolids/Residuals (Dry/Tons/A)	NA	(1)	(1)	(1)	Each application	Calculated
Plant Available Nitrogen	NL	(1)	(1)	(1)	Each application	Calculated
Phosphate (P ₂ O ₅) (lb/A)	NL	(1)	(1)	(1)	Each application	Calculated
K ₂ O (lb/A)	NL	(2)	(2)	(3)	(2),(3)	Calculated
CaCO ₃ (lb/A)	NL	(1),(4)	(4)	(5)	(4),(5)	Calculated

- (1) The field application rate and 12 month field loading shall not exceed the application rate specified in the nutrient management plan (NMP) for the application method used.
- (2) Report the amount of K₂O provided by the biosolids/residuals and supplemental K₂O applied for each application where the soil test K is < 38 ppm Mehlich I.
- (3) Report the K₂O application rate recommended in the NMP for each application where the soil test K is < 38 ppm Mehlich I.
- (4) Report the amount of CaCO₃ provided by the biosolids/residuals and supplemental CaCO₃ applied for each application where the soil test pH is < 5.5 s.u.
- (5) Report the CaCO₃ application rate recommended in the NMP for each application where the soil test pH is < 5.5 s.u.

Basis for Limitations

- 9VAC25-32-560.B.3.a.
- 9VAC25-32-100.B.3.a.
- 9VAC25-32-410.

Part 1.A.2 Soil**Monitoring Type:** Soils Monitoring**Monitoring Location:** All land application sites prior to land application

PARAMETER ^{(1),(2)}	BASIS FOR LIMITS	LIMITATIONS ^{(3),(4)}	MONITORING REQUIREMENTS	
			Frequency ⁽⁵⁾	Sample
Soil pH (s.u.)	1,2,3	NL	Prior to Biosolids Application ***	Composite
Available Phosphorus (Mehlich I - P)* (ppm)	1,2	NL	Prior to Biosolids Application	Composite
Extractable Potassium (Mehlich I - K)** (ppm)	1,2	NL	Prior to Biosolids Application	Composite
Extractable Calcium (mg/100g)	1,2	NL	Prior to Biosolids Application	Composite
Extractable Magnesium (mg/100g)	1,2	NL	Prior to Biosolids Application	Composite
Zinc (mg/kg)	1,2	NL	Prior to Biosolids Application	Composite
Manganese (mg/kg)	1,2	NL	Prior to Biosolids Application	Composite

ppm = parts per million

mg/100g = milligrams/100grams

* Available Phosphorus shall be analyzed using Mehlich I or Mehlich III analytical procedure. If sample is analyzed using Mehlich III, results shall be converted to Mehlich I for reporting purposes.

** Extractable Potassium shall be analyzed using Mehlich I analytical procedure or equivalent. If sample is analyzed using an equivalent procedure, results shall be converted to Mehlich I for reporting purposes.

*** For biosolids with cadmium concentration greater than or equal to 21 mg/kg the soil pH sample must be less than one year old.

- (1) Soil pH, available phosphorus, and extractable potassium monitoring results shall be included in the monthly report as required in Part I.B.1.a.
- (2) Soil samples shall be collected and analyzed in accordance with regulations promulgated under § 10.1-104.2 of the Code of Virginia and as outlined in the Biosolids Management Plan (BSMP).
- (3) All parameters except for pH shall be monitored on a dry weight basis.
- (4) Results of the soil monitoring specified above shall be used to develop the NMP in accordance with Part I.D.2.
- (5) No sample analysis used to determine application rates shall be more than three years old at the time of the biosolids land application.

Basis for Limitations

1. 9VAC25-32-460.A. – C, Table 1
2. 9VAC25-32-560.B.2.e.
3. 9VAC25-32-560.B.2.c.

Part 1.A.3 Frequency of Monitoring

Monitoring Type: Biosolids

Monitoring Location: Generator Facility

AMOUNT OF BIOSOLIDS ⁽¹⁾ (dry tons per 365-day period)	FREQUENCY*
Greater than zero but less than 320	Once per year
Equal to or greater than 320 but less than 1,653	Once per quarter (four times per year)
Equal to or greater than 1,653 but less than 16,535	Once per 60 days (six times per year)
Equal to or greater than 16,535	Per month (12 times per year)
Note: Either the amount of bulk biosolids applied to the land or the amount of sewage sludge received by a person who prepares biosolids that is sold or given away in a bag or other container for application to the land (dry weight basis).	

*Frequency of sampling biosolids from each generator is based on the amount of biosolids produced by that generator that is land applied. WTP residuals shall be monitored once per year.

Basis for Limitations

1. 9VAC25-32-358.A. – B, Table 1.
2. GM No. 95-002

B. Basis for Special Conditions

Tabulated below are the special condition sections of the permit, with the Basis for each of the permit special conditions.

Special Condition	Description and Basis for Special Condition
Part I.B.1.	Monthly Reporting: 9VAC25-32-360.A. and Fee Regulation 9VAC25-20-147.B. requires submittal of a report by the 15 th of the month following the month in which land application occurred. 9VAC25-32-100.B.2. provides for DEQ to establish the reporting frequency based on the pollutant management activity.
Part I.B.1.a.	Biosolids/WTP Residuals Monitoring Data: 9VAC25-32-80.I. states that monitoring results shall be reported at the intervals specified in the applicable VPA permit in a format acceptable to the board. 9VAC25-32-100.B.1. – 2. provides for the VPA permit to require monitoring at a frequency sufficient to yield data representative of the activity and report at a frequency based on the pollutant management activity.
Part I.B.1.b.	Generator NANI: 9VAC25-32-313.G. requires the generator of biosolids who provides biosolids to a land applier, to give notice and necessary information to the land applier.
Part I.B.1.c.	Monthly Activity Report: 9VAC25-32-360.A. and Fee Regulation 9VAC25-20-147.B. requires submittal of a report by the 15 th of the month following the month in which land application occurred. Specific information to be provided is identified in 9VAC25-20-147.A. – B.
Part I.B.1.d.	Electronic Submittal Attestation Statement: § 59.1-479 – 498, the Uniform Electronic Transactions Act provides for submission of paperwork electronically and the use of electronic signatures. No laws or regulations require hard copy submittal of original signatures in the VPA

	program.
Part I.B.2.	Land Application Fee: § 62.1-44.19.3.P. requires that a fee be charged to the generator of biosolids to be land applied in Virginia. The fee of \$7.50/dry ton of biosolids applied in the Commonwealth of Virginia is established by the Fee Regulation 9VAC25-20-146. and 9VAC25-20-40.A.3. Exemptions to the fee are provided in 9VAC25-20-50.C. 9VAC25-20-60.D. establishes the due date.
Part I.B.3.	Annual Report: 9VAC25-32-360.B. requires the submittal of an annual report postmarked by February 19 th for the previous year. 9VAC25-32-100.B.3. provides for the VPA permit to require monitoring the volume of biosolids and other measurements as appropriate. 9VAC25-32-360.C. requires reports be maintained verifying that sludge treatment for pathogen and vector attraction reduction be maintained by the generator and owner (of the permit). 9VAC25-32-80.G. requires the permittee to submit information requested by the board, within a reasonable time, to determine compliance with the permit.
Part I.C.1.	Records Retention: 9VAC25-32-80.H.2. specifies that all records of biosolids activities, monitoring and reporting shall be maintained for at least five years.
Part I.C.2.	Class B/PC Biosolids Record Keeping: 9VAC25-32-359. provides specific recordkeeping requirements for PC and CPLR biosolids.
Part I.C.3.	Class B/CPLR Biosolids Record Keeping: 9VAC25-32-359. provides specific recordkeeping requirements for PC and CPLR biosolids.
Part I.D.1.	Biosolids Management Plan (BSMP): 9VAC25-32-410. requires the permit holder to maintain and implement a BSMP consisting of permit application, NMPs and O&M manual and states that the BSMP is an enforceable part of the permit.
Part I.D.2.	Nutrient Management Plan (NMP) Requirement: § 62.1-44.19.3.C.8. requires that a NMP be developed by a person certified in accordance with § 10.1-104.2 for each biosolids land application site, prior to application of biosolids at the site. The statute also establishes conditions where the NMP must be approved by the Department of Conservation and Recreation prior to submittal at the time of permit application. 9VAC25-32-410.C.2. states that if conditions at the site change so that it meets one or more special conditions, the NMP will be approved prior to application at the site. 9VAC25-32-410.C.2, with which all biosolids operations must comply, requires that the NMP be submitted to the farmer/operator of the site, the Department of Conservation and Recreation, and the local government, unless requested in writing to not receive the NMP. 9VAC25-32-410.C.5, Table 1 requires the NMP to be approved by DCR prior to application based on soil phosphorus levels (Mehlich I).
Part I.D.3.	Operation and Maintenance (O&M) Manual Requirement: 9VAC25-32-410.D. and 9VAC25-790-260 – 300. identify minimum requirements to be included in an O&M Manual. Additional requirements are included in the BSMP 9VAC25-32-60.F.3.
Part I.D.4.	Odor Control Plan (OCP) Requirement: 9VAC25-32.60.F.1. requires Generator's OCP and minimum content. 9VAC25-32-60.F.5.c. requires Land Applier's OCP and minimum content.

Part I.D.5.	Permittee Source List - Biosolids/WTP Residuals: 9VAC25-32-305.D. states <i>no person shall land apply, market, or distribute biosolids in Virginia unless the biosolids source has been approved by the board.</i> 9VAC25-32-60.F.1. requires that a list of sources that the permittee proposes to land apply in the permit application, which is part of the BSMP. Water Control Law and the VPA Permit Regulation do not require a permit modification to add a new source; therefore a source that is approved may be added to the Permittee Source List with administrative authorization. A source not previously or currently approved, must obtain approval before it can be land applied under a VPA permit.
Part I.E.1.	100 Day Notification: 9VAC25-32-515.A.1. requires written notification to the chief executive officer (CEO) or designee for the locality 100 days prior to the initial land application at a specific site and clarifies that the notice may be satisfied by DEQ’s notice of the permit application, if necessary site information was provided in that notification.
Part I.E.2.	14 Day Notification: § 62.1-44.19.3.L. and 9VAC25-32-515.A.2. requires written notification to the department and the CEO or designee for the locality at least 14 days prior to land application at a specific site.
Part I.E.3.	Sign Posting: 9VAC25-32-515.B.1. requires a sign be posted at a land application site at least five business days prior to delivery of biosolids at the site and maintained on site until five business days after application is complete; the sign will not be removed until 30 days after land application is complete. 9VAC25-32-515.B.1.a. – b. addresses placement of the signs. 9VAC25-32-515.B.3. – 4. specifies construction, content, and maintenance of the sign.
Part I.E.4.	Notification of Sign Posting: 9VAC25-32-515.B.2. requires written notification to DEQ and the CEO or designee for the locality within 24 hours of posting, identifying where the signs have been posted, and identifies information required in the notice.
Part I.E.5.	24 Hour Notification: 9VAC25-32-515.A.3. requires written notice to DEQ and the CEO or designee for the locality no more than 24 hours prior to commencing activity at a site, including delivery. Include the source of material and only sites where land application activities or staging will commence within 24 hours.
Part I.E.6.	Site Operator Notification and Information: 9VAC25-32-313.I. states <i>“The person who applies bulk biosolids to the land shall provide the owner or lease holder of the land on which the bulk biosolids is applied notice and necessary information to comply with the requirements in this article.”</i>
Part I.E.7.	Town of Orange Locality Notification: This requirement was recommended by the Virginia Department of Health during the draft permit public hearing comment period. 9VAC25-32-160. Indicates that if during the comment period any other state agency with jurisdiction over fish, wildlife, or public health advises the department in writing that the imposition of specified conditions upon the VPA permit is necessary to avoid substantial impairment of human health or of fish, shellfish, or wildlife resources, the board shall consider the inclusion of the specified conditions in the VPA permit. 9VAC25-32-315. Indicates that on a case-by-case basis, the board may impose requirements for the use of biosolids or the disposal of sewage sludge in addition to or more stringent than the requirements in this part when necessary to protect human health and the environment from any adverse effect of a pollutant in the biosolids or sewage sludge.
Part I.E.8.	Town of Madison and Rapidan Service Authority Locality Notification: This requirement was recommended by the Virginia Department of Health during the draft permit public hearing comment period. 9VAC25-32-160. Indicates that if during the comment period any other state

	agency with jurisdiction over fish, wildlife, or public health advises the department in writing that the imposition of specified conditions upon the VPA permit is necessary to avoid substantial impairment of human health or of fish, shellfish, or wildlife resources, the board shall consider the inclusion of the specified conditions in the VPA permit. 9VAC25-32-315. Indicates that on a case-by-case basis, the board may impose requirements for the use of biosolids or the disposal of sewage sludge in addition to or more stringent than the requirements in this part when necessary to protect human health and the environment from any adverse effect of a pollutant in the biosolids or sewage sludge.
Part I.F.1. – 6.	Transport requirements: 9VAC25-32-540.A. – E. identifies requirements for transport routes, vehicles, prevention of drag-out and track-out, clean-up of such drag-out and track-out and clean-up and reporting of spills.
Part I.G.1. – 11.	Staging: 9VAC25-32-545.A. – B. defines staging and provides procedural requirements for staging up to seven days and daily inspections by certified land applier; procedural and notification requirements to be implemented if biosolids cannot be applied by the end of the 7 th day; and prohibits overnight staging in areas of Karst topography identified by U.S. Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS) as frequently flooded, and sites with on-site storage.
Part I.H.1. – 3.	On-site storage Requirements: 9VAC25-32-550.D.1., 3. - 10. describes on-site storage and provides procedural requirements for staging up to 45 days, routine inspections by certified land applier; procedural and notification requirements; 9VAC25-32-550.D. specifies on-site storage shall take place on a constructed surface at a location preapproved by DEQ and that biosolids stored on the site shall be land applied only at sites under control of the owner/operator of the site where the on-site storage is located; 9VAC25-32-550.C., D.2. & 6. specifies permeability requirements for the pad and requires existing storage facilities to come into compliance with the amended regulation by 9/1/2014.
Part I.I.1.	Infrequent Application: 9VAC25-32-560.B.3.c. establishes infrequent application based on total crop needs for nitrogen.
Part I.I.2.	Depth to Bedrock or Restrictive Layers: 9VAC25-32-560.B.2.a. states depth to bedrock or restrictive layers shall be a minimum of 18 inches.
Part I.I.3.	Depth to Groundwater: 9VAC25-32-560.B.2.b. prohibits land application when seasonal high water table is within 18” of ground surface and requires use of USDA-NRCS soil survey maps and soil borings to verify groundwater depth.
Part I.I.4.	pH Management: 9VAC25-32-560.B.2.c. requires the biosolids soil mixture have a pH of 6.0 s.u. or higher where cadmium in the biosolids is ≥ 21 mg/kg. 9VAC25-32-560.B.2.d. requires the addition of lime or use of lime amended biosolids if soil pH is < 5.5 s.u.
Part I.I.5.	Soil Potassium < 38 ppm: 9VAC25-32-560.B.2.e. requires addition of potash prior to or concurrently with the biosolids if the soil potassium (Mehlich I) is < 38 ppm.
Part I.I.6.	Equipment Calibration: 9VAC25-32-560.B.3.d.(1) requires routine measurement of the field application rate of application equipment.
Part I.I.7.	Liquid Biosolids/WTP Residuals: 9VAC25-32-560.B.3.d.(1) limits application of liquid biosolids to 14,000 gallons per acre, per application, with drying time between applications.

Part I.I.8.	Grass Height: 9VAC25-32-560.B.3.d.(1) requires hay and pasture to be grazed or clipped to approximately six inches prior to biosolids application.
Part I.I.9.	Uniform Application: 9VAC25-32-560.B.3.d.(1) requires a uniform application of biosolids on a field. If application is not uniform additional operational methods are required followed by clipping.
Part I.I.10.	Odor Control by Incorporation: 9VAC25-32-560.B.3.d.(2) allows DEQ or the local monitor to require incorporation, when practical or compatible with a soil conservation plan, to mitigate malodor.
Part I.I.11.	Slope Restrictions: 9VAC25-32-560.B.3.d.(3) prohibits application on slopes >15%, but allows the restriction to be waived by DEQ for the establishment and maintenance of perennial vegetation or based on BMPs.
Part I.I.12.	Snow Covered Ground: 9VAC25-32-560.B.3.d.(5) allows land application of biosolids on snow cover that is one inch or less in depth and the snow and biosolids are incorporated within 24 hours. If the snow melts with application, incorporation is not required.
Part I.I.13.	Setbacks: 9VAC25-32-560.B.3.e.(1) – (4) establishes setback distances and procedures for extending or waiving residential and property line setbacks.
Part I.I.14.	Site Access Restrictions: 9VAC25-32-675.B.5. establishes access restrictions for sites where Class B biosolids have been land applied.
Part I.I.15.	Forestland (Silviculture): 9VAC25-32-560.C. establishes requirements for land application on silvicultural sites.
Part I.I.16.	CPLR Biosolids: 9VAC25-32-313.F. establishes criteria for determining the need to track the metals loadings on individual sites where metals subject to the cumulative pollutant loading rates have been applied.
Part I.J.1.	Biosolids/WTP Residuals Sources: 9VAC25-32-305.D. states that no person shall land apply, market or distribute biosolids in Virginia unless the biosolids source has been approved by the board.
Part I.J.2.	Land Application Sites: 9VAC25-32-305.C. states that no person shall land apply Class B biosolids on any land in Virginia unless that land has been identified in an application to issue, reissue or modify a permit and approved by the board.
Part I.J.3.	Pollution Liability and General Liability Requirement: 9VAC25-32-780. establishes liability requirements. 9VAC25-32-790. – 850. provides specific requirements for each type of liability demonstration.
Part I.J.4.	Alteration of Biosolids Composition: 9VAC25-32-560.A.2. prohibits the alteration of the biosolids composition at the land application site.
Part I.J.5.	Site Specific Application Rates: 9VAC25-32-560 states site specific application rates shall not exceed the rates established in the nutrient management plan nor result in exceedance of the cumulative trace element loading rates specified in 9VAC25-32-356, Table 3.

Part I.J.6.	Land Owner Consent Requirement: 9VAC25-32-60.D.4. requires the submission of landowner consent forms with the permit application. 9VAC25-32-530.B.2. requires the written agreement between the permittee and the landowner, specifies required information and use of the most current form approved by the board. 9VAC25-32-530.A. requires the permittee to maintain the agreement.
Part I.J.7.	Threatened and Endangered Species Protection: 9VAC25-32-313.B. states no one shall apply bulk biosolids to the land if it is likely to adversely affect a threatened or endangered species listed in 9VAC25-260-320. or § 4 of the Endangered Species Act (16 USC § 1533) or if the land application is likely to adversely affect its designated critical habitat.
Part I.J.8.	Certified Land Applicator Requirement: § 62.1-44.19.3.1.B. states that Class B biosolids shall not be land applied unless a certified land applicator is onsite at all times during the application. 9VAC25-32-690. requires the land applier to maintain a field log and identifies minimum requirements and sign monthly reports, attesting that they were onsite at all times reported.
Part I.J.9.	Reopener: 9VAC25-32-220. allows a permit to be opened when a change is made in the promulgated standards or regulations on which the VPA permit was based.
Part I.J.10.	Storm Water Discharge Exception: 9VAC25-32-30.A. states that all pollutant management activities covered under a VPA permit shall maintain no point source discharge of pollutants to surface waters except in the case of a storm event greater than the 25-year, 24-hour storm.
Part I.J.11.	Materials Handling/Storage: 9VAC25-32-30.B. states that except in compliance with the VPA or another permit issued by the board that it is unlawful to discharge into, or adjacent to, state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances.
Part II.	CONDITIONS APPLICABLE TO ALL VPA PERMITS: VPA Permit Regulation 9VAC25-32-80. requires all VPA permits to contain or specifically cite the conditions listed.

17. Attachments to the permit:

Part I.K. - Attachment A – Description of Land Application Sites

Fact sheet - Appendix A – Map of Land Application Sites

Site Books - Eight site books submitted at the time of permit application which includes site specific information.

APPENDIX A
Site Location Map
SYNAGRO CENTRAL, LLC. – MADISON COUNTY

