



COMMONWEALTH of VIRGINIA

Matthew J. Strickler
Secretary of Natural Resources

DEPARTMENT OF ENVIRONMENTAL QUALITY
Blue Ridge Regional Office
901 Russell Drive, Salem, VA, 24153
(540) 562-6700; Fax (540) 562-6725
www.deq.virginia.gov

David K. Paylor
Director

Robert J. Weld
Regional Director

SOLID WASTE FACILITY PERMIT SWP 571

Facility Name: Pittsylvania County Sanitary Landfill

Facility Type: Sanitary Landfill

Latitude: 36°N 45'39"

Site Location: Pittsylvania County

Longitude: 79°W 25'17"

Location Description: The facility is located southwest of Chatham at 382 Rainbow Lane in Pittsylvania County, Virginia. The facility is accessed by traveling Route 29 south to State Route 718, south of Chatham, taking Route 718 west to Route 863, which leads to the landfill access road, Route 1041.

Background: The facility is a publicly owned and operated sanitary landfill that serves municipalities of Pittsylvania County. The wastes accepted include those wastes identified in Module II.

The site is comprised of approximately 450 acres, of which 26.8 acres is Phase II active disposal area. All of the Phase I area comprising of 53.8 acres has been closed and includes pre-1988 trenches, trench 1A, trench 1-B/C, special handling trenches and the Phase I landfill cell. The permit was issued September 13, 1994, to incorporate the areas under previous SWP's 152 and 512, as well as the Phase I disposal area. The facility therefore incorporated the areas under previous solid waste permits SWP152 and SWP512, and added approximately 294 acres for a total facility area of approximately 450 acres. SWP 571 revokes SWP 152 and SWP 512, as they are now incorporated into SWP 571.

The total capacity of Phase II of the landfill is 2,982,000 cy, as provided in the Phase II Design Report. The estimated site life for this area is approximately 12.5 years based on the daily disposal limit of 1,000 tons/day with an estimated in-place waste density of 1,200 lbs/cubic yard.

Permit Modification: This permit modification is for an increase in the disposal limit from 200 tons/day to 1,000 tons/day, the addition of types of acceptable waste that the facility may receive, revisions to the Landfill Gas Remediation Plan, the Groundwater Monitoring Plan, CAP and CAMP. All previous permit modifications are outlined in detail in Module I, Section I.G.

Permit Variance: No variances are associated with this permit modification. The past variance approvals are outlined in detail in Module I, Section I.H.

THIS IS TO CERTIFY THAT:

County of Pittsylvania
Department of Public Works
P.O. Box 426
Chatham, Virginia 24531

is hereby granted a permit to construct, operate, and maintain the facility as described in the attached Permit Modules I, II, III, X, XI, XII, XIII and XIV and Permit Documents incorporated by reference. These Permit Modules and Permit Documents are as referenced hereinafter and are incorporated into and become a part of this permit.

The herein described activity is to be established, modified, constructed, installed, operated, used, maintained, and closed in accordance with the terms and conditions of this permit and the plans, specifications, and reports submitted and cited in the permit. The facility shall comply with all regulations of the Virginia Waste Management Board. In accordance with Chapter 14, § 10.1 - 1408.1(D) of the Code of Virginia, prior to issuing this permit, any comments by the local government and general public have been investigated and evaluated and it has been determined that the facility poses no substantial present or potential danger to human health or the environment. The permit contains such conditions and requirements as are deemed necessary to comply with the requirements of the Virginia Code, the regulations of the Board, and to prevent substantial or present danger to human health or the environment.

Failure to comply with the terms and conditions of this permit shall constitute grounds for the revocation or suspension of this permit and for the initiation of necessary enforcement actions.

The permit is issued in accordance with the provisions of § 10.1-1408.1.A, Chapter 14, Title 10.1, Code of Virginia (1950) as amended. Variances that have been approved for this facility are included in Permit Attachment I-1.

Issued: September 13, 1994
Modifications: February 7, 1997 (Modification 1)
October 14, 1998 (Modification 2)
September 15, 1999 (Modification 3)
May 13, 2003 (Modification 4)
June 1, 2006 (Modification 5)
September 14, 2009 (Modification 6)
December 13, 2012 (Modification 7)

APPROVED:

R. Nelson Dail
Deputy Regional Director

DATE:

Modification 8

PERMIT MODULES REFERENCE LIST

- PERMIT MODULE I -- GENERAL PERMIT CONDITIONS**
 - PERMIT ATTACHMENT I-1 – PREVIOUS PERMIT APPROVAL LETTERS**
- PERMIT MODULE II – CONDITIONS OF OPERATION**
- PERMIT MODULE III – SANITARY LANDFILL DESIGN**
- PERMIT MODULE X – DETECTION MONITORING**
- PERMIT MODULE XI – ASSESSMENT MONITORING**
- PERMIT MODULE XII - CLOSURE**
- PERMIT MODULE XIII - POST-CLOSURE CARE**
- PERMIT MODULE XIV - CORRECTIVE ACTION**

PERMIT DOCUMENTS

The documents listed below are hereby incorporated into this permit and the permittee is subject to all conditions contained therein. It is the responsibility of the permittee to properly maintain and update these documents. Any version with a revision date other than as listed below is not considered to be the official approved version and is subject to Department review and approval prior to being recognized as the “permitted” version.

1. *Pittsylvania County Landfill Expansion (Design Plan Phase I)*, prepared by Dewberry & Davis, Inc., last revised May 6, 1994.
2. *Pittsylvania County Landfill Expansion (Design Report Phase I)*, prepared by Dewberry & Davis, Inc., dated August 2, 1993 and last revised June 1994
3. *Pittsylvania County Landfill Phase I Closure Plan Amendment (Closure and Post-Closure Plan)*, prepared by Dewberry & Davis, Inc., dated October 24, 2001 and last revised August 24, 2009.
4. *Pittsylvania County Landfill – Phase II Part B Permit Application (Design Plan Phase II)*, prepared by Dewberry & Davis, Inc., dated May 2001 and last revised February 2003.
5. *Design Report Phase II*, prepared by Dewberry & Davis, Inc., dated May 2001 and last revised by LaBella Associates on August 2020.
6. *Pittsylvania County Landfill Phase II Part B Amendment Application Closure/Post-Closure Plan*, prepared by Dewberry & Davis, Inc., dated May 2001 and last revised by LaBella Associates on October 2019.
7. *Pittsylvania County Landfill Phase II Part B Amendment Application QAQC Plan (Construction Quality Assurance/Quality Control Plan)*, prepared by Dewberry & Davis, Inc., dated August 2002 and last revised February 2003.
8. *Landfill Gas Management Plan Phase II*, prepared by Dewberry & Davis, Inc., dated June 2001 and last revised February 2003.
9. *Landfill Gas Remediation Plan Phase I (for Trenches Closed prior to 1988)*, prepared by Dewberry & Davis, Inc., dated April 2000 and last revised February 2003.
10. *Landfill Gas Remediation Plan Phase I and Phase II*, prepared by LaBella Associates, dated December 2019.
11. *Groundwater Monitoring Plan*, last revised by LaBella Associates on July 2020.
12. *Corrective Action Plan*, prepared by Dewberry & Davis, Inc., dated May 2003 and last revised by LaBella Associates on July 2020.
13. *Corrective Action Monitoring Plan*, dated May 2003 last revised by LaBella Associates on July 2020.

The following documents have been submitted to satisfy permit or regulatory requirements; however, are considered reference documents and are not incorporated into SWP571. This list may not be all-inclusive.

1. *Pittsylvania County Landfill – Phase I Closure Construction CQA Documentation*, prepared by Draper Aden Associates, dated April 2006.
2. *Construction Quality Assurance Report, Cell B Phase II*, prepared by Draper Aden Associates, dated October 26, 2012.

PERMIT MODULE I GENERAL PERMIT CONDITIONS

I.A. EFFECT OF PERMIT

The permittee is allowed to dispose solid waste on-site in accordance with the conditions of this permit. Any disposal of solid waste not authorized by this permit is prohibited. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Sections 10.1-1402(18), 10.1-1402(19), or 10.1-1402(21) of the Virginia Waste Management Act (Chapter 14, Title 10.1, Code of Virginia (1950), as amended); or any other law or regulation for protection of public health or the environment. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. For purposes of this permit, terms used herein shall have the same meaning as those in the Virginia Waste Management Act, and Part I and other pertinent parts of the Virginia Solid Waste Management Regulations (VSWMR, 9VAC20-81), unless this permit specifically provides otherwise; where terms are not defined in the regulations or the permit, the meaning associated with such terms shall be defined by the generally accepted scientific or industrial meaning of the term or a standard dictionary reference. "Director" means the Director of the Department of Environmental Quality, or his designated or authorized representative.

I.B. DUTIES AND REQUIREMENTS

The permittee shall comply with all conditions of this permit and 9VAC20-81. The effect of this permit is detailed in 9VAC20-81-490, and it shall be the duty of the permittee to ensure the applicable requirements are met. Additionally, the permittee is subject to the recording and reporting requirements detailed in 9VAC20-81-530. In addition to these requirements, the following additional conditions are invoked per 9VAC20-81-430, and shall be complied with:

- I.B.1. Noncompliance may be authorized by a schedule of compliance [9VAC20-81-490.D. and 9VAC20-81-490.H.]. Any other permit noncompliance constitutes a violation of Virginia Waste Management Act and is grounds for enforcement action, or for permit revocation, revocation and reissuance, or modification [9VAC20-81-570 and 9VAC20-81-600].
- I.B.2. The permittee shall comply with the requirements of this permit and any provisions of RCRA Subtitle D (Title 40, Code of Federal Regulations, Section 258) requirements as they become applicable upon their effective date. This permit may not act as a shield against compliance with any part of RCRA or any other applicable federal regulation, state regulation or state law.
- I.B.3. In an enforcement action, it shall not be a defense for the permittee that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- I.B.4. In the event of noncompliance with this permit, the permittee shall take all reasonable steps to minimize releases of solid wastes or waste constituents to the environment and shall carry out measures to prevent substantial adverse impacts on human health or the environment.
- I.B.5. The permittee shall at all times properly operate and maintain all units (and related appurtenances) which are installed or used by the permittee to achieve compliance with the

operations manual and the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing, and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary equipment only when necessary to achieve compliance with the conditions of this permit.

- I.B.6. The permittee shall furnish to the Director, within a reasonable time, any relevant information that the Director may request to determine compliance with this permit, regulations or the Act. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit by the date specified in the request.
- I.B.7. The permittee shall allow the Director, or an authorized representative, at a reasonable time, upon the presentation of appropriate credentials, to:
- I.B.7.a. Enter the permitted facility where a regulated unit or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - I.B.7.b. Have access to and copy any records that must be kept under the conditions of this permit;
 - I.B.7.c. Inspect any unit, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,
 - I.B.7.d. Sample or monitor, for the purposes of assuring permit compliance or as otherwise authorized by Virginia Waste Management Act, any substances or parameters at any location within his control.
- I.B.8. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample to be analyzed must be the appropriate method from the latest edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, if available.
- Laboratory samples shall be analyzed in accordance with 1 VAC 30-45, Certification for Noncommercial Environmental Laboratories, or 1 VAC 30-46, Accreditation for Commercial Environmental Laboratories.
- I.B.9. This permit is not transferable to any person, unless approved by the Director. The Director may require modification or revocation and reissuance of the permit pursuant to 9VAC20-81-490.G. Before transferring ownership or operation of the facility during its operational life, the permittee shall notify the new owner or operator in writing of the requirements of Parts III and V, of the Virginia Solid Waste Management Regulations, the Financial Assurance Regulations, 9VAC20-70, and this permit.
- I.B.10. In accordance with § 10.1-1408.2, all facilities must have a Certified Operator as required by the Board of Waste Management Facility Operators-Licensing Regulations, 18 VAC 155-20.
- I.B.11. Specifications for all drainage media should specify that the material shall contain no greater than 15% calcium carbonate equivalent. Department literature regarding research on leachate collection media indicates that weight loss greater than 15% results in an unacceptable loss of performance. If a greater percentage is specified or allowed, a

demonstration that performance is not adversely affected must be provided to the Department for review and approval.

- I.B.12. Recirculation of collected leachate shall not be allowed, in accordance with 9VAC20-81-210.D.3., except when the area to be irrigated is underlain by a composite liner system. Furthermore, in accordance with 9VAC20-81-200.C.3.c., decomposition gas condensate may be recirculated into the landfill provided the facility complies with the composite liner requirement and the leachate control system requirements of Part III of VSWMR. A composite liner system is a system designed to meet the requirements of 9VAC20-81-130.J.1.
- I.B.13. The closure cost estimate must reflect the maximum cost of closure at all times. The owner has the responsibility to maintain the closure and post closure cost estimate and associated financial assurance funding as conditions change.
- I.B.14. Land-clearing, excavation, and construction activities that involve the disturbance of wetlands or streams shall not commence without authorization from the Virginia Water Protection (VWP) Program and/or Army Corps of Engineers.
- I.B.15. The facility shall maintain and follow an approved Erosion & Sediment Control Plan for all land-disturbing activities in accordance with the Erosion and Sediment Control Regulations, 9 VAC 25-840.

I.C. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The permittee shall maintain a complete copy of the Solid Waste Permit and incorporated Permit Documents at the facility, or another location approved by the director, until post-closure is complete and certified by a professional engineer, and shall maintain amendments, revisions, and modification to these documents. In addition, the facility shall maintain the following additional documents:

- I.C.1. Operations Manual with annual certification by Responsible Official
- I.C.2. Detailed, written estimate, in current dollars, of the cost of closing the facility, post-closure care and corrective action measures
- I.C.3. All other documents/records required and applicable from the following:
 - I.C.3.a. Monitoring records from leachate, gas, and groundwater.
 - I.C.3.b. Inspection records as required from construction/installation, operational, closure, and post-closure inspection requirements.
 - I.C.3.c. Personnel training records.
 - I.C.3.d. Daily operational records (i.e., solid waste received and processed, fill area records, records of special wastes accepted, a logbook which is a daily narrative account of the activities at the landfill).
 - I.C.3.e. Construction quality assurance reports, record drawings and engineers certifications for all new liner and/or final cover construction.
- I.C.4. An approved copy of the complete Part A application.

- I.C.5. Documentation of the authorization to discharge leachate into the publicly/privately owned treatment works, leachate volumes sent to the POTW, and periodic leachate sampling analytical results

I.D. DOCUMENTS TO BE SUBMITTED

In addition to the documents/records/reports to be submitted per the requirements of this permit or 9VAC20-81, the permittee shall also submit the following documents to the Director according to indicated schedules:

- I.D.1. Prior to expansion into each new phase, the permittee shall submit all required certification documents per 9VAC20-81-490.A., and:

- I.D.1.a. Authorization from the Campbell County Utilities and Service Authority (CCUSA) to discharge the increased volume of leachate and wastewater to the sewerage system and treatment works.

- I.D.1.b. Report and supporting documents resulting from quality control/quality assurance activities performed during construction and installation of the liner/drainage systems, including the installation contractor's written acceptance of the surfaces to be lined, synthetic liner manufacturer and installer warranties, laboratory test results of the permeability of the clay liner and the drainage media overlying the liner, and representative copies (sufficient to demonstrate responsible control) of the accumulated inspection schedules resulting from the professional engineer's oversight of the construction.

- I.D.2. In accordance with 9VAC20-81-490.A., certification from a design engineer, who must be a professional engineer licensed to practice in the Commonwealth, that the construction of the facility has been completed in accordance with the permit, approved plans and specifications and is ready to begin operation. A certification will be required for each lined phase of development.

- I.D.3. Certification (separate from I.D.2, above) from the Construction Quality Assurance (CQA) officer that the approved CQA plan has been successfully carried out and that the constructed unit meets all requirements of the permitted CQA plan, in accordance with 9VAC20-81-130.Q. A certification will be required for each lined phase of development. The CQA officer must be a professional engineer licensed to practice in Virginia.

- I.D.4. The as-built plans of all groundwater and gas monitoring wells shall be submitted as these wells are installed or modified. Information to be included on the as-built plans shall include, but is not limited to, the total depth of the well, the surveyed elevations of the top of casing and ground surface (or apron), and the length and location of the screened interval and annular space seal. All dimensions are to be shown on well construction schematics.

I.E. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DIRECTOR

All reports, notifications, or other submissions which are required by this permit to be sent or given to the Director should be sent to:

Virginia Department of Environmental Quality

Division of Land Protection and Revitalization
Blue Ridge Regional Office
901 Russell Drive
Salem, VA 24153

I.F. SITE SPECIFIC CONDITIONS

The provisions of this section are in addition to the permit conditions and regulatory requirements and are specifically developed for this facility. The permittee shall comply with all conditions of this section, as follows:

- I.F.1. The final permit is based on permit application submittals (drawings and reports) that may contain the word “proposed” and similarly tentative language. The documents that are incorporated into SWP571 have been evaluated for administrative and technical adequacy and have been approved as proposed. Therefore, any references to a design, construction, operation, monitoring or closure criteria are considered to be approved as proposed.
- I.F.2. The facility is subject to the conditions listed in the Part A approval letter dated June 10, 1993.
- I.F.3. The facility must implement a means by which unauthorized or off-site access is prohibited or otherwise restricted.
- I.F.4. By December 31 of 2020 and each calendar year thereafter, the permittee shall perform a topographic survey of the facility; this survey shall be certified by a professional engineer or certified land surveyor licensed in the Commonwealth of Virginia. The permittee shall submit a report to the Blue Ridge Regional Office Waste Program by April 1 of the year following with a determination of areas of the landfill that have attained final elevations and grades. The report shall also assess the capacity used during the year, the remaining permitted capacity, and the projected remaining site life. The remaining permitted capacity shall be calculated by the comparison of the existing grade and the permitted final cover grade and presented in a cut/fill drawing. Areas that have attained final elevations and slopes must be stabilized in accordance with the permit until final cover is applied within the timeframe specified in the Closure Plan. Except as may be separately approved or permitted in writing by DEQ for exigent or emergency situations, no waste shall be placed in areas where the elevation exceed those shown on Drawing No. 15/Overall Cap Grades dated February 2003.
- I.F.5. The facility will conduct a low flow trial sampling event in October 2020. If this trial sampling event supports the use of low flow groundwater sampling at the facility, the facility must submit a revised groundwater monitoring plan, which reflects the use of low flow sampling. If the trail sampling event does not support the use of low flow sampling, the facility must submit a report certified by a professional geologist documenting the geologic or hydrologic technical limitations preventing the use of a non-bailer sampling method. The revised groundwater monitoring plan or the technical limitation report must be submitted to DEQ within 90 days of the trial sampling event.

I.G. PERMIT MODIFICATIONS

- I.G.1. The February 7, 1997 minor permit modification approved amending the closure plan to incorporate an alternative cap for a recently closed area of the facility permitted under SWP 512. This alternate design was approved only for Trench I-BC.
- I.G.2. The October 14, 1998 major modification approved incorporating the use of an alternate liner system with GCL and slight changes in the base grades of Phase I and Phase II.
- I.G.3. On September 15, 1999, a major modification was approved incorporating Groundwater Protection Standards for Phase II and a variance for the use of Alternate Concentration Limits (ACL's) in lieu of background data.
- I.G.4. The May 13, 2003 major modification approved the expansion of Phase II, an amendment to the Phase I Closure Plan incorporating an alternate cap design and revision to the Gas Remediation Plan for the pre-1988 trenches.
- I.G.5. On June 1, 2006, a major modification approved the incorporation of a Corrective Action Plan (CAP) and a Corrective Action Monitoring Plan (CAMP).
- I.G.6. The minor modification of September 14, 2009, approved updates to the Operations Manual for Phase II and the Phase I Closure Plan to include inspections of the leachate monitoring system.
- I.G.7. The December 6, 2012 minor modification approved revisions to the CAP, CAMP and modifying the respective monitoring networks in the Groundwater Monitoring Plan.
- I.G.8. The current permit action is a major modification for an increase in the disposal limit from 200 tons/day to 1,000 tons/day. This modification also updates the types of acceptable waste that the facility may receive and incorporates minor revisions to the Landfill Gas Remediation Plan, the Groundwater Monitoring Plan, CAP and CAMP.

I.H. PERMIT VARIANCES

- I.H.1. On February 19, 2019 a variance approved the elimination of the requirement for the facility to submit routine semi-annual (Phase I) and quarterly (Phase II) monitoring reports while in the groundwater corrective action program.
- I.H.2. On April 12, 2010 a variance was approved for the use of Alternate Concentration Limits for Groundwater Protection Standards.

End of Module

Permit Attachment I-1

PERMIT RELATED APPROVAL LETTERS



COMMONWEALTH of VIRGINIA

Matthew J. Strickler
Secretary of Natural Resources

DEPARTMENT OF ENVIRONMENTAL QUALITY

Blue Ridge Regional Office
3019 Peters Creek Road, Roanoke, Virginia 24019
(540) 562-6700; Fax (540) 562-6725
www.deq.virginia.gov

David K. Paylor
Director

Robert J. Weld
Regional Director

February 19, 2019

Mr. Richard N. Hicks
Assistant County Administrator
Pittsylvania County
P.O. Box 426
Chatham, VA 24532
richard.hicks@pittgov.org

RE: Pittsylvania County Sanitary Landfill, SWP571
Variance to the Virginia Solid Waste Management Regulations (VSWMR) –Approval

Dear Mr. Hicks:

Please accept this as a response to your petition for Variance submitted to the Department on September 21, 2018. The public participation period for tentative approval of the variance ended on February 1, 2019. No comments were received during the public comment period.

The variance as approved is to the requirements of 9 VAC 20-81-250.E.2.b(1) of the VSWMR. This variance will eliminate the requirement for the facility to submit routine semi-annual (Phase I) and quarterly (Phase II) monitoring reports while in the groundwater corrective action program. The approval is subject to the following conditions:

1. This approval shall remain in effect until such time as corrective action requirements of 9 VAC 20-81-260 are no longer applicable to addressing exceedances of groundwater protection standards (GPS) at the facility or the facility has been granted full termination of post-closure care groundwater monitoring requirements by the Director.
2. This approval shall be terminated if:
 - a. the owner/operator fails to notify the Department of GPS exceedances recognized in any well onsite within appropriate timeframes after each groundwater sampling event as otherwise required under 9 VAC 20-81-250.B.3.f.(3).(a) or 250.C.3.e.(3).(a) , or
 - b. the owner/operator fails to submit the groundwater Annual report within appropriate timeframes of 9 VAC 20-81-250.E.2.a.(1), or
 - c. the owner/operator fails to include the technical items of 9 VAC 20-81-250.E.2.b.(1).(c); (f); and (g) which are normally included within the semi-annual or quarterly report, within the Annual report defined under 9 VAC 20-81-250.E.2.a.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision to initiate an appeal of this decision, by filing notice with:

David K. Paylor, Director
Virginia Department of Environmental Quality
ATTN: Division of Land Protection & Revitalization
P.O. Box 1105
Richmond, Virginia 23218-1105

In the event that this decision is served to you by mail, three days are added to that period. Please refer to Part Two of the rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specification of the Circuit Court to which an appeal is taken, and additional requirements governing appeals from decisions of administrative agencies.

Please note that it is the responsibility of applicant to obtain any other permits or authorizations that may be necessary. If there are any questions, please contact Jenny Poland, Solid Waste Permit Writer, at (540)562-6890 or jenny.poland@deq.virginia.gov.

Sincerely,



R. Nelson Dail
Deputy Regional Director

Enclosure

cc: John Westerfield, P.G., Joyce Engineering (jwesterfield@joyceengineering.com)
Elizabeth Lohman, DEQ-BRRO (elizabeth.lohman@deq.virginia.gov)
Michael, Sexton, P.E., DEQ-BRRO (michael.sexton@deq.virginia.gov)



COMMONWEALTH of VIRGINIA
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Roanoke, Virginia 24019
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Fax (540) 562-6725

January 9, 2013

Mr. William D. Sleeper
County Administrator
Pittsylvania County
P.O. Box 426
Chatham, VA 24531

RE: Pittsylvania County Sanitary Landfill – SWP 571
Certification to Operate Phase 2, Cell B

Dear Mr. Sleeper:

The Department received the following documents regarding the construction quality assurance (CQA) for the construction of Phase 2, Cell B at the Pittsylvania County Sanitary Landfill, SWP 571:

1. Construction Quality Assurance/Quality Control (CQA/QC) Report for construction of Phase 2, Cell B of the Pittsylvania County Sanitary Landfill, prepared on your behalf by Draper Aden Associates, dated October 2012.
2. A construction quality assurance certification, in accordance with the requirements of 9 VAC 20-81-130.Q.3. of the Virginia Solid Waste Management Regulations (VSWMR) signed by Kenneth M. Piazza, P.E., of Draper Aden Associates, and dated October 26, 2012.
3. A design engineer's certification, in accordance with 9 VAC 20-81-490.A.1 of the VSWMR, signed by Shawn R. Harden, P.E., of Dewberry, and dated October 26, 2012.

Based on the review of the construction quality assurance/quality control documents and the visual inspection conducted by the Department of Environmental Quality staff on November 14, 2012, you are now authorized to operate Phase 2, Cell B of the Pittsylvania County Sanitary Landfill (SWP 571) as indicated on the design drawings contained in Permit No. 571, and in accordance with Solid Waste Management Facility Permit No. 571, issued to Pittsylvania County.

The facility is currently in compliance with the Financial Assurance Regulations (FAR, 9 VAC 20-70). The current demonstration in the amount of \$8,060,624 is adequate to cover the cost of closure, post-closure, and corrective action for the facility.

In accordance with Module I of Permit No. 571, the permittee shall maintain a copy of all construction quality assurance documentation, as-built drawings and certifications at the facility (or another location approved by the director) until post-closure is complete. If you have any questions regarding this matter, please feel free to contact Christopher Keehan of my staff at (434) 582-6243 or christopher.keehan@deq.virginia.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Aziz Farahmand', written in a cursive style.

Aziz Farahmand, P.E.
Environmental Program Manager

cc: Shawn Harden, P.E., Dewberry
Leslie Weiford, Draper Aden Associates
Leslie Beckwith, CO
SWP 571 Permit File



Douglas W. Domenech
Secretary of Natural Resources

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Director

Robert J. Weld
Regional Director

Roanoke Office
3019 Peters Creek Road
Roanoke, Virginia 24019
(540) 562-6700
Fax (540) 562-6725

December 13, 2012

Mr. Otis Hawker
Assistant County Administrator
Pittsylvania County
P. O. Box 426
Chatham, VA 24531

RE: Minor Permit Amendment Approval
Pittsylvania County Landfill, SWP 571

Dear Mr. Hawker:

This correspondence is in response to the requests for the amendment of SWP 571 to modify the facility Groundwater Monitoring Plan (GMP), Corrective Action Plan (CAP), and Corrective Action Monitoring Plan (CAMP). These modifications include, but are not limited to, changes in the compliance and corrective action monitoring networks and addition of long term monitoring (LTM) to monitored natural attenuation (MNA) as part of the corrective action remedy. In addition, the language of Modules I, X, XI, and XIV are being updated to Amendment 8 of the Virginia Solid Waste Management Regulations (VSWMR).

These activities constitute a minor amendment, in accordance with 9 VAC 20-81-600.F. The proposed action is consistent with the requirements of VSWMR, and is hereby approved.

A copy of this letter must be attached to each copy of SWP 571 to document this amendment approval. In addition, the attached documents must be incorporated into each copy of SWP 571.

- Revised Permit Introduction
- Revised Table of Contents
- Revised Module 1
- Revised Module X with Attachment X-1
- Revised Module XI
- Revised Module XIV with Attachments XIV-1 and XIV-2

Please note that Attachment XIV-3 has been removed. The monitoring well installation schedule is now included in Module XIV. In addition, the surface water monitoring plan is included in Attachment XIV-3 – Corrective Action Monitoring Plan.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have **30-days** from the date of service of this decision to initiate an appeal of this decision, by filing notice with:

David K. Paylor, Director
Virginia Department of Environmental Quality
P.O. Box 1105
Richmond, Virginia 23218

In the event that this decision is served to you by mail, three days are added to that period. Please refer to Part Two of the rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specification of the Circuit Court to which an appeal is taken, and additional requirements governing appeals from decisions of administrative agencies.

Please note that it is the responsibility of the permittee to obtain any other local, state, or federal government permits or authorizations that may be necessary. Your attention to this matter is appreciated. If you have any questions, please contact Michael Sexton at (434) 582-6233 or mdsexton@deq.virginia.gov.

Sincerely,



Robert J. Weld
Regional Director

Attachments:

- Permit Introduction
- Table of Contents
- Module I
- Module X with Attachment X-1
- Module XI
- Module XIV with Attachments XIV-1 and XIV-2

cc: SW Groundwater File – SWP 571
Aziz Farahmand, DEQ-BRRO (Roanoke)
Mal Lafoon, DEQ-BRRO (Lynchburg)
Briana Bill, Dewberry & Davis, Inc. (Danville)



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Blue Ridge Regional Office

www.deq.virginia.gov

David K. Paylor
Director

Steven A. Dietrich
Regional Director

Douglas W. Domenech.
Secretary of Natural Resources

Lynchburg Office
7705 Timberlake Road
Lynchburg, Virginia 24502
(434) 582-5120
Fax (434) 582-5125

Roanoke Office
3019 Peters Creek Road
Roanoke, Virginia 24019
(540) 562-6700
Fax (540) 562-6725

April 12, 2010

Mr. Otis Hawker
Assistant County Administrator
Pittsylvania County
P. O. Box 426
Chatham, VA 24531

RE: Pittsylvania County – Phase II Sanitary Landfill, Permit # 571
ACL Variance Petition Final Approval

Dear Mr. Hawker:

Please accept this as a response to your petition for the use of Alternate Concentration Limits as groundwater protection standards as allowed by 9 VAC 20-80-760.A. The 30-day public comment period ended on March 14, 2010 and one adverse public comment was received by the Department. This comment has been addressed by the Department. Consistent with 9 VAC 20-80-790.B.3.(e), the Department hereby notifies you of the decision to approve the variance subject to the conditions outlined in the attached document. Please note that you will be responsible for meeting the conditions of the approval, as well as obtaining any other permits or authorizations that may be needed as a result of this approval.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision to initiate an appeal of this decision, by filing notice with:

David K. Paylor, Director
Virginia Department of Environmental Quality
Waste Division
P.O. Box 1105
Richmond, Virginia 23218-1105

In the event that this decision is served to you by mail, three days are added to that period. Part Two of the rules of the Supreme Court of Virginia describes the required content of the Notice of Appeal, including specification of the Circuit Court to which an appeal is taken, and additional requirements governing appeals from decisions of administrative agencies.

Please contact me at 434-582-6233 or michael.sexton@deq.virginia.gov if you have any other questions.

Sincerely,

A handwritten signature in black ink that reads "Michael D. Sexton". The signature is written in a cursive style with a large, stylized initial "M".

Michael D. Sexton
Groundwater Remediation Specialist

Attachments:

- Final Variance document
- Final GPS Table

cc: SW GW File – PN 571
Aziz Farahmand, DEQ-BRRO (Roanoke)
Geoff Christe, DEQ-CO
Briana Brooks, Dewberry & Davis, Inc. (Danville)



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Blue Ridge Regional Office

www.deq.virginia.gov

David K. Paylor
Director

Steven A. Dietrich
Regional Director

L. Preston Bryant, Jr.
Secretary of Natural Resources

Lynchburg Office
7705 Timberlake Road
Lynchburg, Virginia 24502
(434) 582-5120
Fax (434) 582-5125

Roanoke Office
3019 Peters Creek Road
Roanoke, Virginia 24019
(540) 562-6700
Fax (540) 562-6725

September 14, 2009

Mr. Otis S. Hawker
Director of Public Works
Pittsylvania County
P.O. Box 426
Chatham, VA 24531

RE: Pittsylvania County Sanitary Landfill, SWP 571
Minor Permit Amendment No. 6—Operations Manual and Closure Plan Modifications

Dear Mr. Hawker:

Please accept this as a response to the request for a minor permit amendment to SWP 571 to update the Operations Manual for Phase 2 and the Closure Plan for Phase 1 to include leachate management system inspections. The facility has provided an updated Operations Manual for Phase 2 and updated Closure Plan for Phase 1, consistent with the requirements of VSWMR, which are hereby approved.

A copy of this letter must be attached to each copy of SWP 571 to document this amendment approval. In addition, the attached documents must be incorporated into each copy of Permit #571.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision to initiate an appeal of this decision, by filing notice with:

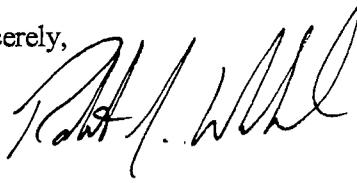
David K. Paylor, Director
Virginia Department of Environmental Quality
P.O. Box 1105
Richmond, Virginia 23218

In the event that this decision is served to you by mail, three days are added to that period. Please refer to Part Two of the rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specification of the Circuit Court to which an appeal is taken, and additional requirements governing appeals from decisions of administrative agencies.

Mr. Otis Hawker
SWP 571-Minor Permit Amendment No. 6
Page 2 of 3

Please note that it is the responsibility of Pittsylvania County Sanitary Landfill to obtain any other permits or authorizations that may be necessary. If there are any questions, please contact Christopher Keehan in the Lynchburg office at (434) 582-6243 or cmkeehan@deq.virginia.gov.

Sincerely,



for Steven A. Dietrich, P.E.
Regional Director

Attachments: Permit Module I
Operations Manual, Phase 2
Closure Plan, Phase 1

cc: Shawn Harden, P.E.,
Mal Lafoon, DEQ BRRO-Lynchburg (electronic)
SW Permit File – Pittsylvania County SLF SWP 571

FILE COPY



COMMONWEALTH of VIRGINIA

James S. Gilmore, III
Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 10009, Richmond, Virginia 23240

Fax (804) 698-4500 TDD (804) 698-4021

<http://www.deq.state.va.us>

Dennis H. Treacy
Director

(804) 698-4000
1-800-592-5482

John Paul Woodley, Jr.
Secretary of Natural Resources

DIVISION OF WASTE PROGRAM COORDINATION
WASTE PERMITTING

October 14, 1998

Mr. Otis Hawker
Public Works Director
Pittsylvania County
P.O. Box 426
Chatham, Virginia 24531

RE: Pittsylvania County Sanitary Landfill
Pittsylvania County, Virginia
Issuance of Permit Number 571, Amendment No. 2

Dear Mr. Hawker:

Enclosed is Amendment No. 2 to Permit No. 571 for the Pittsylvania County Sanitary Landfill. The public participation period ended on September 14, 1998. No comments were received. Otherwise, only incidental editing occurred.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of the service of this decision to initiate an appeal of this decision, by filing notice with:

Dennis H. Treacy, Director
Virginia Department of Environmental Quality
ATTN: Waste Division
Post Office Box 10009
Richmond, Virginia 23240-0009

In the event that this decision is served to you by mail, three additional days will be added to that period. Please refer to Part Two of the rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specification of the Circuit Court to which the appeal is taken, and additional requirements governing appeals from the decisions of administrative agencies.

Please note that it is the responsibility of Pittsylvania County to obtain any other permits or authorizations that may be necessary. If there are any questions, please contact Mark A. Campbell, Environmental Engineer Senior at (804)698-4125.

Sincerely,

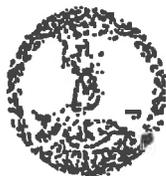


for Dennis H. Treacy
Director

enclosure

cc: DEQ - Director, WCRO (w/enclosure)
DEQ - Christine Aukamp, WCRO (w/enclosure)
DEQ - Paul Farrell, OPM (w/enclosure)
DEQ - Rob Timmins, OTA (w/enclosure)
DEQ - Mark Campbell, OPM (w/enclosure)
DEQ - Melissa Porterfield, OPM

AWP / MY
COURT / FILE



COMMONWEALTH of VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY

June 10, 1993



Mr. Claude Whitehead
Interim County Administrator
Pittsylvania County
P.O. Box 426
Chatham, Virginia 24531

RE: Part A Permit Application
Pittsylvania County Sanitary Landfill Expansion
Pittsylvania County, Virginia
Permit #512

Dear Mr. Whitehead:

On May 10, and May 24, 1993 the Waste Division of the Department of Environmental Quality received addendum information for the referenced Part A Permit Application. The addendum information has satisfactorily addressed the Department comment letter dated April 23, 1993. Accordingly, the Part A Permit Application dated November 1992 as amended with additional information dated April 15, May 5, and May 20, 1993 is deemed complete and is hereby approved.

In accordance with §7.1 of the Virginia Solid Waste Management Regulations (VR 672-20-10) approval of a Part A Permit Application can be made subject to specific conditions. Listed below are the requirements of the conditional approval of the referenced Part A Permit Application:

1. That all containment structures including liners, leachate collection systems, and surface water control systems will be designed to resist the maximum horizontal acceleration in lithified earth material, (with a 10% or greater probability of occurring in 250 years), for this site.
2. That all buffers between the disposal area and specific site features, such as the underground natural gas line, cemetery, base floodplain, and wetlands, be maintained as shown on the revised near vicinity map submitted on May 20, 1993.

The Part B Application, when prepared, should be submitted directly to Mr. Hassan Vakili. Prior to submittal of your Part B Application, it is recommended that you contact Mr. Vakili at (804)

371-0519, to set up a meeting to discuss your Part B Application.

Should there be any questions regarding the Part A Application or about the contents of this letter, please contact Richard Essex at (804) 371-0522.

Sincerely,

James C. Adams
James C. Adams
Director, Waste Division

WLW/rme

cc: Joseph Stanley, P.E., Dewberry & Davis.
Hassan Vakili, DEQ
Richard Essex, DEQ

DEQ Track #93-0707, 93-0774



Dewberry & Davis
 Architects Engineers Planners Surveyors
 P.O. Box 1500 Danville, VA 24549-1509
 561 Finney Forest Rd., Danville, VA 24541 ☎ 804 797 4497

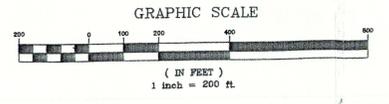
Pittsylvania County Landfill
 Pittsylvania County, Virginia

Near - Vicinity Map 2A

Drawn By JLK
 Designed By
 Checked By
 Date NOVEMBER 1992
 Scale AS NOTED
 Plan Number PITTSY
 Zoned N/A
 Sheet 1 of 1
 File Number

REVISIONS			
NO.	BY	DATE	REMARKS

- NOTES
1. TOPO INFORMATION TAKEN FROM AERIAL PHOTOGRAPH DATED APRIL 23, 1992
 2. SEE NEAR VICINITY MAP 1A FOR ADJACENT PROPERTY OWNERS, DEED BOOK & TAX MAP INFORMATION.
 3. BOUNDARY INFORMATION TAKEN FROM SURVEY MAP, PREPARED BY DEWBERRY & DAVIS, DATED NOV. 3, 1992.



LEGEND

BH-0	
MW #0	

LANDFILL BOUNDARY SURVEY INFORMATION

LINE	DIRECTION	DISTANCE
B-1	S 67°51'43" W	329.3458
B-2	S 34°51'57" W	207.4800
B-3	N 40°53'36" W	443.1715
B-4	N 87°48'07" E	225.2810
B-5	S 66°27'56" E	420.0406
B-6	N 60°09'19" E	625.8487
B-7	N 45°18'20" E	278.8110
B-8	S 61°00'08" W	226.5304
B-9	N 57°16'21" E	223.3725
B-10	N 29°40'33" W	142.0000
B-11	N 52°17'55" E	1801.4700
B-12	N 38°42'55" W	635.7000
B-13	N 27°22'55" W	1593.5952
B-14	S 18°34'16" E	30.0000
B-15	S 71°25'44" W	92.1431
B-16	N 70°45'33" E	132.0059
B-17	S 05°31'43" E	884.4837
B-18	S 46°22'09" W	552.6700
B-19	N 02°12'53" E	104.4058
B-20	N 02°12'39" E	1016.4094
B-21	N 16°52'24" E	105.8935
B-22	N 89°48'41" E	181.3166
B-23	N 89°09'44" E	880.6182
B-24	N 89°14'16" W	198.0000
B-25	N 72°28'44" E	49.4180
B-26	N 89°03'11" W	181.2649
B-27	N 09°09'42" W	1003.7674
B-28	N 09°09'42" W	50.0000
B-29	N 34°39'05" E	110.5683
B-30	S 63°10'02" E	122.1720
B-31	N 70°15'42" E	316.9516
B-32	S 54°14'00" W	516.9763
B-33	N 62°19'53" E	180.4680
B-34	N 27°09'22" E	133.7593
B-35	N 64°23'13" E	122.7830
B-36	N 30°35'29" E	177.8565
B-37	N 40°21'16" E	233.3512
B-38	S 31°41'16" W	335.1652
B-39	N 11°11'33" E	156.5811
B-40	N 47°56'44" E	226.8083
B-41	N 79°30'52" E	116.5419
B-43	S 03°13'04" E	1171.9544
B-42	N 03°13'04" W	50.0000
B-44	N 80°43'30" E	2248.7536
B-45	N 05°47'33" W	3696.0932



Dewberry & Davis
 Architects Engineers Planners Surveyors
 P.O. Box 1509 Danville, VA 24543-1509
 551 Flansy Forest Rd. Danville, VA 24041 ☎ 804.797.4497

Pittsylvania County Landfill
 Pittsylvania County, Virginia

Near - Vicinity Map 1A

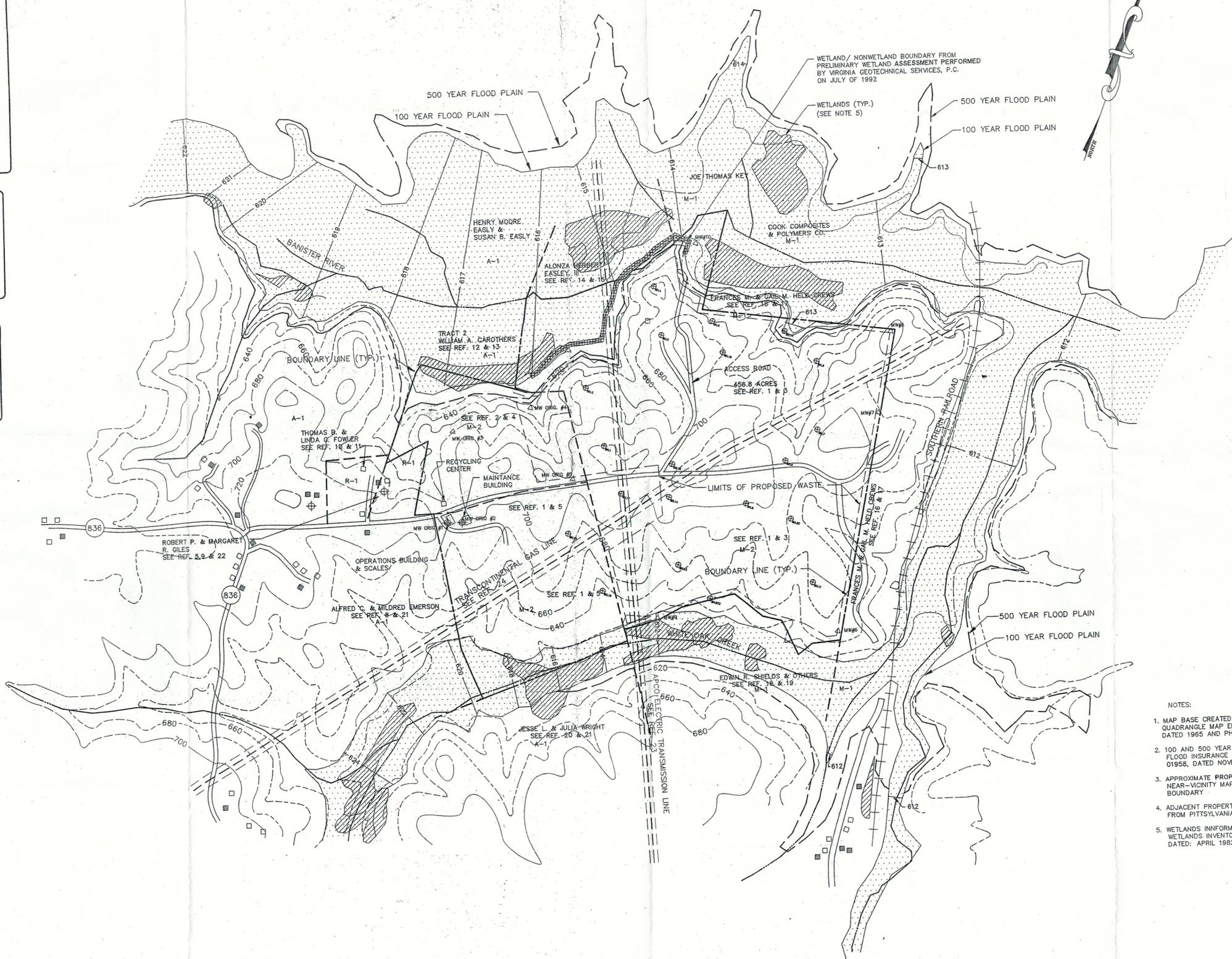
Drawn By JJK
 Designed By JFS
 Checked By DRC
 Date NOVEMBER 1992
 Scale AS NOTED
 Plan Number 30x42
 Zoned AS NOTED
 Sheet **1A**
 File Number 87314

- DEED & PLAT BOOK REFERENCES**
1. DEED BOOK 740, PAGE 358
 2. DEED BOOK 578, PAGE 308
 3. PLAT BOOK 6, PAGE 33
 4. PLAT BOOK 15, PAGE 7
 5. PLAT BOOK 5, PAGE 98
 6. MAP FOR EDWARD JONES BY: H.S. PERICE, DATED: MARCH 30, 1950
 7. PLAT BOOK "P", PAGE 62
 8. MAP AT DEED BOOK 298, PAGE 450
 9. MAP AT DEED BOOK 485, PAGE 86
 10. DEED BOOK 748, PAGE 716
 11. MAP AT DEED BOOK 748, PAGE 717
 12. DEED BOOK 823, PAGE 422
 13. PLAT BOOK E, PAGE 86
 14. DEED BOOK 615, PAGE 145
 15. PLAT BOOK 19, PAGE 98
 16. DEED BOOK 259, PAGE 214
 17. WILL BOOK 37, PAGE 805
 18. DEED BOOK 489, PAGE 172
 19. PLAT BOOK 6, PAGE 9
 20. DEED BOOK 273, PAGE 255
 21. MAP AT DEED BOOK 551, PAGE 238
 22. DEED BOOK 728, PAGE 216
 23. DEED BOOK 416, PAGE 578
 24. DEED BOOK 305, PAGE 522

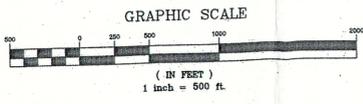
- LEGEND**
- - - 620 - - - 100-YEAR FLOOD ELEVATION
 - - - 500-YEAR FLOOD ELEVATION
 - DWELLING
 - OUTBUILDING
 - ⊕ PRIVATE WATER-SUPPLY WELL
 - ⊙ BORING LOCATION

- ZONING DISTRICTS**
- A-1 AGRICULTURAL
 - R-1 RESIDENTIAL SUBURBAN SUBDIVISION
 - M-1 LIGHT INDUSTRIAL
 - M-2 HEAVY INDUSTRIAL

- PITTSYLVANIA COUNTY TAX MAP I.D. REFERENCE**
1. 111 A-7 & 110 2-B
 2. 110 A-2B
 3. 111 A-7
 4. 110 1-2B
 5. 110 2-B
 6. N/A
 7. N/A
 8. 110 A-37
 9. 110 2-A
 10. 110 A-37B
 11. 110 A-37B
 12. 110 A-37
 13. 110 A-36
 14. 110 A-41
 15. 110 A-41
 16. 111 4-TR3
 17. 111 4-TR3
 18. 111 10-1
 19. 111 10-1
 20. 111 A-10
 21. 111 A-8
 22. 110 2-A



- NOTES:**
1. MAP BASE CREATED FROM USGS TOPOGRAPHICAL QUADRANGLE MAP ENTITLED CHATHAM, VIRGINIA, DATED 1985 AND PHOTO REVISED 1978.
 2. 100 AND 500 YEAR FLOOD PLAINS TAKEN FROM FLOOD INSURANCE RATE MAP NUMBER 51013-01958, DATED NOVEMBER 4, 1981.
 3. APPROXIMATE PROPERTY BOUNDARY SHOWN, SEE NEAR-VICINITY MAP 2A FOR ACCURATE PROPERTY BOUNDARY.
 4. ADJACENT PROPERTY OWNER INFORMATION OBTAINED FROM PITTSYLVANIA COUNTY TAX MAPS 110 AND 111.
 5. WETLANDS INFORMATION TAKEN FROM NATIONAL WETLANDS INVENTORY MAP, INTITLED CHATHAM, VIRGINIA DATED: APRIL 1982 (STAMPED DRAFT).



REVISIONS			
NO.	BY	DATE	REMARKS

PERMIT MODULE II CONDITIONS OF OPERATION

II.A. HOURS OF OPERATION

II.A.1. The normal operating hours for waste delivery acceptance by residential and non-commercial users shall be:

- Monday through Friday: 7:00 a.m. to 4:00 p.m.
- Weekends and Holidays: Landfill is closed on weekends and the following Holidays: New Year's Day, Lee-Jackson Day, Martin Luther King Day, Presidents Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, and Christmas Day.

The landfill gates are open until 4:00 p.m. but waste acceptance ceases at 3:30 p.m. Operational hours vary for the citizen convenience center. The schedule for Monday holidays and other select holidays during which the landfill is open may also vary. Operational hours may be altered by the facility upon notification to the Department.

II.A.2. Emergency conditions or unusual circumstances that require accepting waste outside of the normal operating hours shall be reported orally to the DEQ Blue Ridge Regional Office at (540) 562-6700 within 24 hours followed by a formal written submission within five days.

II.B. WASTES ACCEPTED

The Pittsylvania County Sanitary Landfill may receive the following wastes, as defined by 9VAC20-81-10, or described below:

- II.B.1. Municipal solid wastes, including garbage, household waste, refuse, residential waste, rubbish and trash.
- II.B.2. Agricultural waste.
- II.B.3. Animal carcasses. Small carcasses (e.g. dogs and cats) may be handled with incoming waste. Large animals and small volumes of animal carcasses (<20 cubic yards) may be received by the facility, but must be placed in a separate area within the disposal unit and provided with a cover of compacted soil or other suitable material. Disposal of large volumes of animal carcasses must be approved by the Department prior to disposal.
- II.B.4. Ashes and air pollution control residues that are not classified as hazardous waste. Incinerator and air pollution and control residues should not be incorporated into the working face and covered at such intervals as necessary to keep them from becoming airborne.
- II.B.4. Commercial Waste.
- II.B.5. Construction, demolition and debris waste.
- II.B.6. Contaminated Soil.
- II.B.7. Industrial Waste.

- II.B.8 Institutional Waste.
- II.B.9. Non-regulated hazardous wastes and treated wastes rendered nonhazardous, upon approval from the Department.
- II.B.10. Scrap metal.
- II.B.11. Sludge, industrial and/or POTW. Municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, and air pollution control facility sludges that have been dewatered.

Sludges shall be disposed of by mixing with other solid wastes, placed, and compacted at the working face in a manner to prevent localized pockets of sludge or conditions which might result in future instability of the waste mass.
- II.B.12. Vegetative and yard waste, including stumps that are less than 12 inches in diameter.
- II.B.13. Waste Tires. Tires shall be stored at the waste tire storage area in an appropriate manner in accordance with 9 VAC 20-81-640. Tires may also be split, cut, or shredded and then beneficially used or dispersed in the workface with other solid wates for disposal.
- II.B.14. White goods, provided that all appliances are free of chlorofluorocarbons, hydrochlorofluorocarbons and PCBs prior to placement on the working face. White goods may be accumulated at the facility in accordance with 9VAC20-81-650.
- II.B.15. UNAUTHORIZED WASTE – The Pittsylvania County Sanitary Landfill may not receive any unauthorized wastes identified in 9 VAC 20-81-140.B.4 or any of the following: waste oil that has not been adequately absorbed through site cleanup; radioactive wastes; lead acid batteries; pressurized tanks or pressurized containers; automobile gas tanks; friable and some non-friable asbestos-containing waste materials as defined by 9VAC20-81-620; regulated medical waste; explosives or other dangerous materials and junked automobiles.

II.C. PERMIT LIMITS

The facility has a disposal limit of 1,000 tons per day as specified in the Design Report for Phase II, last revised August 2020.

II.D. COMPACTION & COVER

- II.D.1. Daily cover consisting of six inches of compacted soil or other approved material shall be placed upon and maintained on all exposed solid waste prior to the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.
- II.D.2. Intermediate cover shall be applied when another lift of waste will not be placed for more than 30 days or to areas which exhibit erosion, cracking, or settlement.
- II.D.3. Before placement of new waste in areas with low permeability daily cover soil or alternate daily covers, or in areas with intermediate cover, cover materials shall be removed or penetrated such that leachate can flow downward unimpeded to the leachate collection system.

II.D.4 Final cover construction as outlined in Permit Module XII shall be initiated when the requirements of 9 VAC 20-81-140.B.1.e are met.

II.E. HOUSEKEEPING

II.E.1. The facility shall control odors in accordance with 9VAC20-81-200.D and/or as necessary to protect human health and the environment.

II.E.2 The facility shall use fencing or other suitable control means to control litter migration. All litter blown from the operations shall be collected on a weekly basis.

II.E.3 Fugitive dust and mud deposits on main offsite roads and access roads shall be limited at all time to limit nuisances. Dust shall be controlled to meet the requirements of 9VAC20-81-140.A.12.

II.E.4. Salvaging may only be performed in areas of the facility designated for salvaging or recycling. Salvaging operations must not interfere with the operations of the landfill or create hazards or nuisances.

II.E.5. Open burning at active landfills shall comply with the requirements of 9VAC20-81-140.A.4. Open burning is prohibited at areas where waste has been disposed or is being used for active disposal.

II.F. SAFETY PROGRAM

Safety hazards to operating personnel shall be controlled through an active safety program consistent with the requirements of 29 CFR Part 1910. Safety training shall be performed annually, at a minimum.

II.G. SELF-INSPECTION PROGRAM

The landfill shall implement an inspection routine including a schedule for inspecting all applicable major aspects of facility operations necessary to ensure compliance with the requirements of Part III of the VSWMR (9 VAC 20-81-100 through 9 VAC 20-81-260). Records of these inspections must be maintained in the operating record and available for review. At a minimum, the following aspects of the facility shall be inspected on a monthly basis: erosion and sediment controls, storm water conveyance system, leachate collection system, safety and emergency equipment, internal roads, and operating equipment.

II.H. OPERATIONS MANUAL REQUIREMENTS

II.H.1. The facility shall be operated in accordance with 9 VAC 20-81-140, Module II, and an operations manual which has been certified by a responsible official and placed in the facility's operating record.

II.H.2. The operations manual shall include the following items as required by 9 VAC 20-81-485:

- A certification page;
- Operations Plan;
- Inspection Plan;
- Health and Safety Plan;

- Unauthorized Waste Control Plan;
- Emergency Contingency Plan; and
- Landscaping Plan.

II.H.3. The operations manual shall be reviewed and recertified annually to ensure consistency with the current operations and regulatory requirements.

II.I. LEACHATE MANAGEMENT

Leachate shall be managed in accordance with 9 VAC 20-81-210, Module III and the facility's Leachate Management Plan, if applicable. If a leachate seep(s) occurs, the owner or operator shall repair the seep(s) and follow the procedures outlined in 9 VAC20-81-210.F.

II.J. LANDFILL GAS MANAGEMENT

Landfill gas shall be monitored in accordance with 9VAC20-81-200, Module III and the facility's Landfill Gas Management and Landfill Gas Remediation Plans. The gas management system shall be inspected at a rate consistent with the system's monitoring frequency.

II.J. GROUNDWATER MONITORING

Groundwater shall be monitored in accordance with 9VAC20-81-250 and 9 VAC 20-81-260; Modules X, XI and XIV, and the respective groundwater permit documents, as applicable. The groundwater monitoring system shall be inspected at a rate consistent with the system's monitoring frequency.

End of Module

PERMIT MODULE III SANITARY LANDFILL DESIGN

III.A. LINER DESIGN

Phase II, Cell C of the landfill shall be underlain by the composite liner system described below, from top to bottom:

- An 18-inch VDOT #8 or #78 aggregate leachate collection (drainage) layer over 10 oz nonwoven geotextile on the cell bottom or 18-inch protective soil layer overlying geonet-geocomposite layer on the 3:1 side slopes;
- a 60-mil High Density Polyethylene (HDPE) textured geomembrane;
- a Geosynthetic Clay Liner (GCL) with a permeability of no more than 1×10^{-9} cm/sec; and
- a compacted subbase.

Previous areas of the landfill were constructed as described with the liner system layers from top to bottom:

Phase II, Cell B of the landfill became operational on January 9, 2013, with the following base liner:

- 18-inch protective soil layer on side slopes, and 18-inch VDOT#8 leachate collection stone on cell floor,
- Geocomposite material (Skaps TN270-2-8) on side slopes, and 10-oz/sy cushion geotextile (Skaps GE110) on cell floor,
- 60-mil textured HDPE geomembrane manufactured by Agru America Inc.,
- GCL (CETCO Bentomat DN),
- Compacted landfill base foundation.

Phase II, Cell A, was constructed with a similar liner system to Cell B and began operation on June 29, 2004. Phase II, including Cells A, B and C, is approximately 27 acres and has an overall capacity of approximately 2,982,000 cy.

Phase I operated between 1996 and 2003 and was constructed with the composite liner system described below, from top to bottom:

- An 18-inch VDOT #78 aggregate leachate collection (drainage) layer with a permeability of 1×10^{-2} ;
- a 10 oz. nonwoven geotextile;
- a 60-mil High Density Polyethylene (HDPE) textured geomembrane;
- 2 feet of compacted clay liner with permeability $\leq 1.0 \times 10^{-7}$ cm/sec
- a prepared subbase.

Phase I is approximately 8.8 acres and has a capacity of approximately 700,000 cy.

Trenches 1-A and 1-BC were previously permitted under SWP512. Trench 1-A is approximately 5.4 acres with a capacity of 76,759 cy and it operated between 1989 and 1991. It was constructed with a 1-foot compacted clay liner with a permeability less than or equal to 1×10^{-7} cm/sec. Trench 1-BC is approximately 7.1 acres with a capacity of 337,165 cubic yards and it operated from 1990 to 1998. It was constructed with an engineered compacted clay liner similar to Trench 1-A.

Unlined special waste trenches used at the facility have a capacity of approximately 532,000 cy and cover approximately 5.5 acres.

The pre-1988 Trenches were originally permitted by the Virginia Department of Health under SWP152 and operated from 1974 until December 1988. They are approximately 27 acres with a capacity of 871,200 cy and are unlined.

III.B. LINER CONSTRUCTION & CERTIFICATION

The landfill base liner for Phase II shall be constructed in accordance with the approved Design Plans, Technical Specifications, and Construction Quality Assurance Plan.

Prior to expansion into each new Cell, the permittee shall submit all required certification documents as indicated in Permit Module I Section I.D.1 – 3 as required by 9 VAC 20-81-490.A. Once this documentation has been submitted and approved by the Department, and a site inspection of the new Cell has been conducted, a Certificate to Operate (CTO) must be issued by the Regional Office prior to the facility accepting waste in the newly constructed Cell.

III.C. LANDFILL GAS MANAGEMENT SYSTEM

III.C.1. The facility shall implement and maintain a gas management plan in accordance with 9 VAC 20-81-200 to provide for the protection of public health, safety, and the environment during the periods of operation, closure, and post-closure care, in accordance with the following requirements:

III.C.1.a. The concentration of methane gas generated by the facility shall not exceed 25 percent of the lower explosive limit for methane (1.25% methane) in facility structures (excluding gas control or recovery system components); and

III.C.1.b. The concentration of methane gas shall not exceed the lower explosive limit for methane (5.0% methane) at the facility boundary.

III.C.2. The facility shall perform quarterly landfill gas monitoring of the perimeter gas monitoring network and facility structures in accordance with 9 VAC 20-81-200.B.4.

III.C.3. The facility shall make any necessary repairs to the gas monitoring network (including, but not limited to, dewatering if necessary because probes cannot be routinely monitored or making repairs to the concrete pad, cap, lock, or cover) and gas management and remediation systems prior to the next gas quarterly monitoring event unless an alternate repair timeframe is requested and approved.

III.C.4. Perimeter Gas Monitoring Network

III.C.4.a. The facility shall install and maintain perimeter gas monitoring probes at the locations specified in the Landfill Gas Remediation Plan Phase I and II dated December 2019 on Drawing 2. The current perimeter gas monitoring network for Phase I consists of a series of eight landfill gas monitoring probes designated GP-1, 2, 3A, 4A, 5A, 6 and GP-8A. located west and north of the existing and closed landfill sites. The current perimeter gas monitoring network for Phase II consists of GP-7, 9, 10, 11, 12 and GP-15. GP-7 is located near the Transcontinental gasline at the northeastern corner

of the property. GP-9, 10, 11, 12 and 15 are located along the property boundary to the north and east at the Phase II landfill. The following structures are also monitored as part of the monitoring network: Firehouse 1, Firehouse 2, Office, Maintenance Building, Break Room, Welding shop and Garage.

The Banister River and White Oak Creek are natural barriers to landfill gas migration along parts of the northern and southern property boundaries, respectively.

Additional perimeter gas monitoring probes along property boundaries shall be added to the network if onsite or offsite property development encroaches within 1000 feet of the waste management boundary along that property boundary.

III.C.4.b. If the perimeter gas monitoring network is expanded with the installation of new or replacement gas monitoring wells, the facility shall submit copies of the well boring logs and probe as-builts for inclusion in Appendix I of the Landfill Gas Remediation Plan for Phase I and II within 30 days following construction completion.

III.C.4.c. All existing and future onsite structures shall be monitored in accordance with condition III.C.2 or have explosive gas monitoring equipment installed.

III.C.5. Landfill Gas Control Components

The existing and planned gas control systems at the landfill consists of passive gas vents as described below.

III.C.5.a Passive Gas Vents installed in waste: Passive gas vents will be installed within the waste mass as areas are closed until such time as active control measures become necessary. Currently Trench 1-A has four passive gas vents and Trench 1-BC has six passive gas vents and interior passive gas trenches (exact locations unknown). Trench 1-A and 1-BC also each have a leachate collection manhole which passively vents landfill gas. During closure of Phase I, eight passive gas vents were installed and two of the five leachate collection pipes (LC-4 and LC-5) passively vent gas. A total of 33 passive gas vents were installed in the Pre-1988 closed landfill in 1997 and 1999. Phase II currently has 7 passive vents installed along the western side. One of the Phase II gas vents is connected to the leachate collection system sump in Cell A. Installed vents extend approximately 80 percent the depth of waste.

Future passive gas vents installed in waste shall be constructed of six-inch Schedule 80 PVC pipe or HPDE pipe installed within a minimum 24-inch borehole. Pipe perforations shall begin a minimum of five feet below grade, be ½-inch in size, with 4 holes at 5 to 6-inch spacing. The borehole will be backfilled with VDOT #57 stone to a minimum of four feet of the existing grade. The remainder of the borehole shall be backfilled with a minimum 2-foot bentonite seal and soil backfill.

III.C.5.b Soil Passive Gas Vents: Passive gas vents installed in soil will be constructed of two or four-inch Schedule 40 PVC pipe.

III.C.6. Landfill Gas Monitoring Response and Remediation

III.C.6.a. Should the results of landfill gas monitoring indicate concentrations of methane in excess of the methane action level (4% methane or 80% of the lower explosive limit (LEL) at the facility boundary or 1.25% or 25% LEL in facility structures), the Operator shall:

- i. Take all immediate steps necessary to protect public health and safety (safety precautions should include evacuation of occupied structures, if affected; notifying local fire/safety officials of potential landfill gas migration; and coordinating for off-site monitoring of structures located within 1,000 feet of the facility boundary);
- ii. Investigate any active or passive gas control or remediation systems for proper connections and operation and make adjustments to vacuum, flow, or control valves, remove condensate, or make any other adjustments or repairs necessary to ensure proper operation, if applicable; and
- iii. Provide written notification within 5 working days of the methane action level exceedance indicating what has been done or is planned to be done to resolve the problem.
- iv. Increase the gas monitoring frequency per the requirements of III.C.6.c.

III.C.6.b. Should the results of landfill gas monitoring indicate concentrations of methane in excess of the methane compliance level (5% methane or 100% of the LEL at the facility boundary or 1.25% methane or 25% LEL in facility structures), the Operator shall:

- i. Perform the response actions outlined under III.C.6.a.i. and a.ii.;
- ii. Provide 24-hour oral notification of the methane compliance level exceedance;
- iii. Provide written notification within 5 working days of the methane compliance level exceedance containing a description of the circumstances and its cause; the period of occurrence, including exact dates and times, and, if the circumstance has not been corrected, the anticipated time it is expected to continue. It shall also contain steps taken or planned to reduce, eliminate, and prevent reoccurrence of the circumstances resulting in an unusual condition or noncompliance;
- iv. Increase the gas monitoring frequency per the requirements of III.C.6.c.;
- v. Implement the next phase of the approved remediation plan within 60 days or implement a revised remediation plan and submit the plan to DEQ for approval; and
- vi. Assess the spacing of the entire perimeter monitoring network. If the spacing between any probes exceeds 250 foot spacing, the facility shall

install additional perimeter probes unless the facility can show that such spacing is unwarranted based on site-specific factors.

- vii. Any planned active gas management system at the landfill shall be submitted to DEQ for approval.

III.C.6.c. The facility shall monitor a subset of the perimeter monitoring network consisting of the exceeding probe(s) and structure(s) and those probes/structures immediately adjacent, such that at least one probe on either side of each exceeding probe/structure is being monitored at the increased frequency.

- i. The increased monitoring frequency shall be monthly unless an alternate frequency is approved by the Department.
- ii. Monthly monitoring shall continue until three consecutive monthly readings yield methane concentrations below 80% LEL at the facility boundary or 25% LEL in facility structures. At that time, the facility can return to quarterly monitoring.
- iii. Once the required minimum number of consecutive monitoring events resulting in gas concentrations below action level are completed per III.C.6.c.ii. to justify returning to a lesser monitoring frequency, the facility shall submit monitoring data for ALL monitoring events since the implementation of the remedial action or remediation plan phase in order to assess progress towards return to compliance. If the return to a lesser monitoring frequency takes longer than six months, monitoring data shall be submitted in tabular form with an accompanying graph to clearly document trends in data over time to justify the change in monitoring frequency.

III.D. LEACHATE MANAGEMENT

Trench 1-BC and Phases I and II of the landfill are equipped with leachate collection systems. The Phase I leachate collection system consists of leachate sumps and side slope riser systems in each of the four landfill cells. Each sump has a capacity of approximately 2,000 gallons and is connected via transfer pipes which run through the cell separation berms. Leachate from the sumps is pumped to a leachate force main which discharges to the leachate lagoon.

Leachate collected in the leachate collection system from Phase II gravity drains into HDPE collection laterals that feed to a perimeter transfer pipe. The leachate in the transfer pipe flows to a collection sump located in Cell A with an approximate capacity of 2,000 gallons. Leachate from the sump is pumped through a side slope riser system into the leachate force main which discharges at the leachate lagoon.

Leachate from Trench 1-BC drains to a 5,000 gallon tank which is then pumped and hauled if leachate is generated.

III.D.1. Leachate Storage

The leachate pumped from Phases I and II through a 4-inch PVC C-900 force main pipe discharges to a 1,000,000 gallon capacity leachate lagoon. The lagoon is lined with a composite liner system similar to the liner system for Phase I of the landfill. The

1,000,000 gallon capacity is estimated to store 38 days of leachate.

III.D.2. Leachate Disposal

Leachate from the lagoon is pumped to a piggy back station located off-site across the Banister River at the Chatham South Industrial Park. The Pittsylvania County Service Authority (PCSA) will accept up to 8,000 gallons per day of leachate. Leachate will be analyzed and characterized in accordance with the Virginia Hazardous Waste Management Regulations (9VAC20-60) to determine if it is a characteristic hazardous waste.

End of Module

PERMIT MODULE X

DETECTION GROUNDWATER MONITORING REQUIREMENTS

The purpose of Detection monitoring is to ensure the earliest possible recognition of a landfill impact to the uppermost aquifer at levels, which exceed background.

X.A. GROUNDWATER COMPLIANCE POINT

X.A.1. Uppermost Aquifer

The groundwater monitoring compliance point is the uppermost aquifer [250.A.2.a] which encompasses the entire thickness between the first encounter with groundwater (not to include any perched water) and the first encounter with a confining unit forming the lower boundary of the uppermost aquifer [A.3.f.(1).(b/c)].

X.A.2. Monitoring Well Locations

All wells in the monitoring network, including those at the disposal unit boundary, or at an alternate compliance point [250.A.3.a.(3)], shall be installed within the permitted facility boundary and be screened within the uppermost aquifer unless a variance [250.A.3.a.(2)] meeting the requirements of 740.B has been granted.

X.A.3. Location Restrictions

No monitoring well serving the function defined under 250.A.3.a.(2) can be:

X.A.3.a. located at a distance more than 500 feet away from the disposal unit boundary
or

X.A.3.b. outside of the facility boundary [740.A].

X.B. MONITORING NETWORK REQUIREMENTS

X.B.1. The following Performance Standards shall be met:

X.B.1.a. Network requirements of 250.A.2.a and A.3.a, b, f.

X.B.1.b. Wells requiring replacement due to non-performance shall be reported to the Department within 30 days of recognizing the non-performance. The notification shall include a site plan depicting the proposed location for the replacement well(s) for Department review [530.C.1].

X.B.1.c. Wells that require replacement must be replaced prior to the next regularly scheduled groundwater sampling event unless the Director has granted an extension to meeting the monitoring system compliance requirements under 250.A.3.a.

X.B.1.d. Any wells that require abandonment shall be sealed and abandoned in accordance with existing EPA Resource Conservation and Recovery Act (RCRA) guidance as well as any applicable state or local requirements.

X.B.2. Installation, Operations and Maintenance

All wells shall be installed, operated and maintained during the life of the monitoring program in accordance with requirements of 250.A.3.c-e.

X.B.3. Well Designations

The following wells shall be included in the groundwater monitoring network:

Upgradient Wells	Phase I Down-gradient Wells	Phase II Down-gradient Wells	Piezometers ¹	
MW-1A	MW-3	MW-102	MW-1R	MW-25C
MW-101	MW-4	MW-104A	MW-3NES	MW-25NES(D)
	MW-11	MW-108	MW-6	MW-27A
	MW-13A	MW-109A	MW-7	MW27B(S)
	MW-14R	MW-110	MW-8	MW-28C(S)
	MW-23		MW-9	MW-28D
	MW-27		MW-10	MW-103
	MW-28A		MW-14	MW-105
			MW-16B(S)	PZ-1
			MW-16B(M)	PZ-2
			MW-16B(D)	PZ-3
			MW-17	PZ-4
			MW-20	PZ-5
			MW-22	PZ-6
			MW-25A	

Note:

1. Piezometers are wells monitored as needed for static groundwater elevations only to determine groundwater flow direction. Refer to permit condition X.C.1.a for additional information.

X.C. AQUIFER INFORMATION

X.C.1. Aquifer Data Acquisition - Requirements

X.C.1.a. Static groundwater elevations [250.A.4.c] shall be:

- X.C.1.a.(1). measured in all monitoring wells.
- X.C.1.a.(2). measured to an accuracy of 0.01 foot.
- X.C.1.a.(3). measured each time groundwater is sampled on site.
- X.C.1.a.(4) obtained from all wells in the network within a single 24 hour period to avoid temporal variations/fluctuations in the groundwater table.

X.C.1.b Groundwater flow rate and direction [250.A.4.c] shall be:

- X.C.1.b.(1). determined each time groundwater is sampled on site,

X.C.1.b.(2). calculated using technical methods accepted for use in EPA RCRA groundwater programs.

X.C.2. Aquifer Data Acquisition - Response

X.C.2.a. The Permittee shall evaluate the function of each monitoring network well each time groundwater is sampled. If the evaluation shows that one or more of the well(s) no longer functions in a manner that meets the requirements of 250.A.3.e, the Permittee shall:

X.C.2.a.(1). Within 30 days of recognizing the non-performance, notify the Department of the need to modify the number, location, or depth of the monitoring wells, and provide for Department review, proposed locations for new (replacement) monitoring wells keyed to a site plan.

X.C.2.a.(2). Complete additions or modifications to the network, prior to the next regularly scheduled groundwater sampling event, unless an extension has been granted by the Director for meeting the monitoring system compliance requirements under 250.A.3.a.

X.D. SAMPLING ACTIONS

The Permittee shall:

X.D.1. Meet the field sampling and laboratory procedures of 250.A.4.a.

X.D.2. Use the analytical methods of EPA SW-846 as amended [250.A.4.b].

X.D.3. Not filter groundwater samples prior to analysis [250.A.4.b].

X.D.4. Sample all Detection constituents referenced under Table 3.1 Column A [250.B.2.a].

X.E. SAMPLING FREQUENCY

X.E.1. The Permittee shall, during the active life and post-closure care periods, sample groundwater and analyze for the required Table 3.1 constituents in all monitoring wells on at least a semi-annual basis [250.B.2.a.(2)] unless the quarterly wetlands provisions apply to an active sanitary landfill [250.B.1.e.].

X.E.2. The length of the semi-annual sampling period shall not conflict with the requirements of 9 VAC 20-81-10.

X.F. DETERMINATION OF BACKGROUND

X.F.1. The Permittee shall establish site background values [250.A.4.d -f] for all Detection monitoring constituents within the timeframes of 250.B.2.a.(1).

X.G. STATISTICAL PROCEDURES

When evaluating the groundwater sampling event results, the Permittee shall:

- X.G.1 within 30 days of completion of the laboratory analysis for each sampling event [250.A.4.h.(2)], determine whether or not there is a statistically significant increase over site background for each monitoring constituent using a method meeting the requirements of 250.A.4.h.(1) and A.4.g and D.
- X.G.2. For the purpose of this Permit, laboratory analysis is considered complete upon issuance of the final analytical report under laboratory signature.

X.H. BACKGROUND EXCEEDANCE ACTIONS

If the statistical comparisons required under the monitoring program show no exceedances, the Permittee shall continue monitoring groundwater within the current program.

When a Permittee has determined there has been a SSI exceedance over site background for one or more of the Detection monitoring constituents, the Permittee shall upon the end of the 30-day SSI determination period allowed by 250.A.4.h.(2), notify the Director within the timeframes of 250.B.2.b.(1)(a). The notification must indicate which groundwater monitoring constituents have shown statistically significant increases over background and describe whether the Permittee shall:

- X.H.1. initiate Assessment monitoring described under 250.B.3 within the timeframes of 250.B.3.a., or
- X.H.2. submit an Alternate Source Demonstration meeting the content requirements and timeframes of 250.A.5.a., b. Unless Director approval of the demonstration is obtained, the Permittee shall follow the sampling requirements and timeframes required of Assessment monitoring.

X.I. RECORD-KEEPING REQUIREMENTS

The Permittee shall retain all records identified under 250.E.1 as well as 530.B.1 and B.2 throughout the facility active life (including closure) and post-closure care period. The records shall be retained at the facility or another location approved by the Director.

X.J. REPORTING REQUIREMENTS

- X.J.1. Annual groundwater reports containing, at a minimum, content under 250.E.2.a.(2), shall be submitted to the Director within the timeframes of 250.E.2.a.(1).
- X.J.2. Semi-annual groundwater reports containing at a minimum, groundwater flow rate and direction determinations [250.A.4.c], statistical comparison results [250.B.2] and content defined under 250.E.2.b.(1), shall be submitted to the Department within the timeframes of 250.E.2.b.(1) unless qualifying facilities have received a variance from this requirement.
- X.J.3. Within 44 days of well completion, the Permittee shall supply the Director a Well Installation Report containing the well number, surveyed elevation, boring log [250.A.3.d], casing length, total depth, and a completion diagram [250.E.1.c] for each monitoring well, along with a certification [250.A.3.g] from a qualified groundwater scientist that the monitoring wells have been installed in accordance with the submitted plans.
- X.J.4. Within 44 days of well abandonment, the Permittee shall supply the Director a Well

Abandonment Report containing information including field methods utilized, and a certification from a qualified groundwater scientist verifying the well abandonment activities met all applicable requirements [250.E.1.c].

X.K. NOTIFICATION REQUIREMENTS

- X.K.1. Background SSI Notifications shall be submitted to the Director within the timeframes noted under 250.B.2.b.(1)(a).
- X.K.2. Well Non-Performance Notifications shall be submitted to the Director within 30 days of recognizing the non-performance issue in order to meet 530.C.1 - 3.

X.L. MISCELLANEOUS ALLOWANCES

- X.L.1. Use of Alternate Site Background. The Permittee may request the Director allow site background to be developed using wells that are not hydrologically upgradient of the disposal unit as long as the request addresses the technical criteria contained under 250.A.4.e and is certified by a qualified groundwater scientist. Until such time as Director approval is obtained, background shall be determined by sampling wells which are upgradient of the disposal unit and meet the requirements of 250.A.3.f.(2).
- X.L.2. Use of Alternate Statistical Method. The Permittee may request the Director allow the use of an Alternate Statistical Method as long as the Permittee can demonstrate the alternate method can meet the technical criteria defined under 250.D.2. Until such time as Director approval is obtained, the statistical test(s) applied to site groundwater data shall be from 250.D.1. Whichever method is approved for use at the site, the method should be listed in the facility Groundwater Monitoring Plan as required under 250.A.4.g.
- X.L.3. Verification Sampling. The Permittee, at any time within the 30 day statistical determination period defined under 250.A.4.h.(2), may obtain verification samples. Undertaking verification sampling shall not alter the timeframes associated with determining or reporting a statistically significant increase as otherwise defined under 250.A.4.i.
- X.L.4. Data Validation. The owner or operator may at any time within the 30 day statistical determination period defined under 250.A.4.h.(2) undertake third-party data validation of the analytical data received from the laboratory. Undertaking such validation efforts shall not alter the timeframes associated with determining or reporting a statistically significant increase as otherwise defined under 250.A.4.j.
- X.L.5. When the Permittee recognizes a failure to submit any relevant facts or has submitted incorrect information in any groundwater monitoring report to the Director, he shall, within 7 days, submit such omitted facts or the correct information with a full explanation [530.E].

X.M. MISCELLANEOUS DEMONSTRATIONS

- X.M.1. To address an exceedance which is the result of something other than a release of solid waste constituents, the Permittee may submit a report entitled Alternate Source Demonstration, certified by a qualified groundwater scientist, for review by the Director within 90 days of providing the SSI notification unless the submission and approval timeframe has been extended by the Director for good cause [250.A.5.b].

- X.M.1.a. If a successful demonstration of an alternate source for the noted increase is made by the Permittee and approved by the Director within the 90 day timeframe, the Permittee may continue in the applicable monitoring program as defined in this Permit Module.
- X.M.1.b. If a successful demonstration of an alternate source for the noted increase is not made by the Permittee within the 90 day timeframe, the Permittee shall take actions required under 250.A.5.c.(3) within Regulatory timeframes unless an extension has been granted by the Director.
- X.M.2. The Permittee may submit to the Director a Multi-unit Groundwater Monitoring System Demonstration containing the content defined under A.3.b and certified by a qualified groundwater scientist, when he feels that the implementation of such a monitoring system will be as protective of human health and the environment as individual systems would be.
 - X.M.2.a. If a successful demonstration is made and approved by the Director, the Permittee may discontinue use of individual monitoring systems and institute the monitoring of a multi-unit system.
 - X.M.2.b. If a successful demonstration is not made, the Permittee shall initiate (or continue) to monitor individual networks under the applicable monitoring program.
- X.M.3. The Permittee may request the Director suspend groundwater monitoring requirements by submitting a No-Potential-Migration Demonstration, certified by a qualified groundwater scientist, meeting the technical requirements of 250.A.1.c.
 - X.M.3.a. If a successful demonstration is made and approved by the Director, the Permittee may suspend groundwater monitoring actions.
 - X.M.3.b. If a successful demonstration is not made, the Permittee shall continue monitoring as required under B.2.

X.N. PERMIT DOCUMENTS

As required under 470.A.1, the Permittee must have Design Plans that include detailed instructions concerning groundwater monitoring [470.A.1.g]. These detailed groundwater monitoring instructions must at a minimum cover the items listed under 250.A.4.a and applicable information under 250 and 260. The document containing these instructions, called the Groundwater Monitoring Plan, shall be placed in the file record.

It shall be the responsibility of the Permittee to update this monitoring plan as needed [250.B.3.e], which may include actions otherwise defined under 600.A – F, if changes to the monitoring program have taken place since original Plan development.

X.O. LIMITATIONS/AUTHORITIES

X.O.1. Solid waste shall not be deposited in or permitted to enter any surface waters or groundwater [240.C.10].

- X.O.2. Should information contained in any Permittee authored document referenced in this Module conflict with any requirement or condition of this Module, or requirements found within 9 VAC 20-81-10 et seq., as amended, the Module condition and/or Regulatory requirement shall prevail over the language in the Permittee supplied document [35.D and 490.E] unless it can be demonstrated that a Variance from that regulatory requirement has been granted by the Director following the procedures under 700 et seq.
- X.O.3. The groundwater monitoring and reporting requirements set forth here are minimum requirements. The Director may require, by amending the Permit, any owner or operator to install, operate, and maintain a groundwater monitoring system and program that contains requirements more stringent than those of the Regulations whenever it is determined that such requirements are necessary to prevent significant adverse effects on public health or the environment [250.A.2.c].

End of Module

PERMIT MODULE XI

ASSESSMENT GROUNDWATER MONITORING REQUIREMENTS

The purpose of Assessment monitoring is to ensure the earliest possible recognition of a landfill impact to the uppermost aquifer at levels, which exceed groundwater protection standards and therefore may trigger potential groundwater remediation.

XI.A. GROUNDWATER COMPLIANCE POINT

XI.A.1. Uppermost Aquifer

The groundwater monitoring compliance point is the uppermost aquifer [250.A.2.a] which encompasses the entire thickness between the first encounter with groundwater (not to include any perched water) and the first encounter with a confining unit forming the lower boundary of the uppermost aquifer [A.3.f.(1).(b/c)].

XI.A.2. Monitoring Well Locations

All wells in the monitoring network, including those at the disposal unit boundary, or at an alternate compliance point [250.A.3.a.(3)], shall be installed within the permitted facility boundary and be screened within the uppermost aquifer unless a variance [250.A.3.a.(2)] meeting the requirements of 740.B has been granted.

XI.A.3. Location Restrictions

No monitoring well serving the function defined under 250.A.3.a.(2) can be:

XI.A.3.a. located at a distance more than 500 feet away from the disposal unit boundary
or

XI.A.3.b. outside of the facility boundary [740.A].

XI.B. MONITORING NETWORK REQUIREMENTS

XI.B.1. The following Performance Standards shall be met:

XI.B.1.a. Network requirements of 250.A.2.a and A.3.a, b, f.

XI.B.1.b. Wells requiring replacement due to non-performance shall be reported to the Department within 30 days of recognizing the non-performance. The notification shall include a site plan depicting the proposed location for the replacement well(s) for Department review [530.C.1].

XI.B.1.c. Wells that require replacement must be replaced prior to the next regularly scheduled groundwater sampling event unless the Director has granted an extension to meeting the monitoring system compliance requirements under 250.A.3.a.

XI.B.1.d. Any wells that require abandonment shall be sealed and abandoned in accordance with existing EPA Resource Conservation and Recovery Act (RCRA) guidance as well as any applicable state or local requirements.

XI.B.2. Installation, Operations and Maintenance

All wells shall be installed, operated and maintained during the life of the monitoring program in accordance with requirements of 250.A.3.c-e.

XI.B.3. Well Designations

The following wells shall be included in the groundwater monitoring network:

Upgradient Wells	Phase I Down-gradient Wells	Phase II Down-gradient Wells	Piezometers ¹	
MW-1A	MW-3	MW-102	MW-1R	MW-25C
MW-101	MW-4	MW-104A	MW-3NES	MW-25NES(D)
	MW-11	MW-108	MW-6	MW-27A
	MW-13A	MW-109A	MW-7	MW27B(S)
	MW-14R	MW-110	MW-8	MW-28C(S)
	MW-23		MW-9	MW-28D
	MW-27		MW-10	MW-103
	MW-28A		MW-14	MW-105
			MW-16B(S)	PZ-1
			MW-16B(M)	PZ-2
			MW-16B(D)	PZ-3
			MW-17	PZ-4
			MW-20	PZ-5
			MW-22	PZ-6
			MW-25A	

Note:

1. Piezometers are wells monitored as needed for static groundwater elevations only to determine groundwater flow direction. Refer to permit condition XI.C.1.a. for additional information.

XI.C. AQUIFER INFORMATION

XI.C.1. Aquifer Data Acquisition - Requirements

XI.C.1.a. Static groundwater elevations [250.A.4.c] shall be:

- XI.C.1.a.(1). measured in all monitoring wells.
- XI.C.1.a.(2). measured to an accuracy of 0.01 foot.
- XI.C.1.a.(3). measured each time groundwater is sampled on site.
- XI.C.1.a.(4) obtained from all wells in the network within a single 24 hour period to avoid temporal variations/fluctuations in the groundwater table.

XI.C.1.b Groundwater flow rate and direction [250.A.4.c] shall be:

- XI.C.1.b.(1). determined each time groundwater is sampled on site,

XI.C.1.b.(2). calculated using technical methods accepted for use in EPA RCRA groundwater programs.

XI.C.2. Aquifer Data Acquisition - Response

XI.C.2.a. The Permittee shall evaluate the function of each monitoring network well each time groundwater is sampled. If the evaluation shows that one or more of the well(s) no longer functions in a manner that meets the requirements of 250.A.3.e, the Permittee shall:

XI.C.2.a.(1). Within 30 days of recognizing the non-performance, notify the Department of the need to modify the number, location, or depth of the monitoring wells, and provide for Department review, proposed locations for new (replacement) monitoring wells keyed to a site plan.

XI.C.2.a.(2). Complete additions or modifications to the network, prior to the next regularly scheduled groundwater sampling event, unless an extension has been granted by the Director for meeting the monitoring system compliance requirements under 250.A.3.a.

XI.D. SAMPLING ACTIONS

The Permittee shall:

XI.D.1. Meet the field sampling and laboratory procedures of 250.A.4.a.

XI.D.2. Use the analytical methods of EPA SW-846 as amended [250.A.4.b].

XI.D.3. Not filter groundwater samples prior to analysis [250.A.4.b].

XI.D.4. Sample all Assessment constituents referenced under Table 3.1 Column B [250.B.3.a] during annual sampling events and all Detection constituents referenced under Table 3.1 Column A as well as those constituents in Column B that were previously detected [250.B.3.c.(2)] during semiannual sampling events.

XI.E. SAMPLING FREQUENCY

XI.E.1. The Permittee shall, during the active life and post-closure care periods, sample groundwater and analyze for the required Table 3.1 constituents in all monitoring wells on at least a semi-annual basis [250.B.3.c.(2)] unless the quarterly wetlands provisions apply to an active sanitary landfill.

XI.E.2. The length of the semi-annual sampling period shall not conflict with the requirements of 9 VAC 20-81-10.

XI.E.3. Upon triggering the need for Assessment monitoring, the initial Assessment sampling event shall be completed in a timeframe meeting the requirements of 250.B.3.a.

XI.F. DETERMINATION OF BACKGROUND & GPS

- XI.F.1. The Permittee shall establish site-specific Assessment background values [250.A.4.d. – f.] for all detected constituents within the timeframes of 250.B.3.c.(3)
- XI.F.2. Groundwater Protection Standards (GPS) established using the process defined under 250.A.6.b, for each detected Assessment monitoring constituent shall be:
 - X.F.1.a. proposed within timelines of 250.B.3.d., and
- XI.F.3. Groundwater Protection Standards shall be updated as follows:
 - XI.F.3.a. Federal Maximum Contaminant Level-based GPS or department approved background by following the process under 250.A.6.d.
 - XI.F.3.b. Alternate Concentration Limit-based GPS by following the process under 250.A.6.e.

XI.G. STATISTICAL PROCEDURES

When evaluating the groundwater sampling event results, the Permittee shall:

- XI.G.1 within 30 days of completion of the laboratory analysis for each sampling event [250.A.4.h.(2)], determine whether or not there is a statistically significant increase over site background and GPS for each monitoring constituent using a method meeting the requirements of 250.A.4.h.(1) and A.4.g and D.
 - XI.G.1.a. For GPS based on Federal Maximum Contaminant Level or ACLs, the comparison of analytical results from the downgradient wells shall be based on either a point to point comparison to the GPS, or a statistical comparison using 95% Lower Confidence Limit derived from at a minimum four independent sampling events completed during the compliance period.
 - XI.G.1.b. For GPS based on statistically calculated site background, the comparison of analytical results from the downgradient wells shall be based on a point to point comparison to the GPS.
- XI.G.2. For the purpose of this Permit, laboratory analysis is considered complete upon issuance of the final analytical report under laboratory signature.

XI.H. GPS EXCEEDANCE ACTIONS

If the statistical comparisons required under the monitoring program show no exceedances, the Permittee shall continue monitoring groundwater within the current program.

When a Permittee has determined there has been a SSI exceedance over GPS for one or more of the Assessment monitoring constituents, the Permittee shall notify the Director within the timeframe of 250.B.3.f.(3)(a). The notification must indicate which groundwater monitoring constituents have shown statistically significant increases over GPS and describe whether the Permittee shall:

- XI.H.1. initiate Corrective Actions described under 260.C within the timeframes of 260.C.1

including defining the horizontal and lateral extent of the GPS exceeding release [260.C.1.a], as well as the actions described under 260.C.1.b-e. or

- XI.H.2. submit an Alternate Source Demonstration meeting the content requirements and timeframes of 250.A.5.a., b. Unless Director approval for the demonstration is obtained, the Permittee shall follow the sampling requirements and timeframes required of Corrective Action Program [260.C.] in response to a GPS exceedance.

XI.I. RECORD-KEEPING REQUIREMENTS

The Permittee shall retain all records identified under 250.E.1 as well as 530.B.1 and B.2 throughout the facility active life (including closure) and post-closure care period. The records shall be retained at the facility or another location approved by the Director.

XI.J. REPORTING REQUIREMENTS

- XI.J.1. Annual groundwater reports containing, at a minimum, content under 250.E.2.a.(2), shall be submitted to the Director within the timeframes of 250.E.2.a.(1).

- XI.J.2. Semi-annual groundwater reports containing at a minimum, groundwater flow rate and direction determinations [250.A.4.c], statistical comparison results [250.B.3] and content defined under 250.E.2.b.(1), shall be submitted to the Department within the timeframes of 250.E.2.b.(1) unless qualifying facilities have received a variance from this requirement.

- X.J.3. Within 30 days of establishing facility background, or re-establishing background due to the installation of new monitoring wells, or a change in sampling technique, the Permittee shall report the background values and statistical computations forming the basis for those values in a report entitled Facility Background Determination Report.

- XI.J.4. Within 44 days of well completion, the Permittee shall supply the Director a Well Installation Report containing the well number, surveyed elevation, boring log [250.A.3.d], casing length, total depth, and a completion diagram [250.E.1.c] for each monitoring well, along with a certification [250.A.3.g] from a qualified groundwater scientist that the monitoring wells have been installed in accordance with the submitted plans.

- XI.J.5. Within 44 days of well abandonment, the Permittee shall supply the Director a Well Abandonment Report containing information including field methods utilized, and a certification from a qualified groundwater scientist verifying the well abandonment activities met all applicable requirements [250.E.1.c].

- XI.J.6. Upon issuance of GPS, the Permittee shall place the GPS listing in the operating record [250.A.6.c] and update that record as needed upon any changes in GPS.

XI.K. NOTIFICATION REQUIREMENTS

- XI.K.1. GPS SSI Notifications shall be submitted to the Director within the timeframes noted under 250.B.3.f.(3)(a).

- XI.K.2. Well Non-Performance Notifications shall be submitted to the Director within 30 days of recognizing the non-performance issue in order to meet 530.C.1 - 3.

- XI.K.3. Off-site Plume Notifications shall be submitted to the affected landowner [260.C.1.b] and copied to the Director within 15 days of identifying the impacts.
- XI.K.4. Table 3.1 Column B Detect Notifications shall be submitted to the Director within the timeframes noted under B.3.c.(1).
- XI.K.5. Return to Detection Monitoring Notification shall be submitted to the Director [B.3.f.(1)] no less than 30-days prior to re-instating Detection monitoring.

XI.L. MISCELLANEOUS ALLOWANCES

- XI.L.1. Use of Alternate Site Background. The Permittee may request the Director allow site background to be developed using wells that are not hydrologically upgradient of the disposal unit as long as the request addresses the technical criteria contained under 250.A.4.e and is certified by a qualified groundwater scientist. Until such time as Director approval is obtained, background shall be determined by sampling wells which are upgradient of the disposal unit and meet the requirements of 250.A.3.f.(2).
- XI.L.2. Use of Alternate Statistical Method. The Permittee may request the Director allow the use of an Alternate Statistical Method as long as the Permittee can demonstrate the alternate method can meet the technical criteria defined under 250.D.2. Until such time as Director approval is obtained, the statistical test(s) applied to site groundwater data shall be from 250.D.1. Whichever method is approved for use at the site, the method should be listed in the facility Groundwater Monitoring Plan as required under 250.A.4.g.
- XI.L.3. Verification Sampling. The Permittee, at any time within the 30 day statistical determination period defined under 250.A.4.h.(2), may obtain verification samples. Undertaking verification sampling shall not alter the timeframes associated with determining or reporting a statistically significant increase as otherwise defined under 250.A.4.i.
- XI.L.4. Data Validation. The owner or operator may at any time within the 30 day statistical determination period defined under 250.A.4.h.(2) undertake third-party data validation of the analytical data received from the laboratory. Undertaking such validation efforts shall not alter the timeframes associated with determining or reporting a statistically significant increase as otherwise defined under 250.A.4.j.
- XI.L.5. When the Permittee recognizes a failure to submit any relevant facts or has submitted incorrect information in any groundwater monitoring report to the Director, he shall, within 7 days, submit such omitted facts or the correct information with a full explanation [530.E].
- XI.L.6. The Permittee may request the Director allow an alternate frequency for the repeated sampling of the full Table 3.1 Column B constituent list as long as the request addresses the technical items contained under 250.B.3.b.(3), and is certified by a qualified groundwater scientist. Until such time as Director Approval is obtained, sampling for the full Table 3.1 Column B shall continue on an annual basis consistent with 250.B.3.a.
- XI.L.7. In an effort to reduce sampling costs, the Permittee may request the Director:
 - XI.L.7.a. allow a subset of wells to be sampled for the annual full Table 3.1 Column B

constituent list [250.B.3.b.(1)] as long as the request contains information showing that wells not included in the subset are 1] devoid of any Table 3.1 column B detects, 2] the well shows no exceedances over background for any Table 3.1 Column A constituents, and 3] the request is certified by a qualified groundwater scientist. Until such time as Director Approval is obtained, all site wells shall be sampled annually for the Table 3.1 Column B constituent list consistent with 250.B.3.a, and/or

XI.L.7.b. allow for the deletion of certain Table 3.1 Column B constituents from the sampling list [250.B.3.b.(2)] as long as the request contains information showing that the constituents are not reasonably expected to be in or derived from the waste mass, and the request is certified by a qualified groundwater scientist. Until such time as Director Approval is obtained, all site wells shall be sampled annually for the full Table 3.1 Column B constituent list consistent with 250.B.3.a.

XI.M. MISCELLANEOUS DEMONSTRATIONS

XI.M.1. To address an exceedance which is the result of something other than a release of solid waste constituents, the Permittee may submit a report entitled Alternate Source Demonstration, certified by a qualified groundwater scientist, for review by the Director within 90 days of providing the SSI notification unless the submission and approval timeframe has been extended by the Director for good cause [250.A.5.b].

XI.M.1.a. If a successful demonstration of an alternate source for the noted increase is made by the Permittee and approved by the Director within the 90 day timeframe, the Permittee may continue in the applicable monitoring program as defined in this Permit Module.

XI.M.1.b. If a successful demonstration of an alternate source for the noted increase is not made by the Permittee within the 90 day timeframe, the Permittee shall take actions required under 250.A.5.c.(3) within Regulatory timeframes unless an extension has been granted by the Director.

XI.M.2. The Permittee may submit to the Director a Multi-unit Groundwater Monitoring System Demonstration containing the content defined under A.3.b and certified by a qualified groundwater scientist, when he feels that the implementation of such a monitoring system will be as protective of human health and the environment as individual systems would be.

XI.M.2.a. If a successful demonstration is made and approved by the Director, the Permittee may discontinue use of individual monitoring systems and institute the monitoring of a multi-unit system.

XI.M.2.b. If a successful demonstration is not made, the Permittee shall initiate (or continue) to monitor individual networks under the applicable monitoring program.

XI.M.3. The Permittee may request the Director suspend groundwater monitoring requirements by submitting a No-Potential-Migration Demonstration, certified by a qualified groundwater scientist, meeting the technical requirements of 250.A.1.c.

XI.M.3.a. If a successful demonstration is made and approved by the Director, the Permittee may suspend groundwater monitoring actions.

XI.M.3.b. If a successful demonstration is not made, the Permittee shall continue monitoring as required under B.3.

XI.N. PERMIT DOCUMENTS

As required under 470.A.1, the Permittee must have Design Plans that include detailed instructions concerning groundwater monitoring [470.A.1.g]. These detailed groundwater monitoring instructions must at a minimum cover the items listed under 250.A.4.a and applicable information under 250 and 260. The document containing these instructions, called the Groundwater Monitoring Plan, shall be placed in the file record.

It shall be the responsibility of the Permittee to update this monitoring plan as needed [250.B.3.e], which may include actions otherwise defined under 600.A – F, if changes to the monitoring program have taken place since original Plan development.

XI.O. LIMITATIONS/AUTHORITIES

XI.O.1. Solid waste shall not be deposited in or permitted to enter any surface waters or groundwater [240.C.10].

XI.O.2. Should information contained in any Permittee authored document referenced in this Module conflict with any requirement or condition of this Module, or requirements found within 9 VAC 20-81-10 et seq., as amended, the Module condition and/or Regulatory requirement shall prevail over the language in the Permittee supplied document [35.D and 490.E] unless it can be demonstrated that a Variance from that regulatory requirement has been granted by the Director following the procedures under 700 et seq.

XI.O.3. The groundwater monitoring and reporting requirements set forth here are minimum requirements. The Director may require, by amending the Permit, any owner or operator to install, operate, and maintain a groundwater monitoring system and program that contains requirements more stringent than those of the Regulations whenever it is determined that such requirements are necessary to prevent significant adverse effects on public health or the environment [250.A.2.c].

End of Module

PERMIT MODULE XII CLOSURE

XII.A. CLOSURE PLAN MODIFICATION

- XII.A.1. The closure plan shall be amended any time changes in operating plans or landfill design affect the closure plan.
- XII.A.2. Amended closure plans shall be submitted to the department at least 180 days before the date the facility expects to begin construction activities related to closure.

XII.B. TIME ALLOWED FOR CLOSURE

The facility shall close each unit and install a final cover system in accordance with the timeframes specified in 9 VAC 20-81-140.B.1.e and 9 VAC 20-81-160.

XII.C. FINAL COVER SYSTEM

The landfill final cover design profile for Phase II from top to bottom is as follows:

- 6-inch vegetative layer;
- 18-inch protective soil layer;
- geocomposite drainage layer;
- 40-mil textured LLDPE;
- geosynthetic clay liner;
- 18-inch compacted cap foundation; and
- 12-inches of intermediate cover

Phase I of the landfill was closed on August 9, 2007. The closure cap consists of the following components from top to bottom:

- 6-inch vegetative layer;
- 18-inch protective soil layer;
- geocomposite drainage layer;
- 40-mil textured LLDPE;
- geosynthetic clay liner;
- 18-inch compacted cap foundation; and
- 12-inches of intermediate cover

The Special Waste Handling Trenches were closed in 2000 with the following closure cap design from top to bottom:

- 12-inch vegetative layer;
- 18 inches compacted clay soil with a permeability of less than or equal to 1×10^{-5} cm/sec
- Soil foundation layer

Trench 1-A and 1-B/C were closed with three feet of compacted soil cover and a minimum of six-inches of impermeable clay to seal the waste mass. Trench 1-A was closed in 1991 and 1-B/C was closed in 1998.

The Pre-1988 Trenches closed prior to December 1988 with soil caps.

XII.D. CLOSURE CERTIFICATION

XII.D.1. Following construction of the final cover system for each unit, certification, signed by a registered professional engineer, shall be submitted verifying that closure has been completed in accordance with the permit, approved plans, and specifications. A certification will be required for each capped landfill phase and shall include the results of the CQA/QC requirements under 9VAC20-81-130.Q.1.b.(6).

XII.D.2. Following the closure of all units, certification, signed by a registered professional engineer, shall be submitted verifying that closure has been completed in accordance with the requirements of 9VAC20-81-160.D.5.a. through 5.c., which require posting a sign at the facility entrance and erecting suitable barriers to prevent access; submitting a survey plat to the local land reporting authority; and recording a notation on the deed to the facility property.

End of Module

PERMIT MODULE XIII POST-CLOSURE CARE

XIII.A. POST-CLOSURE CARE REQUIREMENTS

XIII.A.1. The facility shall conduct post-closure care of the landfill in accordance with its approved Post-closure Care Plan.

XIII.A.1.a. Leachate shall be managed in accordance with 9 VAC 20-81-210 and the facility's Leachate Management Plan. If a leachate seep(s) occurs, the owner or operator shall repair the seep(s) and follow the procedures outlined in 9 VAC20-81-210.F.

XIII.A.1.b. Landfill gas shall be monitored in accordance with 9VAC20-81-200 and the facility's Landfill Gas Management Plan. The gas management system shall be inspected at a rate consistent with the system's monitoring frequency.

XIII.A.1.c. Groundwater shall be monitored in accordance with 9VAC20-81-250, Module X, and Module XI and the respective groundwater permit documents as applicable. The groundwater monitoring system shall be inspected at a rate consistent with the system's monitoring frequency.

XIII.A.2. Amended Post-closure Care Plans shall be submitted to the department for review and approval by the director.

XIII.B. POST-CLOSURE PERIOD

XIII.B.1. Post-closure care shall be conducted for 30 years.

XIII.B.2. The length of the post-closure care period may be decreased by the director if the owner or operator demonstrates that the reduced period is equally protective of human health and the environment and the demonstration is approved by the director. This demonstration shall contain:

XIII.B.2.a. Certification, signed by the owner or operator and a professional engineer licensed in the Commonwealth, verifying that decreasing the post-closure care period will be equally protective of human health and the environment; and

XIII.B.2.b. An evaluation prepared by a professional engineer or professional geologist licensed in the Commonwealth, which assesses and evaluates the landfill's potential for harm to human health and the environment in the event that post-closure monitoring and maintenance are discontinued.

XIII.B.3. The facility shall continue post-closure care and monitoring until such time that the department approves termination or the post-closure care and/or monitoring activity.

XIII.C. CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

Not less than 180 days prior to the completion of the post-closure monitoring and maintenance period as prescribed by the Board's regulations or by the Director, the owner or operator shall submit to the Director:

- XIII.C.1. Certification, signed by the owner or operator and a professional engineer licensed in the Commonwealth, verifying that post-closure monitoring and maintenance have been completed in accordance with the facility's Post-closure Care Plan; and
- XIII.C.2. An evaluation prepared by a professional engineer or professional geologist licensed in the Commonwealth, which assesses and evaluates the landfill's potential for harm to human health and the environment in the event that post-closure monitoring and maintenance are discontinued.

If the Director determines that continued post-closure monitoring or maintenance is necessary to prevent harm to human health or the environment, he shall extend the post-closure period for such additional time as the Director deems necessary to protect human health and the environment and shall direct the owner or operator to submit a revised post-closure plan and to continue post-closure monitoring and maintenance in accordance therewith. Requirements for financial assurance shall apply throughout such extended post-closure period.

End of Module

PERMIT MODULE XIV MNA-BASED AND METALS ATTENUATION BASED CORRECTIVE ACTION 9 VAC 20-81-260

XIV.A. PURPOSE

This Module describes the requirements applicable to the remedial technology implemented on site as a result of an exceedance of groundwater protection standards (GPS).

The following permit documents outline the groundwater remediation:

- Corrective Action Plan
- Corrective Action Groundwater Monitoring Plan including a Surface Water Sampling Plan

XIV.B. INTERIM MEASURES

At any time during the Corrective Action process, the Permittee or Director may determine that interim measures are required. Nothing in this Permit shall preclude the Permittee from performing interim measures at any time if required to reduce or eliminate the risk to human health and the environment, as long as the interim measures are consistent with the goal(s) of the Corrective Action Plan. If interim measures are required by the Director, the Permittee will respond with a plan for interim measures within 60 days of the Director's notification of the need for the requirement.

XIV.C. REMEDY REQUIREMENTS

The remedy applied to the impacted aquifer shall be able to meet each of the criteria defined under 260.C.3.c.(1).

XIV.D. REMEDY DESCRIPTION

Monitored Natural Attenuation (MNA) may be appropriate for implementation in those instances where source control is in place, current trends in groundwater quality are acceptable and display evidence of biologic attenuation of the contaminant mass, the plume remains within the permitted facility boundary or off-site impacted landowners agree with its use, there is no risk to receptors on off-site property(ies) and no evidence of any current or expected cross-media transfer of groundwater contaminants to surface waters.

In those cases where GPS exceeding constituents are metals, it may be possible to implement a groundwater remedy based on the long term monitoring of geochemical parameters in the aquifer. Metal transport is often contingent upon whether or not the metal is in an 'oxidized' or 'reduced' state. This condition will be governed by the presence or absence (anoxic or reducing conditions) of free oxygen within the groundwater – as well as other reactants such as nitrate, ferric iron, and ferrous iron. In such cases, the mobility of a metal may be controlled either by natural means, or the use of a chemical catalyst/oxidant, and such controls may be successful in achieving GPS. For this case, the facility will be relying on natural in-situ processes coupled with *Long Term Performance* (LTP) monitoring.

XIV.E. REMEDY IMPLEMENTATION

- XIV.E.1. Implementation of the Corrective Action Plan and its related monitoring program begins on the date the Permit is amended to incorporate this Permit Module.
- XIV.E.2. If any remedy components are not in place at the time this permit is issued:
 - XIV.E.2.a. the Corrective Action Plan shall contain a schedule which details each phase of the remedy implementation [260.D.1.b],
 - XIV.E.2.b. during the schedule period, the Permittee shall provide to the Director, updates every 30 days during the site preparation and installation phase of any remedy component installed after permit issuance [260.D.1.b.(8).a],
 - XIV.E.2.c. design plans for any remedy component should be submitted for Department review no less than 180-days prior to component installation.
- XIV.E.3. If any condition causes a delay in the completion of the implementation schedule as outlined in the Corrective Action Plan, the Permittee must notify the Director of the problem within 7-days of recognizing the delay and amend the schedule accordingly.
- XIV.E.4. Any changes in the implementation of the remedy design or groundwater monitoring program will require a modification to the facility's Permit.
- XIV.E.5. The Director has the authority to modify the Permit for any changes to Corrective Action if any conditions of 600.E.5 or E.8, and 260.G.2 are found to be applicable.

XIV.F. ALTERNATE REMEDY PROVISIONS

Monitored Natural Attenuation (MNA) and long term performance monitoring (LTP) have been selected as the remedy of choice on site.

The Permittee or Director may determine, based on information obtained after Corrective Action has been implemented, that compliance with the requirements of 260.C.3.c.(1) are not being achieved by the remedy selected. In such cases, the Permittee shall, within 90-days of the determination:

- XIV.F.1. unless the alternate remedy is already described in the Corrective Action Plan, submit a revised Corrective Action Plan describing the alternate remedy for Department review,
- XIV.F.2. if the alternate remedy is already described in the existing Corrective Action Plan, submit any detailed design plans or monitoring component changes to the Department for review,
- XIV.F.3. modify the facility's Permit to implement an alternate remedy, unless the Permittee submits and receives Director approval for the demonstration allowed under 260.G.3.

XIV.G. REMEDY PERFORMANCE MONITORING

The permittee shall operate and maintain the groundwater monitoring wells on site as specified below, in a manner which at a minimum meets the requirements of 250.A.3.e and 260.D.1.c. Unless otherwise specified, the upgradient well as listed in Module XI shall act as the upgradient well for groundwater remediation sampling purposes as well.

GPS Exceeding Compliance Well(s)	The Associated Performance Well(s)	The Associated Sentinel Well(s)/Point(s)
PHASE I		
MW-3	MW-3ANES	SSL-3ANES ¹
MW-11	MW-15A, MW-15ANES, MW-29	MW-15BNES, SSL-2 ¹
MW-23	MW-26, MW-30	SSL-2 ¹
MW-27	MW-27B(D)	MW-27BR, MW-27C
MW-28A	MW-28C(D)	MW-28DR
PHASE II		
MW-109A	MW-109ANES	MW-109B(S), MW-109B(D)

Notes:

1. This is a surface water monitoring point that serves the purpose of a corrective action point (sentinel). Refer to module XIV.Q. for additional information on surface water monitoring.

The groundwater remediation effort shall be coupled with a monitoring system designed, capable, and operated to demonstrate:

- XIV.G.1. the areal extent (both vertical and horizontal) of the plume at concentrations which exceed background [260.D.1.c.(2)]. Because both the horizontal and vertical aspects of the plume must be monitored, the well network must include wells installed to a depth appropriate to intersect all groundwater flow paths in the aquifer.
- XIV.G.2. the effectiveness of the implemented Corrective Action Program [260.D.1.c.(3)].
- XIV.G.3. compliance with groundwater protection standards [260.D.1.c.(4)].
- XIV.G.4. whether the plume has expanded (and remains onsite) since remedy implementation.
- XIV.G.5. in the case of MNA use, successful biologic destruction of the waste mass.
- XIV.G.5. in the case of metals, successful geochemical changes in the aquifer which retard metals transport in groundwater.

XIV.H. WELL NETWORK

- XIV.H.1. Because both the horizontal and vertical aspects of the plume must be monitored, the well network must include wells installed to a depth which will intersect all groundwater flow paths.
- XIV.H.2. The permittee shall operate and maintain the Corrective Action groundwater monitoring wells on site in a manner which is at a minimum, meets 250.A.3.e and allows the network to be operated as designed for the length of the Corrective Action Program.

- XIV.H.3. Any new wells installed on site shall be constructed meeting the requirements of EPA's RCRA Groundwater Monitoring Technical Enforcement Guidance Document (TEGD).
- XIV.H.4. The Director must be notified prior to the abandonment of any site wells utilized during Corrective Action. Wells shall be abandoned following the general requirements of EPA's RCRA Groundwater Monitoring Technical Enforcement Guidance Document (TEGD) and a well abandonment report shall be transmitted under signature of a qualified groundwater professional to the Department within 30-days of completion of field activities.
- XIV.H.5. *Upgradient wells* are those which provide site-specific background data as required under 250.A.3.a.(1).
- XIV.H.6. *Compliance wells* are those wells which determine whether the landfill has impacted groundwater quality at the waste management unit boundary as required by 250.A.3.a.(2).
- XIV.H.7. *Performance wells* are those wells which measure or quantify the success of the remedy implemented. These wells, installed downgradient of each GPS exceeding well, should intercept groundwater, which displays GPS exceedances. Data obtained from these wells is used to draw a line around that portion of the aquifer which continues to exceed GPS and thus require remediation.
- XIV.H.8. *Sentinel wells* are those wells which ensure there is no expansion of the plume or impact to sensitive receptors as a result of changes in plume migration post remedy implementation. These wells should intercept groundwater which shows no impact over background such that the data obtained from them can assist in delineating the full extent of the landfill-impacted groundwater. For organics, no impact means concentrations less than the limit of detection (LOD).
- XIV.H.9. Performance and Sentinel wells must be located along the same groundwater flow path as the corresponding impacted compliance well. EPA (1999) has previously stated that any inferences about attenuation based on apparent decreases in contaminant concentrations in the downgradient direction will likely be incorrect unless wells are located along the downgradient groundwater flow path and monitored at the appropriate frequency.
- XIV.H.10. For sites implementing MNA, the Performance and Sentinel wells shall be positioned in a manner which allows providing the data defined by USEPA (1999) as being required to measure the progress or effectiveness of MNA-based remediation (USEPA, 2004). The data required by USEPA includes that which: (1) demonstrates MNA is occurring as expected, (2) can detect any changes in the geochemistry of the aquifer which may hinder MNA effectiveness, (3) identify any MNA breakdown products, (4) verifies the plume is not expanding either vertically or horizontally, (5) verifies no unacceptable impact to on site or off site receptors, (6) can detect any new releases to the environment, (7) can demonstrate the effectiveness of any institutional controls put in place to protect potential receptors, and (8) verifies clean-up goals have been met.

XIV.H.11. For metals CoC only sites, the Performance and Sentinel wells shall be positioned in a manner consistent with providing data required to measure the progress or effectiveness of the aquifer geochemistry in reducing the metals concentrations to GPS levels. The aquifer data required to demonstrate speciation includes that which: (1) demonstrates the oxidation state of the aquifer within the plume of contamination and at the 'precipitation/oxidation' boundary, (2) can measure the relationship of other aquifer parameters in assisting or hindering chemical speciation (i.e. nitrate, ferric iron, ferrous iron, pH, etc.), (3) identify the speciation forms of the metal in question, (4) verifies the plume is not expanding either vertically or horizontally, (5) verifies no unacceptable impact to on site or off site receptors, (6) can detect any new releases to the environment, and (7) verifies clean-up goals have been met.

XIV.I. MONITORING CONSTITUENTS

XIV.I.1. The permittee shall monitor all wells utilized during the Corrective Action Program for the constituents and frequencies defined in the tables below. Other wells on site shall be monitored as required under Permit Modules X and XI.

GPS Constituents of Concern (COC) are defined as any constituent on the Table 3.1 Column B sampling list which has been identified at concentrations which exceed its respective GPS. Daughter Products are defined as any constituent resulting from the biodegradation of a COC.

Monitoring Well Type	Monitoring Frequency	Constituent List	Compare Results To
Performance Wells	Semi-annually	GPS COC, plus Daughter Products, MNA Performance Parameters, and LTP Monitoring Parameters	GPS
Sentinel Wells	Same as Compliance Wells, unless as specified in a Director approved Variance	GPS COC's, plus Daughter Products	GPS

MNA Performance Parameters, and the purpose they serve, are listed in the table below. To make comparisons appropriate for the understanding of the MNA process, these parameters may need to be added to the sampling list at the site background and downgradient compliance well.

Depleted Electron Acceptors	Metabolic Products	By-	Miscellaneous
Dissolved Oxygen (DO)	Iron II		ORP
Nitrate	Methane		TOC
Sulfate	Chloride		pH
	Alkalinity		Conductivity
			Temp

LTP Monitoring Parameters, and the purpose they serve, are listed in the table below. To make comparisons appropriate for the understanding of the attenuation process, these parameters may need to be added to the sampling list at the site background and downgradient compliance well.

Electron Donors or Acceptors	Speciation By-Products	Miscellaneous
Dissolved Oxygen (DO)		ORP
Nitrate		TOC
Sulfate		pH
Iron II		Conductivity
Iron III		Temp

XIV.I.2. For the purposes of corrective action groundwater sampling:

XIV.I.2.a. the quarterly sampling period shall not exceed 90 days between sampling events unless authorized by the Director,

XIV.I.2.b. the semi-annual sampling period shall be 180 days plus or minus 30 days between sampling events unless authorized by the Director,

XIV.I.2.c. the annual sampling period shall not exceed 360 days between sampling events unless authorized by the Director.

XIV.I.3. Constituent Detects - Refers to any constituent found above the laboratory limit of detection (LOD) during any sampling event.

XIV.I.4. If a Permittee employs verification sampling, the alpha value shall be modified as outlined in the Department's most recent technical memorandum for Data Analysis Guidelines for Solid Waste Facilities. Such samples shall be obtained within the timeframe defined under 250.A.4.h.(2). Verification sampling events conducted outside this timeframe, but within the compliance period, may be submitted in the form of an Alternate Source Demonstration meeting the requirements of 250.A.5.

XIV.J. REMEDY PERFORMANCE DEMONSTRATIONS

XIV.J.1. *Corrective Action Site Evaluations (CASE)*

A report titled Corrective Action Site Evaluation (CASE) shall be submitted to the Director, with a copy provided under separate cover to the Public Data Repository, once every three years, due on the calendar date the Permit was amended to implement the chosen remedy. The Permittee shall utilize the Department's Submission Instructions for CASE reports (2012 as amended) when putting together the CASE report for submission.

The CASE reports, signed by a qualified groundwater professional, will include the material requested for within the Submission Instructions, including but not limited to:

XIV.J.1.a. The remedy type in place [260.D.1.b.(8).(d)].

- XIV.J.1.b. The concentrations of all sampled constituents identified above their respective detection limits since remedy implementation [260.D.1.b.(8).(b)].
- XIV.J.1.c. Plume maps showing the lateral and vertical extent of each constituent of concern found at levels above GPS and background [260.D.1.c.(2)].
- XIV.J.1.d. Calculated rate of contaminant migration during the CASE period [260.D.1.c.(1)].
- XIV.J.1.e. A groundwater potentiometric surface map based on the most recent groundwater elevation data.
- XIV.J.1.f. A discussion of the progress during the CASE period toward reaching GPS including any revisions needed to the timelines initially provided in the Corrective Action Plan [260.D.1.b.(8).(c, e, and f)].
- XIV.J.1.g. Copies of the field sampling records laboratory reports for all sampling events conducted during the CASE period [260.D.1.b.(8).(g)].

XIV.K. REMEDY COMPLETION DEMONSTRATION

XIV.K.1. *Certificate Submission*

Within 14-days of completing the groundwater remedy, the Permittee shall submit a Certification, signed and certified by the Permittee and a qualified groundwater scientist stating all requirements of 260.H.1 have been met, (a copy of the Certification shall also be placed at the Public Data repository).

XIV.K.2. *CACR Submission*

With submission of the Certification, the Permittee shall submit for approval by the Director, a Corrective Action Completion Report (CACR), signed and certified by a qualified groundwater scientist, demonstrating that the remedial actions have been successful in meeting the requirements Permit Module XIV and 260.C.3.(c).(1):

- XIV.K.2.a. Documentation that groundwater protection standards have been achieved at all Performance and Sentinel monitoring points within the plume of contamination beyond the compliance well network established under Permit Module XI during the last three years of groundwater monitoring [260.H.1.a].
- XIV.K.2.b. Documentation that groundwater protection standards have been achieved at all Compliance monitoring points at the waste unit boundary during the last three years of groundwater monitoring [260.H.1.a].
- XIV.K.2.c. All actions required as part of the remedy have been satisfied or completed [260.H.1.b].
- XIV.K.2.d. Documentation that all technical actions and certifications required to complete the remedy have been satisfied [260.H.2-3].

- XIV.K.3. If, after review of the Certification and the CACR, the Director agrees that Corrective Action requirements have been met, the Permittee shall be released from the remedial requirements of 260 and the financial assurance requirements of 9 VAC 20-70-10 et seq. If the Director finds that the presented materials do not substantiate that Corrective Action goals have been achieved, the Permittee shall remain under the Corrective Action requirements until such time as these requirements have been met [260.H.4.b].

XIV.L. REMEDY ABANDONMENT

The Permittee may submit to the Director a Technical Infeasibility Report (TIR) describing the technical reasons why the clean-up objectives can not be practically met on site using the chosen remedy. The TIR shall be submitted within the timeframe specified in 260.G.3 and include:

- XIV.L.1. The certification of a qualified groundwater scientist [260.G.3.a].
- XIV.L.2. A discussion of the reasons why the chosen remedy, and any applicable back-up remedy were not successful in meeting the Corrective Action requirements.

If the Director approves of the TIR demonstration:

- XIV.L.3. Within 180 days of the Director approval, but no later than 14 days prior to implementing any alternative measures [260.G.3.b], the Permittee shall submit to the Director an Alternate Measures Report (AMR), signed by a qualified groundwater scientist, describing the Alternate Measures to meet the requirements of 260.G.3.d. A copy of the AMR shall also be placed at the Public Data Repository.
- XIV.L.4. If, after review of the AMR, the Director agrees that the measures applied to the site meet the requirements of 260.G.3.b, the Permittee shall be released from the Corrective Action requirements and financial assurance requirements of 9 VAC 20-70-10 et seq. If the Director finds that the presented measures do not meet the regulatory requirements, upon the Director's notification, the Permittee shall revise the AMR submission until such time as regulatory conformance is demonstrated.

If the Director disapproves of the TIR demonstration:

- XIV.L.5. Within 180 days of the Director's decision, the Permittee shall submit to the Director a revised Corrective Action Plan, signed and certified by a qualified groundwater scientist, describing a new remedy to be applied on site to meet the requirements of 260.C.3.(c).(1) and shall remain in Corrective Action until those requirements are met.

XIV.M. REMEDY RECORD-KEEPING REQUIREMENTS

- XIV.M.1. The Permittee shall record in the facility operating record all actions related to the remedy installed on site, including but not limited to any manifests related to investigative derived wastes, as well as any design plans, construction reports, as-built documentation, and waste manifests, where applicable.
- XIV.M.2. Throughout the life of the Corrective Action Monitoring Program, the Permittee

must place on file, in a location accessible to the public, copies of any Corrective Action program materials submitted to the Department including copies of the final Nature and Extent, Presumptive Remedy and/or Assessment of Corrective Measures reports. Consistent with the US EPA's RCRA Public Participation Policy, the location chosen by the Permittee shall serve as the public data repository for all monitoring reports generated during the Corrective Action process and shall in part satisfy the requirements for public participation established under RCRA. The location of the public data repository is listed below.

Location Name: Pittsylvania County Administration Office Location Address: 21 North Main Street Location City: Chatham, VA 24531
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XIV.N. CORRECTIVE ACTION NOTIFICATION REQUIREMENTS

XIV.N.1. *System Preparation Update Notification*

During any site preparation phase concerning implementation of a surface water mitigation system, or monitoring well installation phase, the Permittee shall provide written or electronic status updates to the Director every 30 days until such time as the construction of the components is considered complete [260.D.1.b.(8).(a)].

XIV.N.2. *System Component Failure*

Emergency Notification

XIV.N.2.a. Within 24 hours of noting any Corrective Action remedy component failure, the Permittee shall provide a verbal notification of the failure to the Department. [530.C.3].

XIV.N.2.b. Within 5 days of noting any Corrective Action remedy component failure, the Permittee shall provide a written notification to the Department. The written submission shall contain a description of the failure and its cause; the period of occurrence, including the exact dates and times, and, if the circumstance has not been corrected, the anticipated time it is expected to continue. It shall also contain steps taken or planned to reduce, eliminate, and prevent reoccurrence of eth circumstances resulting in the failure [530.C.3].

XIV.N.3. *System Modification*

If modifications other than those described in the Corrective Action Plan are required to correct deficiencies or enhance monitoring system performance after implementation of the remedy, the Permittee shall submit a written request to the Director for approval of the proposed changes no later than 60 days prior to the date of the proposed modification. The notification must include a description and drawings of the proposed modification; justification for the modification; and evaluation of the performance improvements.

XIV.N.4. *System Design “As-builts”*

Well installation diagrams, boring logs, and the certification required from the groundwater professional shall be submitted as required under 250.A.3.g. As-builts for any other Remedy component which will be installed after remedy implementation should be submitted within 30-days of construction completion.

XIV.N.5. *Miscellaneous Groundwater Notifications*

Notifications regarding new background determinations, GPS exceedances, background exceedances, off-site impacts, dry wells, well abandonment, well installation, etc., must be reported in a manner consistent with requirements of 9 VAC 20-81-10 et seq., unless otherwise defined in this Module.

XIV.O. INVESTIGATIVELY DERIVED WASTES

If applicable, based on the remedy implemented onsite, all investigative derived waste shall be managed in a manner that is protective of human health and the environment, compliant with all applicable state and federal requirements, and is consistent with the methods outlined in the Corrective Action Plan [260.C.3.(c).(1).(d)].

XIV.P. SURFACE WATER INVESTIGATION

XIV.P.1. Surface water samples shall be collected from locations along the affected drainages. At a minimum, the locations shall be situated: upgradient of the groundwater plume discharge zone (SSL-1); at the downgradient ‘Plume Discharge Points’ (SSL-2 and SSL-3ANES), and at the downgradient Property Boundary Point (SSL-3). These locations shall be:

XIV.P.1.a. permanently flagged on site and identified by Global Positioning System coordinates.

XIV.P.1.b. may be augmented by additional sampling locations as needed, based on the results of the surface water sampling program.

XIV.P.1.c. sampled for each GPS exceeding constituent. The parameter list may be modified in the future if the Permittee is required to sample for additional parameters as a result of the issuance of a VPDES Permit.

XIV.P.1.d. sampled at a frequency equivalent to that applied to the sentinel wells

XIV.P.1.e. sampled in a manner consistent with the QA/QC protocol defined in existing USEPA or USGS surface water guidance.

XIV.P.2. Sampling locations, which do not contain a sufficient water column within which to sample, will not be required to be re-sampled during the compliance period.

XIV.P.3. If surface water sampling shows evidence of landfill-derived compounds discharging to surface water on site and/or recognized or potential benthic impairment to surface

water on site, the Permittee shall within 60 days, as part of site wide Corrective Action:

- XIV.P.3.a. Classify all streams on site as being either ‘perennial’ or ‘intermittent’ in a manner which meets Department technical guidance.
- XIV.P.3.b. Propose a surface water mitigation plan to address the discharge of groundwater constituents. The facility shall submit a listing of three to four possible conceptual surface water mitigation actions applicable for implementation on site to correct the continued discharge of landfill derived organic constituents and bacterial impairment to the drainage channels. The Permittee may undertake any type of pilot studies as may be needed to help determine the final mitigation choice required. The plan should contain sufficient detail to describe the mitigation system and should note whether coordination with Water Division (or the US Army Corps of Engineers) will be required as part of the mitigation system implementation process.
- XIV.P.3.c. Propose additional surface water monitoring points as needed. If the Permittee has to obtain a VPDES Permit as part of the mitigation plan, the sampling parameters of the VPDES Permit will be added to this Module for consistency.
- XIV.P.3.d. Implement the approved mitigation and monitoring plans, including coordination with Water Permitting if a discharge Permit is required as part of the final mitigation design and implementation.

XIV.P.4. If mitigation plans include the use of engineered wetlands, the sampling points can be modified to ensure the wetlands discharge point is monitored.

XIV.Q. PERMIT DOCUMENTS

It shall be the responsibility of the Permittee to update any permit documents as needed. This may trigger Permit modifications.

XIV.R. LIMITATIONS

Should information contained in any Permittee-authored Permit Document conflict with any requirement or condition contained herein, or language found within 9 VAC 20-81-10 et seq., as amended; the Module condition and/or Regulatory requirement shall prevail over the language in the Permittee supplied document unless it can be demonstrated that a variance from that regulatory requirement has been granted by the Director.

When the Permittee becomes aware that he failed to submit any relevant facts or submitted incorrect information in any groundwater monitoring report to the Director, he shall promptly submitted such omitted facts or the correct information with an explanation [530.E].

End of Module