
DENISE WESSELS, PE

Education

M.S. - Environmental Science, Indiana University, 2003
B.S. - Civil Engineering, The Pennsylvania State University, 1993

Professional Licenses

Professional Engineer, Pennsylvania, Maryland, Virginia

Professional Affiliations

Pennsylvania Waste Industries Association
Solid Waste Association of North America – Keystone Chapter – Board of Directors

Professional Experience

Ms. Wessels is a Project Manager with the Landfill Engineering Group in the Denver, PA office. She has more than 20 years of experience in the waste management industry and environmental consulting, including landfill design, project management, regulatory compliance, permitting, environmental monitoring and studies, auditing, and budgeting. Examples of her project experience include:

Landfill Engineering

Narvon, PA, Lanchester Landfill. Certifying Engineer for the 22-acre 2017 Final Cover construction project, five acres of which was Closure Turf Alternative Final Cover. Construction activities included preparation of subgrade, installation of 50-mil LLDPE Super Gripnet geomembrane, geotextile, and final cover soils. During construction, modifications to the existing landfill gas system were made.

Morgantown, PA, Conestoga Landfill. Certifying Engineer for Certification of Facility Construction Activity (Form 37) for modifications of the landfill gas collection and control system. Prepared 2011-2015 Annual Operation Report, including density calculations, disposal summary, site plans, and cross-sections. Other activities have included creating compliance tasks for applicable federal, state and local regulations.

Lebanon, PA, Greater Lebanon Refuse Authority Landfill. Project Manager for various engineering assignments including:

- Mining Study to evaluate the feasibility of mining waste from an unlined area of the landfill and reclaiming soil and recyclable materials. Work includes reviewing historical information, completing a boring investigation, and preparing a waste mining/redeposit plan.
- Phase I and II Major Permit Amendment for Landfill Expansion.
- Landfill Conceptual Closure Design evaluating using of ClosureTurf and LiteEarth

Lorton, VA, Fairfax County I-95 Sanitary Landfill. Certifying Engineer for construction of the 11.3-acre Phase IIIB bottom liner construction, most of which piggy-backed over an existing closed landfill. Construction activities included regrading the piggyback area, preparation of subgrade, installation of geogrid, Prepared Subbase, geosynthetic clay liner (GCL), 60-mil textured HDPE geomembrane, geocomposite drainage net (GDN), protective cover, leachate collection system, and rain-cap. During construction, modifications to the existing leachate forcemain and landfill gas system were made.

Staunton, VA, Augusta Regional Landfill. Certifying Engineer for construction of Phase IV landfill cell. Construction activities included installation of sedimentation basins, access roads, and blasting and grading to construct the 17-acre Phase IV subgrade, geosynthetic bottom liner system and leachate collection system. Other activities have included preparing density and remaining capacity calculations, conceptual cap design, assistance with capital projects budgeting, and Major Permit Amendment to revise closure grades in Phases 1-3.

York, PA, Magnesita Refractories Residual Waste Monofill. Project Manager for Phase I and II Major Permit Modification for a vertical expansion to increase disposal capacity by 375,000 cubic yards and provide an additional 75 years of landfill life. Project Manager for construction engineering (construction plans and specifications, CQA oversight, construction certification report) for construction of the final disposal area perimeter berm for the residual waste monofill to comply with Mine Safety and Health Act (MSHA) regulations. Conducted a landfill development evaluation for a potential landfill expansion.

Fort Belvoir, Lorton, VA, Cullum Woods Landfill. Completed semi-annual post-closure inspection of the landfill cap and associated features (e.g., stormwater management system, landfill gas management system).

Rockingham County, VA, Rockingham County Landfill. Project Manager the Major Permit Amendment for the Phase V expansion, annual airspace/density calculations, updated Stormwater Pollution Prevention Plan.

Page County, VA, Battle Creek Landfill. Project Manager for various engineering tasks for the Landfill including the Phase I Major Permit Amendment (raised height of Phase I of the landfill), Phase II-IV Permit Amendment (to increase landfill capacity by raising final grades, and lowering bottom liner grades, and make several design improvements), Cell 8, 9 and 10 construction engineering (construction plans and specifications, CQA oversight, construction certification report), annual airspace/density calculations, plans and specifications for sedimentation basin cleanout, plans and specifications for seeding, obtaining a General Permit for Stormwater Discharges associated with Industrial Activity.

Prince William County Landfill, VA:

- Project Manager for preparing construction plans and specifications for 17.2-acre Phase II, Cell A construction and 24-acre Phase I, Sequence I Closure Project, and providing construction engineering services.

- Project Manager for the Ballfield Hollow Channel Relocation project to permit the relocation of approximately 4,000 linear feet of stream channel, which also impacts approximately three acres of wetlands.
- Led effort to prepare the Notice of Intent, Design Report, CQA Plan, and Specifications for the Phase II/III redesign project. Managed the completion of the traffic study and archaeological study.
- Completed a settlement analysis for the Ballfield Landfill and Project Manager for preparation of redevelopment plans to include a new athletic field and screening berm. The baseball fields, located over old municipal solid waste, were surcharged with soil and settlement plates were installed within the fill to monitor settlement over time. .

Puebla, Mexico, Chiltepeque Landfill. Evaluated potential landfill expansion opportunities and prepared density and remaining capacity calculations.

Woodbridge, VA, Mount Ray Debris Fill. Project Manager for the environmental site investigation necessary for the redevelopment of a 42-acre fill site (fill area covers 14 acres) under the Virginia Voluntary Remediation Program (VRP). Work included installation and monitoring of gas probes, preparation of a sampling and analysis plan, groundwater, soil, surface water and sediment sampling and analysis, preparation of a site characterization report, risk assessment and remedial action plan, negotiations with the Virginia Department of Environmental Quality (VDEQ), and installation and monitoring of settlement monitoring stations.

Lorton, VA, Telegraph Road Landfill. Project Manager for the environmental site investigation necessary for the redevelopment of a 92.5-acre property (fill area covers approximately 60 acres) under the Virginia Voluntary Remediation Program (VRP). Work included installation and monitoring of gas probes, preparation of a site characterization report, negotiations with the Virginia Department of Environmental Quality (VDEQ), installation and monitoring of settlement monitoring stations, preparation of a risk assessment report and a remediation waste management unit (RWMU) application.

Harford County, MD, Spencer's Rubble Landfill. Lead Engineer for the preparation of a Preliminary Closure Plan and Repermitting Cost Estimate. The Closure Plan describes activities necessary to close the 20-acre Spencer's Rubble Fill, including a cost estimate for closure and post-closure care activities, and discusses potential end uses of the property. The report also presents procedures to re-permit the site to continue fill operations with a cost estimate for re-permitting, engineering, and construction. Provided technical support for plans and specifications for the closure of the entire landfill, and redevelopment for passive end uses to include a picnic pavilion, walking trails and dog park.

Confidential Location, PA. Conducted a landfill development evaluation for a potential 130-acre non-contiguous landfill expansion. Work involved evaluating siting criteria and setbacks established in PA Solid Waste Management Regulations, identification of critical issues, preparation of a conceptual site plan with base grades and final cover grades, and estimation of potential airspace, construction costs and soil balance.

Monticello, NY, Sullivan County Landfill. Prepared Construction Quality Assurance Plan, Specifications and Engineer's Cost Estimate for the closure of 17 acres of the Phase I Landfill. Work includes grading with ash material, installation of a geosynthetic landfill cap system, barrier protection soil, and topsoil layers, installation of surface water drainage system, abandonment and capping of LFG wells and headers, re-use and relocation of selected LFG headers, installation of new header sections, and re-connection to existing wells above the new cap liner. Responsibilities also included review of contractor submittals in accordance with the specifications.

Perry Hall, MD, Honeygo Run Reclamation Center. Certifying Engineer for construction of the Southern Expansion. Construction activities included installation of Sedimentation Basin #3, access road construction, grading/preparation of storage tank and maintenance building area, a 25-foot high mechanically stabilized earthen (MSE) perimeter road, the four-acre Cell 4, and the four-acre Cell 5. Other activities have included preparing semi-annual airspace calculations, stormwater monitoring, and creating compliance tasks for applicable federal, state and local regulations.

York, PA, Modern Landfill. Project Manager for preparation of a "Settlement Accommodation Plan" which allows filling above final grades in anticipation of settlement to maximize airspace utilization. Prepared a detailed cost/benefit analysis of removing certified final cover to recapture "lost" airspace due to settlement. Prepared 2005 - 2015 Annual Operation Reports, including density calculations, disposal summary, site plans, and cross-sections. Other activities have included preparing semi-annual airspace calculations, assistance with engineering budget model, and creating compliance tasks for applicable federal, state and local regulations. Prepared a minor permit amendment, including PADEP Department of Solid Wastes Form K (Gas Management), for adding new landfill gas flares and removing old flares.

Confidential Location, Confidential Client. Conducted file review and site visits to identify possible environmental liabilities at a landfill and transfer station in conjunction with a potential transaction involving two publicly-listed companies.

Confidential Locations in Pennsylvania, Confidential Client. Conducted file review and site visits to identify possible environmental liabilities at two landfills in conjunction with a potential merger by a publicly-listed company.

Harford County, MD, Abingdon Landfill. Prepared an operations and maintenance manual for the landfill cap and environmental monitoring system at the closed landfill. Completed post-closure inspection of the landfill cap and associated features.

Prince George's County, MD, Brown Station Road Landfill. Conducted a comprehensive environmental compliance audit covering solid waste, hazardous waste, air, surface water discharge, and industrial discharge regulations and permits.

Cleveland Heights, OH, City View Center. Conducted short-term and long-term settlement analysis for the City View Center, a shopping center to be built over an old municipal solid waste landfill.

Closure and Post-Closure Cost Evaluation. Complete annual review of closure and post-closure cost estimate for landfills in Kentucky, Virginia and West Virginia to verify cost estimates are reasonable and appropriate.

Solid Waste Facilities

Fairfax, VA, Covanta Fairfax, Inc. Prepared a Permit-by Rule Application to obtain a solid waste permit for the waste-to-energy facility. Also provided professional engineering certification of Spill Prevention, Control and Countermeasure Plan (SPCC) updates.

Alexandria, VA, Covanta Alexandria/Arlington, Inc. Prepared a Permit-by Rule Application to obtain a solid waste permit for the waste-to-energy facility.

Troy, VA, Zion Crossroads Recycling Center. Lead Engineer to prepare the Permit by Rule to operate the 1,000 tons per day construction and demolition debris recycling center. Efforts also included preparing air emission calculations and managing the preparation of a stormwater pollution prevention plan.

Page County, VA, Stanley Landfill. Project Manager for the design of a 100 ton per day transfer station. Work involved managing the design of the transfer station, obtaining necessary permits (stormwater, zoning, permit-by-rule), and development of a bid package.

Landfill Gas

Pottstown, PA, Pottstown Landfill. Prepared a minor permit amendment, including PADEP Department of Solid Wastes Form K (Gas Management), for landfill gas flare No. 4.

Page County, VA, Stanley Landfill. Conducted an assessment of landfill gas extraction wells (21 wells), collection and control system (candle stick flare), and provided recommendations for system improvements. Prepared an Addendum to the Landfill Gas Management and Remediation Plan to address landfill gas migration. Project Manager for the installation of four horizontal gas collectors. On-going work at the site includes preparation of monthly monitoring reports of the landfill gas perimeter monitoring system, and managing activities associated with the Addendum to the Remediation Plan.

Page County, VA, Battle Creek Landfill. Prepared annual emissions inventory, Stationary Source Air Permit Amendment (VDEQ Form 7), and Title V permit application. On-going work includes preparing the annual emissions statement and annual NMOC report.

Lorton, VA, Telegraph Road Landfill. Project Manager for the Major Permit Modification to transfer the solid waste permit for the Telegraph Road Landfill to a new owner, decommissioning the blower/flare station, installation of new perimeter landfill gas monitoring probes, preparation of a Gas Remediation Plan to address methane detections at perimeter monitoring probes, and installation of solar powered flares. On-going work at the site includes preparing monthly monitoring reports of the landfill gas perimeter monitoring system, and managing activities associated with the Remediation Plan.

Perry Hall, MD, Honeygo Run Reclamation Center. Prepared Methane Monitoring Plan and Conceptual Design and Cost Estimate for a landfill gas collection and control system for the rubble landfill. Project Manager for the installation of seven gas monitoring probes and quarterly perimeter probe monitoring.

Pine Grove, PA, Pine Grove Landfill. Plan Approval Application prepared for a landfill expansion which also included the replacement of two 2,000 cfm enclosed ground flares with one 5,000 cfm enclosed ground flare. Prepared the PADEP Department of Solid Wastes Form K (Gas Management) and Form G(B) (NMOC Emission Estimates) in support of the Pad 12 Expansion permit application.

Greencastle, PA, Mountain View Reclamation Landfill. Prepared a minor permit amendment, including PADEP Department of Solid Wastes Form K (Gas Management), for landfill gas flare No. 2.

Bethlehem, PA, IESI PA Bethlehem Landfill. Prepared permitting documents necessary for expansion of the landfill, including PADEP Solid Waste Forms, G(A), G(B) and Form K. Prepared annual Title V Certification Report, and Semi-annual Operational Reports for NSPS and NESHAP, and completed a Title V renewal application.

Birdsboro, PA, Pioneer Crossing Energy, LLC. Prepared a Municipal Waste General Permit Application and Renewal Application for a landfill-gas-to-energy beneficial use project at Pioneer Crossing Landfill.

Lothian, MD, Sands Road Park (formerly Al-Ray Super Concrete Rubble Landfill). Prepared Methane Monitoring Plan for the rubble landfill. Project Manager for the installation of seven gas monitoring probes and quarterly perimeter probe monitoring.

Birdsboro, PA, Western Berks Community Landfill. Project Manager and Lead Engineer for preparing permitting documents necessary for expansion of the landfill, including PADEP Solid Waste Form G(B) and Form K, and air plan approval application. Work involved creating a master plan of the existing landfill gas control and collection system (GCCS), designing the GCCS in the expansion areas, and preparing an operations manual for the system.

Environmental Services

Spill Prevention, Control and Countermeasures (SPCC) Plans. Prepared SPCC Plans for various sites throughout Pennsylvania, Maryland, Connecticut and Virginia.

Stormwater Pollution Prevention Plans (SWPPPs). Prepared SWPPPs for various sites throughout Pennsylvania, Virginia, Maryland, Connecticut and Massachusetts.

Other Experience

Prior to joining SCS, Ms. Wessels was a Site Engineer for Waste Management's Northwest Sanitary Landfill in West Sunbury, Pennsylvania.

Publications

Boeglin ML, Wessels D, Henshel D. 2006. An Investigation of the Relationship between Air Emissions of Volatile Organic Compounds and the Incidence of Cancer in Indiana Counties. *Environmental Research* 100:242-254.

Wessels D, Barr DB, Mendola P. 2003. Use of Biomarkers to Indicate Exposure of Children to Organophosphate Pesticides: Implications for a Longitudinal Study of Children's Environmental Health. *Environmental Health Perspectives* 111:1939-1946.