
ROBERT H. ISENBERG, PE, CPG

Education

M.S. - Geological Engineering, University of Minnesota, 1977

B.S. - Geological Engineering, University of Minnesota, 1973

Professional Licenses

Professional Engineer - VA, MD, SC, PA and MN

Certified Professional Geologist (AIPG #7404)

Professional Affiliations

American Society of Civil Engineers

American Institute of Professional Geologists

Solid Waste Association of North America

Professional Experience

Mr. Isenberg is a Senior Vice President with over 40 years of consulting experience in geotechnical and civil engineering projects involving design, analysis, testing, permitting, construction, remediation and repair of solid waste facilities, retaining structures including dams, mine tailing basins, earthen embankments and reservoirs, buildings including power plants, commercial and residential housing and studies of soil and groundwater contamination. He has extensive experience with design of bottom liner and leachate collection systems, final covers, subsurface investigation, redevelopment and remediation of older municipal and private waste landfills, and studies of soil and groundwater contamination. Representative examples of his project experience include the following:

Landfill Design and Permitting

Millersville Landfill, Cell 9, Anne Arundel County, MD. Project Director for evaluating design options for the next landfill area at the Millersville site including opportunities to increase airspace and updating the permit design to current standards. Also, led efforts on subsequent phases including Schematic Design, Detailed Design and Construction Documents efforts for the initial Subcell 9.1. The work is on-going, with construction scheduled for 2015.

Prince William County Sanitary Landfill, VA. Project Manager/Project Director for providing CQA and design services for two recent expansions to this existing facility that was designed by SCS. The work involved supervision of the Resident Engineer and technicians, and preparation of final engineering certification. Also involved in development of a Part A Permit Amendment for Facility Boundary Modification to incorporate new property, in developing a schedule for final closure of the landfill phases to meet regulatory requirements and engineering evaluations of improvements to ballfields that are present on an older landfilled area.

NRG Energy (formerly GenOn) Gibbons Road Property, LLC, Prince George's County, MD.

Project Director and Lead Geotechnical Engineer for a non-coal mine reclamation project that

will utilize Coal Combustion Byproducts (fly ash) from local coal-fired power plants as the reclamation material. This project is possible under new COMAR regulations that allow such a reclamation project provided that the facility meeting design and operational requirements similar to a sanitary landfill. The facility will include a bottom liner and leachate collection per the regulations.

Page County, VA, Battle Creek Landfill and Stanley Landfill. Project Director for engineering, geotechnical and environmental support on all aspects of work related to the active Battle Creek Landfill and the closed Stanley Landfill. Provided consulting services on issues related to landfill construction, permitting, expansion, operations, groundwater investigation, landfill gas migration, and construction.

USEPA Draft Technical Guidance For RCRA/CERCLA Final Covers. Retained by USEPA in 2004 to provide expert peer review of the *Draft Technical Guidance Document for RCRA/CERCLA for Final Covers* (EPA 540-R-04-007). The document addressed all phases of final cover design including cover components, regulatory drivers, slope stability, settlement, infiltration modeling, construction, gas collection, water balance modeling and other key topics.

Brown Station Road Landfill. Project Director for a long-term, multi-discipline engineering contract dealing with design, evaluations, permitting and investigations. Projects have included construction management/construction quality assurance for a new landfill gas to energy plant facility, landfill gas compliance monitoring, operations and maintenance of existing landfill flare systems, design and installation of new dedicated groundwater well sampling devices, groundwater sampling and analysis, design of a new scale and scalehouse facility, design of a new administration building and review of the existing materials recovery facility contract and equipment.

Novo Gramacho Landfill, Rio de Janeiro, Brazil. Project Director for closure design for this 6,000 ton per day landfill that was officially closed in 2013. The work involved coordination with local Brazilian engineering consultants, construction planning, final grading and drainage plans, leachate control and gas control. Prior to closure engineering, also provided technical review of slope stability, settlement and deformation issues for this which is founded over very soft organic sediments

Sao Joao Landfill, Sao Paulo, Brazil. Provided technical consultation regarding a recent slope failure, site operations, settlement, gas controls and site monitoring. The work involved modeling of the failure surface, estimate of waste properties and liquid levels, and preparation of a technical report. The facility is now closed.

Tel Aviv, Hiriya Landfill Rehabilitation, Israel. Head of Engineering Planning for engineering modifications to a large, inactive sanitary landfill located near Tel Aviv. The project involved geotechnical investigations and testing, evaluation of biogas quantity and quality, leachate levels and quality, slope stability, methane migration, and working with an international team of landscape architects to develop a rehabilitation plan. The landfill, which is a prominent landmark in the area, will become the centerpiece of the proposed Ariel Sharon Park. SCS teamed Tahal Engineering, the largest civil firm in Israel.

Negev Desert, Effe Landfill, Central Waste Disposal Facility, Israel. Project Manager/Lead Designer for developing General Engineering Design for this proposed 5000 ton per day regional landfill facility for TAMAR Regional Council. This work was performed under a teaming agreement with Tahal Consulting Engineers, Tel Aviv. Work included development of design, permitting and construction plans, airspace/volume and lifespan calculations, slope stability and leachate generation modeling, design plans and engineering report.

Hampton, VA, Big Bethel Landfill. Project Task Manager for the engineering design of a 238-acre landfill expansion involving design, engineering analyses, phasing plans, and Part B Permit Application submittal to VDEQ. The design was for a "zone of saturation" facility.

Amelia County, VA, Maplewood Landfill. Project Manager for the design and preparation of permit documents for a 400-acre sanitary landfill in central Virginia. The work involved Part B state permit application, including design of base grades, double-composite synthetic liner, leachate collection features, phasing, earthwork balance, stormwater controls, gas management, access roads and other necessary operational features.

Washington County, MD, Forty West Sanitary Landfill. Project Manager for the master plan design, Phase III permitting, Phase II boundary modification, and construction documents for a new 180-acre landfill. Included design of all landfill infrastructure, citizens drop off facility, final grading, base grading, bottom liner system, final cover system, slope stability and settlement evaluations.

Oakland, MD, Garrett County Landfill. Project Manager for the design of a 20-acre sanitary landfill and 5-acre rubble fill for Maryland Environmental Services. Efforts involved design of base grades, composite synthetic liner utilizing a geosynthetic clay liner, leachate collection and recirculation system, gas management and other site features.

Baltimore County, MD, Eastern Landfill Closure. Lead Designer and Geotechnical Engineer for designing closure grades and final capping system for a portion of this landfill. The work included evaluation of different geomembranes; ultimately, PVC was selected as the geomembrane that best met the project requirements. Developed all plans, specifications, and material quantity estimates.

Harford County, MD, Abingdon Landfill Cover Improvements and Spencer's Landfill Closure. Project Director for designing improvements to the existing cover of the 15-acre closed Abingdon Landfill. Work included: delineation of waste limits and soil cover thickness; landfill gas monitoring; sampling and testing of groundwater, surface water and sediments; evaluation of alternative cover materials, and end-use options for the site. Also served as Project Director for closure of the Spencer's Rubble Fill Landfill, including design of the final cover and preparation of construction plans.

Montgomery County, MD, Oaks Landfill. Project Manager for a multi-year contract that includes the design of the final closure system for this 130-acre site, and construction engineering/CQA services. The work included: final cap design and grading plans; design of stormwater controls, landfill gas controls, and erosion and sediment features.

Carrs Mill Landfill, Howard County, MD Project Director for closure of this sanitary landfill (closed in 1977) including final cover, gas control and groundwater remediation. Work included delineation of waste limits, soil cover thickness, estimated waste depth, estimates of long term settlement, HELP modeling for leachate generation, and landfill gas and groundwater monitoring and testing.

New Cut Landfill, Howard County, MD. Project Director for design of landfill closure features including final cap, active LFG control and groundwater remediation using pump and treatment technology for this 40-acre site. The work included delineation of waste limits, soil cover thickness investigations, wetlands mapping, review of historical information and gas and groundwater monitoring and testing. Site investigation work is underway.

Alpha Ridge Landfill, Howard County, MD. Project Director for construction quality assurance activities related to closure of this 70-acre facility. The work involved construction of a combination soil and geomembrane cover system, landfill gas collection wells and header piping, landfill gas flare, groundwater pump-and-treatment system and other related features. Also, involved in estimating landfill settlement and in developing landfill specifications for earthwork and geosynthetics.

Watertown, NY, Development Authority of the North Country Landfill. Lead geotechnical engineer responsible for evaluating slope stability of this existing facility to assist in design of a planned expansion. Involved slope modeling, laboratory of geomembranes for interfacial friction and preparation of final recommendations for permit design submittal.

Niagara Falls, NY, Model City Hazardous Waste Site and Fort Wayne, Indiana, Adams Center Secure Landfill. For these two hazardous waste facilities, provided geotechnical-engineering evaluations of interior and perimeter earth berms, internal drainage systems, and final cover design. Performed slope stability analyses for filling configurations, evaluated internal geosynthetic drainage system and geotechnical properties of soil borrow.

Construction Quality Assurance

Landfill CQA Services in Virginia and Maryland. For over 25 years, Mr. Isenberg has been involved with construction quality assurance testing of soil, geosynthetics, concrete and plastic piping for landfill closures, new composite bottom liner systems, and related structures in Virginia and Maryland. Provided CQA documentation and professional engineering certification services for Battle Creek Landfill, Prince William County Landfill, Fairfax County I95 Landfill, Shoosmith Bros., Landfill, King and Queen County Landfill, Oaks Landfill, Alpha Ridge Landfill, New Cut Landfill and Carrs Mill Landfill.

Fauquier County, VA, Corral Farm Landfill. Certifying Engineer for CQA services during construction of the first cell of this lined landfill. Construction included a stormwater pond and lined leachate collection pond, access road and maintenance building. Construction is complete, certification provided and landfill is operational.

York, PA, Modern Landfill. Project Manager and certifying engineer for construction of HDPE-lined Cells 4 and 5, deep leachate transmission piping, gas extraction wells, closure capping of

old and new areas, and other CQA activities. Also, involved as senior advisor on construction of Cells 6 and 7, design of final cover system, and final capping work.

Oakland, MD, Garrett County Landfill. Provided technical support and guidance to the Maryland Environmental Service during construction of this new facility. The efforts included review of construction documentation, site visits, response to contractor questions and design clarifications.

Tullytown Resource Recovery Facility, Philadelphia, PA. Provided project management, certification engineering, and geotechnical overview of construction quality control and testing for over 3 years including 12 cells or about 150 acres of this above-grade, synthetic double-lined facility. Personnel management, scheduling, cost control, and certification of construction as-built. Involved as project manager and certifying engineer for activities related to closure capping of filled cells.

GROWS Landfill, Philadelphia, PA. Project Manager for construction quality assurance activities related to closure of this 62-acre, 200-foot high facility with an earthen cover. The work involved monitoring of field activities, quality assurance testing, supervising resident engineering personnel, and developing a final documentation/certification report for closure. Construction was accomplished over a two-year period using the owner's forces.

Groundwater Investigation and Remediation

Sheffield, IL, Hazardous Waste Site. Task Manager for design and analysis of a low-permeability cut-off wall to isolate groundwater, along with a leachate extraction system. Elements included evaluation of several technologies to install the cut-off wall for removal of contaminated soils.

Paynesville, MN, Paynesville Landfill. Evaluated hydrogeologic conditions for proposed expansion and site improvements. Worked with state and federal regulatory agencies to secure necessary permits, and developed a site investigation program for the expansion and long-term monitoring plan.

Geotechnical Engineering/Expert Consultation

PASCO Drum Disposal Facility, Pasco, WA. Retained as a geotechnical expert by an environmental engineer to evaluate settlement of a geomembrane final cover system constructed over an old liquid drum disposal facility. Evaluations involved developing a settlement monitoring program that has been on-going for 5 years, estimating tensile strain in the geomembrane liner and providing future predictions of strain.

Minneapolis/St. Paul Metropolitan Areas, MN, Earthwork Observation/Testing. Involved in over 200 development projects including foundation engineering evaluations, retaining wall design and construction, subsurface investigations, groundwater studies, construction observation and lab testing, Designed shallow and deep foundation systems, installed monitoring wells, performed slope stability, developed earthwork quality control specifications, and performed forensic studies of foundation distress.

Staten Island, NY, Power Authority of the State of New York. Geotechnical engineering design and supervision of exploration program for fossil power plant site situated on fly ash, including layout, depths and sampling techniques for drill holes into soil and rock, as well as laboratory tests.

Publications/Presentations

“Deep Foundations for Redevelopment of Brownfield (Former Waste) Sites,” Annual Pile Driving Contractors Association Conference, Charleston, South Carolina, March 29, 2012.

“Three Key Elements of Redeveloping Old Landfills: Foundations, Gas and Regulations,” SWANA 12th Annual Symposium and Planning Management Conference, San Diego, CA, June 26, 2007 and at WasteTech 2007, Miami, FL, March 13, 2007

“Stability Evaluation and Moisture Content Issues,” Landfill/Bioreactor/Leachate Recirculation Design and Operations Training Sessions, SWANA/New York State Chapter, Albany, NY, November 8, 2006

“Redevelopment of Landfills: Design Considerations,” Maryland Recycling Coalition and SWANA Joint Seminar, Towson, MD, June 8, 2005.

“From Landfill to Leisure-Closure and rehabilitation of the Hiriya Landfill,” with E. Peterson and D. Sternberg, Waste Management World, Sept/Oct. 2004

“Bioreactor Landfill Stability: Key Considerations,” with Bachus, Houlihan, Kavazanjian and Beech, MSW Management, Sept/Oct. 2004

“Landfill and Waste Geotechnical Stability,” USEPA Workshop on Bioreactor Landfills, Arlington, Virginia, February 27-28, 2003

“Geotechnical Aspects of Landfill Bioreactor Design: Is Stability a Fatal Flaw?,” 6th Annual Landfill Symposium, Solid Waste Association of North America, June 18, 2001, San Diego, California

“Construction Quality Assurance for Landfills Under Subtitle D,” ASCE Geotechnical Committee Meeting, Falls Church, VA, March 17, 1999

“Evaluation of Alternative Landfill Bottom Liner and Landfill Cap Systems,” with Mandeville, P., Thomas, R., and Tomlin, E., Nineteenth International Waste Conference. Madison, WI. September 25-26, 1996

“Impact of Landfill Slope Geometry and Slope Stability,” with Law, J. and Leung, C. Nineteenth International Waste Conference. Madison, WI. September 25-26, 1996

“Construction Quality Assurance for Soils.” Twenty-Third Annual Missouri Waste Management Conference. Columbia, MO. July 1995

"Engineering Services During Construction/Liner Construction Quality Assurance Under Subtitle D," with Curtis, R. and Strickland, P. Sixth Annual SWANA Southeast Regional Symposium. Mobile, AL. April 1995

"Construction Quality Assurance/Quality Control." Midwest Landfill Seminar. Kansas City, MO. November 1994

"Geotechnical Engineering Aspects of Landfill Design." Thirty-Fifth Annual Conference of Soil Mechanics and Foundation Engineering. University of MN, Minneapolis, MN, 1987

"Engineering Uses of the Soil Survey." Minnesota Association of Professional Soil Classifiers, Minneapolis, MN, June 1978