
DAVID J. MEZZACAPPA, PE

Education

BS – Civil Engineering, University of Texas at Arlington, 1992
MSCE Coursework – University of Texas at Arlington, 1993-1994

Professional Registrations

Registered Professional Engineer – Arizona, Louisiana, Mississippi, Missouri, Nevada, New Mexico, Oklahoma, Texas

Professional Experience

Mr. Mezzacappa has worked in the solid waste field for 22 years, and has served as a design engineer and/or project manager for many types of projects ranging from landfill gas (LFG) collection system designs to major landfill expansions. He has prepared numerous landfill permit modifications, alternate liner demonstrations, closure plans, and leachate management plans. Since 2012, he has been the main project manager for the Sand Point Landfill in Eddy County, NM, and is quite familiar with New Mexico Landfill rules and New Mexico Environment Department (NMED) staff. He has also worked at several other landfills throughout New Mexico. Between 2000 and 2006, he worked in SCS's Phoenix, AZ, office. Between this assignment and his work in New Mexico and West Texas, he is well versed in the issues associated with arid landfills.

Mr. Mezzacappa specializes in all aspects of the Clean Air Act and greenhouse gas (GHG) permitting, reporting, and compliance. The following is a partial listing of representative projects.

Representative Solid Waste Permitting and Design Projects

- Eddy County, NM – For the last 4 years, SCS has been the solid landfill engineer for the Sand Point Landfill, Carlsbad, NM. During that time, Mr. Mezzacappa has been the lead engineer and project manager for this work. Work included the 20-year permit renewal, groundwater and perimeter gas monitoring, leachate monitoring, Clean Air Act compliance, landfill planning, cover erosion planning, financial assurance planning, and landfill audits for compliance purposes. During the project, Mr. Mezzacappa developed an excellent relationship with members of NMED's Solid Waste Bureau.
- Prepared Special Waste Plan revisions at a privately owned landfill in New Mexico to conform to new State of New Mexico requirements.
- Caja Del Rio Landfill Stormwater Work – Project Manager for preparation of stormwater design improvements to formalize the existing drainage conditions at the Caja Del Rio Landfill. Improvements included permitting and preparation of construction plans. Project also included preparation of a Spill Plan and Storm Water Pollution Prevention Plan (SWPPP) for the landfill.

- Alternate Final Cover Demonstrations – In addition to the alternate final cover demonstrations listed below; prepared several stand-alone demonstrations for landfills in Texas, Arizona, and throughout the western United States. Designs varied from sites with little or no rainfall to sites with almost 40 inches of rainfall per year.
- Preparation of a closure plan and design for the City of Chandler Landfill, a 66-acre landfill located in the Phoenix metro area. The closure plan included revised final grades, an alternate final cover demonstration, and detailed expansion and retrofitting of the landfill gas collection and control system (GCCS). Upon approval of the closure plan by ADEQ in 2005, prepared construction plans, participated in bid support, and acted as an engineer of record in the landfill closure.
- Preparation of a major modification to the Sahuarita Landfill for Pima County. This landfill (near the City of Tucson) was doubled in size through this lateral and vertical expansion. Aspects of this application (approved by the Arizona Department of Environmental Quality [ADEQ]) included a new entrance facility design, alternate liner and final cover demonstrations, detailed soil balance calculations, and complete liner and leachate collection system design. Also prepared follow-up construction plans for the first phase of the expansion and acted as lead engineer during the construction.
- Worked for several years on a large private landfill project in Nevada under US Environmental Protection Agency (USEPA) enforcement. Worked with the Owner and USEPA Region 9 to prepare reports summarizing and analyzing data relating to existing cover adequacy, waste depth, soil loss probability, gas characterization, and geophysical characterization.
- Prepared planning documents and current analysis for the Hopi Indian Community Landfill. Documents were necessary to evaluate and suggest ways that the operation could be run in a safer and more effective environmental manner. Prepared a second document to evaluate the stability ramifications of an overfill situation.
- Prepared large portions of expansion application documents for Waste Management landfills in Temple and San Antonio, TX. Prepared leachate management plan, LFG plan, site operating plan, required maps, alternate cover demonstration, closure plan, post-closure plan, and location restriction demonstration. Performed calculations regarding soil loss, drainage design, leachate system design, anchor trench stability, pipe strength, and geotextile adequacy.
- Prepared many permit modifications (most for Waste Management in Texas), including modifications involving the following areas: Subtitle D upgrades, leachate recirculation, expansion of methane monitoring probes or gas mitigation systems, reworking site drainage, alternate liners and caps, increasing landfill height, and moving site facilities.

Bioreactor and Liquids Addition Work

- Prepared liquids addition “wet cell” Research, Demonstration, and Development (RD&D) Permit application for a private landfill in New Mexico. This was one of the first such applications in the state under the state’s new RD&D rule.
- Prepared one of the first RD&D Permit applications in the United States for a bioreactor landfill for the Salt River Pima-Maricopa Indian Community’s Salt River Landfill outside of Phoenix, AZ. This application, which was approved by USEPA Region 9, is the first full-scale bioreactor to be approved in such an arid climate, and included both a full-scale bioreactor operation as well as liquids addition in several phases that had already received fill.
- Preparing two additional liquids addition RD&D demonstrations for private clients in the desert Southwest.

Greenhouse Gas-Related Work

- Currently providing GHG-related services for more than a dozen landfills. Services include screening for applicability against new Federal rules under 40 CFR §98, preparation of GHG monitoring plans, and evaluation of gas system instrumentation against the new rule.

New Source Performance Standards (NSPS) Work

- Performed semi-annual NSPS reports for several landfills in Texas and New Mexico; several of these reports are combined reports inclusive of Startup, Shutdown and Malfunction (SSM), NSPS, and Title V reporting.
- Performed over 20 Tier 2 sampling and analyses in Texas, Arizona, Utah, Oklahoma, New Mexico, and Alabama, both directly and as a manager. Involved in performing some of the first Tier 2 work in the country in the Dallas/Fort Worth area in 1994 with Texas Natural Resource Conservation Commission (TNRCC) promulgated rules implementing the proposed NSPS rules. Prepared sampling plans, alternate Tier 3 analyses, and nitrogen waivers. Worked extensively with all “front end” portions of NSPS compliance, including Tier 1 design capacity reports and Non-Methane Organic Compound (NMOC) emission rate calculations (1994-2005).
- Prepared all phases of NSPS reporting, including NSPS design plans, NSPS annual reports, and NSPS performance tests (1997-2005) in Texas, Arizona, and New Mexico. Is extremely familiar with the NSPS design process and necessary operational requirements.

Title V Operating Permit Work

- Prepared semi-annual deviation reports and annual compliance certifications for approximately 10 landfills on an ongoing basis.

- Prepared Title V applications for all Republic Landfills in Texas and several City Landfills, for the new Texas General Operating Permit.
- Responsible for the preparation of all Title V, NSPS, and Emissions Inventory reporting for Allied Waste landfills in the State of Arizona.
- Prepared Title V certification and deviation report forms.

Source Testing

- Completed the management of source testing for open flares, enclosed flares, and thermal oxidizer units. Several of these have been directly subject to NSPS requirements.

Pre-Construction Air Permitting

- Permitted several air-related landfill expansions in the State of Texas through the “standard permit” mechanism. Permits involved working with the solid waste permit to plan the emissions structure keeping major source thresholds in mind. Permits involved emissions estimates, required narrative, maps, process diagrams, and forms. Coordinated with the Texas Commission on Environmental Quality (TCEQ) on review and approval of documents. Utilized knowledge of solid waste side of the permitting process to ensure that permit was written not to constrain landfill operations or future development options.
- Permitted several types of landfill operations utilizing Texas’ “permit-by-rule” mechanism (formerly the standard exemption). Permitted operations include the following: painting operations, liquid stabilization/solidification, and flares.

Gas Collection and Control System Designs and Landfill Gas-to-Energy (LFGE) Projects

- Prepared a GCCS Design Plan and construction plans and specifications for the initial construction of a GCCS at the Caja Del Rio Landfill in Santa Fe, NM. The GCCS Design Plan was the first in the State of New Mexico to receive approval for numerous alternate operating procedures. Acted as certifying engineer for gas system installation.
- Prepared a GCCS Design Plan and construction plans for the initial construction of a GCCS at the Rio Rancho Landfill in Rio Rancho, New Mexico (2005-2006). Through this work, Mr. Mezzacappa became familiar with NMED procedures and requirements for such plans. Answered questions during construction as necessary, and was involved in the bidding process.
- Served as Project Manager for SCS’s recently completed a LFGE feasibility study for the City of Corpus Christi, TX. This study included the following aspects:
 - An estimation of LFG production over the next 50 years using SCS’s proprietary LFG model.

- An assessment of various LFG utilization alternatives (electrical energy, direct use/medium-Btu gas, high-Btu gas, etc.).
 - An overview of various financing mechanisms, incentives, and related governmental programs for promoting LFGE, including GHG provisions.
 - An assessment of the various permitting programs of the TCEQ and other agencies as related to the LFGE project.
 - Short- and long-term recommendations for developing LFGE.
- Prepared the design, construction plans, specifications, and bid documents for initial gas system construction for the City of Denton Landfill in Denton, TX. Design included accommodation of moisture addition and future build-out of engines. This project also included TCEQ permitting and operation and maintenance (O&M) of the LFG system to enable the use of LFG as the heat source for the bio-diesel production facility at the landfill.
 - Prepared construction plans for GCCSs at landfills in Lima, Peru, and Valparaiso, Chile, for private companies. Plans were prepared for both landfills for the initial system construction and were translated into Spanish in the SCS Phoenix office. Site visits to both landfills were conducted. Special challenges included determining the materials available for construction and construction methods available at each landfill.
 - Prepared construction plans for the initial construction of a GCCS at the Northwest Regional Landfill in Surprise, AZ. This initial system included above-ground pipe and approximately 15 gas extraction wells as well as an enclosed flare. Acted as design engineer during construction to answer questions as necessary.
 - Prepared LFG system design documents for the initial phase of construction at the ECDC Landfill in East Carbon, UT. The initial system included approximately 20 wells, an open, skid-mounted flare, and condensate management structures. The system was constructed in 2004.
 - Prepared LFG system expansion plans and specifications for GCCS expansion at the Covell Gardens Landfill in San Antonio, TX. Project included bid support after finalization of plans and specifications, including pre-bid meeting participation and coordination and an engineer's cost estimate.

Other Air-Related Compliance Rules

- Worked with the Caja Del Rio Landfill for the last several years to help prepare emissions inventory updates for NMED.
- Prepared a standard air permit for high-Btu LFG plant in Texas (the first permit of its kind in the state), and accommodated both the plant and backup flare.

- Prepared over a dozen air permits for landfills and transfer stations for both private and public landfill owners to comply with new minor source permitting requirements (Subchapter U).
- Performed annual emission inventory and fee work at many landfills in Texas and New Mexico; including the following facilities: Caja Del Rio, DFW; Westside; Skyline; Austin Community; and Covell Gardens.

Publications and Presentations

“Air/GHG Regulations & Reporting Affecting MSW Landfills,” 2014 New Mexico Recycling and Solid Waste Integrating Solutions Conference, 2014.

“Importance of Landfill Fill Progression Planning and Placement of Intermediate Cover,” 21st Century Solid Waste Management Primer Training Course, 2014.

“LFG Collection and LFG Energy Technologies,” USEPA Landfill Methane Outreach (LMOP) Texas Workshop, 2013.

“When Can Co-Located Facilities Be Considered Separate Sources for Air Compliance Purposes – The Concept of Common Control,” SWANA Landfill Gas Symposium, 2011.

“EPA’s New Greenhouse Gas Reporting Rules – What This Means for MSW Landfills,” TxSWANA Annual Conference, 2010.

“Landfill Gas Systems – A General Overview,” ASTSWMO State Solid Waste Managers Conference, 2005.

“Air Quality Pre-Construction Permits for MSW Landfills,” SWANA Annual Landfill Symposium, 2000.

Co-authored “Air Regulations and Their Impact on MSW Landfills” with Brian Dudley, PE, Texas SWANA Regional Conference, 1997.

“Emissions Inventories for Municipal Solid Waste Landfills,” Options for Texas Conference, 1995.

“Alternate Liner Design and Approval for the Johnson Ranch Landfill in Odessa, Texas – Use of the HELP and MultiMed Models,” Options for Texas Conference, 1995.