

CASE STUDY

New Fuel Facility Leads to Decommissioning of Old Facility Safely and Efficiently

Permanently closing a facility can be a complex process, especially when hazardous materials are present, such as jet fuel. After Burns & McDonnell successfully constructed a new \$50 million jet fuel storage facility at St. Louis Lambert International Airport (STL), the focus turned to the former fuel storage area built in the 1950s that needed to be safely and efficiently remediated.



Challenge

Airlines operating out of St. Louis Lambert International Airport (STL) in St. Louis, Missouri, have greatly benefited from a new \$50 million jet fuel storage facility capable of holding 3 million gallons of jet fuel. Designed and built by Burns & McDonnell, the facility began operation in August 2021.

Once the new fuel storage facility was up and running, STL Fuel Company LLC, a consortium of airlines operating at STL, partnered with Burns & McDonnell to lead the complex process of decommissioning the airport's old fuel storage area safely, efficiently and cost-effectively.

The former fuel storage area at STL was one of the oldest and largest airport underground storage tank systems (UST) in the country, with 49 underground

Project Stats

Client

STL Fuel Company LLC

Location

St. Louis, Missouri

70+

AGE, IN YEARS, OF OLD FUEL STORAGE FACILITY

49

UNDERGROUND TANKS REMOVED

\$500K+

MONEY SAVED BY RECYCLING AND REUSING MATERIALS

storage tanks. Forty-one of those tanks ranged in capacity from 30,000 to 60,000 gallons of jet fuel while other smaller tanks held material such as gasoline, wastewater or glycol.

In general, the responsibilities of Burns & McDonnell included project management, removal action management and oversight, labor support, health and safety, project documentation, permitting, Stormwater Pollution Prevention Plan (SWPPP) inspections and corrective measures, implementation of the Ambient Air Monitoring Plan (AAMP), confirmation soil sampling, and subcontractor coordination.

Solution

The environmental challenges the project presented required a well-planned approach to manage every aspect — from planning to permitting to extensive remediation and closure. Burns & McDonnell took a collaborative approach to creating a Removal Action Plan (RAP) with the Airport Authority and state regulators that included objectives for the management of impacted soils and liquids, along with activities associated with demolition, tank removal, excavation, backfill and site restoration.

Steps within the decommissioning process also required coordination with fuel farm operations due to two interstate petroleum pipeline receipt facilities operated by separate companies responsible for their own demolition.

An airport terminal, public road and parking facilities all remained open during the project without disruption, thanks to ongoing monitoring for any fugitive air emissions during remediation. The team already had developed an AAMP to establish baseline conditions for comparison.

Implementing the RAP began in November 2021, starting with abandoning wells, emptying tanks and transferring fuel to the new facility. Next came demolishing structures, both above and below ground, before excavating and disposing of impacted materials, sampling backfill and bringing in new material for placement, compaction and grading that resulted, ultimately, in site restoration.

The team coupled on-site field screening techniques with quick turns negotiated with a local lab to sample unimpacted and less-impacted soil material so that the material could be beneficially reused as needed for backfill, significantly reducing the amount of landfill waste and corresponding equipment and labor that would have been required to transport it for off-site disposal.

At the airport's request, soil samples collected from two borrow source sites were analyzed for an extensive list of compounds, including PFAS. Missouri does not currently

provide screening levels for PFAS in soils, therefore, the USEPA Regional Screening Levels (RSLs) were used for a comparison of PFAS data. None of the samples exhibited any detections for PFAS-related compounds above laboratory testing limits and the laboratory reporting limits for all PFAS compounds in all samples were below the corresponding USEPA RSLs. Based on the results of soil samples collected, both sites were approved for providing backfill. Any fuel-impacted material was removed.

Concrete from the containment area and surface pavement was processed on-site and also reused as backfill in deeper excavations. Off-site fill dirt located on property owned by the airport was used for the upper portion of backfill.

Results

By planning to recycle and reuse materials, where appropriate, the overall project cost was reduced by over \$500,000. The recycling and reuse also reduced potential for traffic congestion, lowered GHG emissions and minimized landfill waste.

"The decisions made by Burns & McDonnell throughout the decommissioning project is what directly led to its overall success," Airport Director Rhonda Hamm-Niebrugge says.

Burns & McDonnell completed the decommissioning in October 2022 with no recordable health and safety incidents, regulatory violations or airport passenger or tenant complaints. The degree and the accuracy of the extent of cleanup achieved allows the Airport Authority to redevelop the site for commercial use. The Missouri Department of Natural Resources (MDNR) approved the Removal Action Closure Report and issued a No Further Action (NFA) letter in September 2023, for the site, which is considered one of the largest underground storage tank remediation projects in the country. The site will not require future long-term monitoring for regulatory purposes, with no additional restrictions on the property as long as it is used for nonresidential purposes.

About Burns & McDonnell



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