



NES was selected to fabricate an integrated Dual Phase Extraction / Groundwater Treatment system for a retail petroleum service station in New Jersey. In order to address groundwater solids loading and maintain system operation up-time, the system included multiple bag filters with an automated controls approach to switch between lead and lag filter banks. The system enclosure was designed and fabricated as a wooden shed with aesthetic considerations to blend with the existing site architecture and meet local building zone requirements.

Design Parameters

Site Contaminants	Gasoline
DPE Vapor System	500 acfm nominal capacity and 28 inches Hg maximum vacuum with catalytic oxidizer for vapor treatment
DPE Water Recovery	15 gpm
Site Power	208 VAC, 3 phase, 4 wire
NEC Area Classification	Class 1, Division 2 system interior with Non-Classified exterior

System Equipment

DPE Blower	Oil-sealed liquid ring pump (40 hp)
Oil Water Separator	Stainless steel construction with inlet solids hopper
Solids Filtration	Multiple bag filter units with automated lead-lag switching process
Air Stripper	Low profile 5 tray unit (induced draft design for operation with catalytic oxidizer - blower 15 hp sized for oxidizer pressure drop)
Water Polishing	Liquid phase carbon
Off-Gas Treatment	Catalytic oxidizers (electric operation) dedicated to each vapor stream (liquid ring pump and air stripper)
Controls	PLC with remote operation, remote notification, and data-logging
System Enclosure	Wooden shed (exterior 25 feet x 12 feet x 9.5 feet)



NES was selected to fabricate an integrated Dual Phase Extraction system for a retail petroleum service station in Arizona. Two rotary claw vacuum pumps operating in parallel were provided to meet the specified flow performance and system operation at the site elevation of 5,400 feet.

Design Parameters

Site Contaminants	Gasoline
DPE Vapor System	600 acfm at 15 inches Hg vacuum with catalytic oxidizer for vapor treatment
DPE Water Recovery	10 gpm
Site Power	240 VAC, 3 phase, 4 wire
NEC Area Classification	Class 1, Division 2 system interior with Non-Classified exterior

System Equipment

DPE Blower	Rotary claw vacuum pumps (2 units in parallel - 20 hp each)
Off-Gas Treatment	Catalytic oxidizer (electric operation)
Water Treatment	Existing liquid phase carbon (to be installed at the site location)
Controls	PLC based with remote operation, remote notification, data-logging, and VFD operation for adjusting each vacuum pump performance
System Enclosure	Steel cargo shipping container (exterior 20 feet x 8 feet x 8.5 feet)



NES was selected to fabricate an integrated Dual Phase Extraction / Groundwater Treatment system for a vehicle service center and auto body repair facility in New Jersey.

Design Parameters

Site Contaminants	Gasoline and other fuel products
DPE Vapor System	100 acfm at 18 inches Hg vacuum with carbon for vapor treatment
DPE Water Recovery	10 gpm
Site Power	240 VAC, 3 phase, 4 wire
NEC Area Classification	Class 1, Division 2 system interior with Non-Classified exterior

System Equipment

DPE Blower	Rotary claw vacuum pump (7.5 hp)
Off-Gas Treatment	Vapor phase carbon (2 vessels in series – 250 lbs carbon each)
Oil Water Separator	Stainless steel construction
Water Treatment	Liquid phase carbon (2 vessels in series – 200 lbs each)
Controls	PLC based
System Enclosure	Wooden shed (exterior 20 feet x 8 feet x 9.5 feet)