



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

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|-------------------------|---|
| 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

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|---------------------|--|
| 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

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|-------------------------|---|
| 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

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|-------------------|--|
| 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

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|-------------------------|--|
| 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

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|---------------------|--|
| 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) |