



MLE Equipment Ltd.

C O R P O R A T E P R O F I L E

MLE Equipment Ltd. is a North American manufacturer and supplier of wastewater treatment equipment, groundwater/site remediation systems, drinking water treatment systems, and PLC based control panels.

Since 1992, MLEE has supplied high quality treatment equipment to the Canadian, United States, and international markets.

With over 50 years of combined technical experience in petroleum/water separation, water treatment and project management, MLEE staff continues to lead in the design and application of innovative new technologies in the environmental business.

MLEE is an exclusive distributor for QED Environmental Systems, Inc. groundwater sampling and remediation pumps, sample filters, interface meters and air strippers.

Technical Notes

The equipment proposal we have provided in this document is based on our understanding of your requirements. The following sections review the design of the system and detail the individual components. The information provided in this proposal may be modified prior to the construction of the equipment. If no modifications are required, the system will be built as specified, for the price quoted, within the delivery time specified.

Engineering Assumptions:

208V three-phase power available
Hazardous CL 1 DIV 1 location for equipment
Site noise constraints: 80 dBA @ 3 feet
Ambient up to 100 degrees F
Altitude 1856 feet

Design Parameters:

CERTIFICATIONS:

Control panel to be UL certified

VACUUM EXTRACTION SYSTEM:

VES system to have a one branch eleven leg influent manifold
SVE system capacity – 500 SCFM ~~at 45" WC~~ **at 15" WC**
MLEE 85 G vapor liquid separator

ENCLOSURE MODULE:

Equipment mounted in 6'x 12' enclosure, piped, wired and tested; all wiring suitable for Class 1 Div 1 locations

CONTROL PANEL:

Relay based control system with control and alarm features

Summary of Revision 2 Changes:

1. Option pricing has been added to increase the Soil Vapor Extraction (SVE) blower from 3 HP to 5 HP.
2. By customer request, an hour meter has been added to the cover of the inner swing panel.
3. Pricing now includes extended financing charges.
4. By customer request an option has been added for the change of the SVE inlet and outlet flow meters from pitot style flow indicators to venturi style flow indicators.
5. SVE discharge piping shall be shedual 80.

Summary of Revision 1 Changes:

6. Soil Vapor Extraction (SVE) blower haas been down sized form 500 SCFM @ 45" WC to 500 SCFM @ 15" WC.
7. SVE blower has had a butterfly valve added for throttling both in pricing and in the quote descritpion.
8. SVE influent manifold will contain ball valves of brass construction.
9. Pricing and description for the remediation trailer has been updated to include a 6' x 12' traielr with 8' 6" height.

Equipment Description

VACUUM EXTRACTION MANIFOLD MODULE

- Includes: One 6" vacuum extraction manifold with eleven 3" legs, each leg to contain:
- Throttling valve
 - Gate valve
 - Vacuum gauge
 - Sample port
 - Termination outside of enclosure

VAPOR LIQUID SEPARATOR MODULE

- Includes: VLD-800, 85 G vapor liquid separator with:
- Interior epoxy coating
 - Exterior to be primed and painted with a two component chemically-cured urethane gloss enamel (MLEE Blue)
 - Removable top
 - Sight glass
 - High level alarm switch - discrete input
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- Vapor inlet piping to vapor liquid separator to contain:
- Vacuum gauge
 - Sample port
 - PVC piping
- Liquid discharge piping from vapor liquid separator to contain:
- Ball valve
 - PVC piping to be terminated outside of enclosure

PRESSURE FAN SOIL VAPOR EXTRACTION BLOWER MODULE

- Includes: New York Blower model 2006A blower with ~~10 HP~~ 5 HP
230/460V/3P EXP motor:
- Discrete output

- Performance at inlet of blower: 500 SCFM at 51" WC 30" WC
- Expected inlet pressure losses through MLEE system: 15"

Inlet piping to blower to contain:

- Vacuum gauge
- **Throttling valve**
 - **Butterfly valve**
- Vacuum gauge
- Sample port
- Dilution line to contain:
 - Solberg filter/silencer
 - Gate valve
 - MLEE PFLOW Pitot tube air flow indicator
- Vacuum gauge

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▪ PVC piping

Discharge piping from blower to contain:

- Duct silencer
 - Discharge Silencer reducing noise to 75 dba
- Sample port
- Pressure gauge
- MLEE PFLOW Pitot tube air flow indicator
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- PVC piping
 - **Schedual 80**
 - To be terminated outside of enclosure

REMEDICATION ENCLOSURE

Built to NEC Class 1 Div 1 standards, all wiring intrinsically safe and all equipment pre-piped factory tested and mounted in enclosure

Includes 6' x 12' enclosed cargo trailer with the following standard features:

- ~~6.5' standard interior height~~
- **8.5' standard interior height**
- Single 3500 lbs axle
- 1800 lbs payload capacity
- Short tongue with
- Aluminum siding
- Independent suspension
- Electric brakes

- Break away kit
- Safety chain
- Four jack stands
- Interior painted plywood
- Insulated walls and ceiling
- Barn-style rear double doors
- Control panel mounted to exterior

Interior to be rated hazardous and to contain the following:

- Vacuum extraction system
- Lighting - powered device
- Ventilation fan with thermostat and hood – powered device
- Heater with thermostat - powered device
- Floor vents
- Emergency stop button
- All influent, effluent, and drain lines plumbed to outside of building

CONTROL SYSTEM

Includes: RELAY Series Relay Logic based control panel with the following standard features:

- UL certification
- NEMA 3R lockable panel enclosure
- Inner swing panel
- Primary circuit protection using external fused main disconnect
- Surge and lightning protection for control system
- Main power block
- Branch circuit protection with circuit breakers for motors
- Motor starters with overload protection
- Branch circuit protection with circuit breakers for powered devices
- Relays for control logic
- 24 VDC IS power supply
- Intrinsically safe barriers
- Wired and installed
- Factory tested prior to shipping

Outside cover of inner swing panel to contain the following:

- HOA switches with green run lights
- Red alarm indicator lights
- Alarm reset button
- **Hour meter**
- Emergency stop button

OPERATION AND MAINTENANCE MANUAL

- Includes:
- Operating instructions for all treatment system components
 - Copy of operating manual for each piece of equipment
 - Summary of system components
 - Summary of system operation principals
 - Summary of operation controls and failsafes
 - Summary of maintenance requirements for each piece of equipment