



EIC Environmental Services

Innovative Solutions

NET Systems



L-NAPL & D-NAPL Recovery

- Light/Dense Non Aqueous Phase Liquids (NAPL) recovery
- Deploy in wells as small as 2-inches in diameter
- Recovery efficiency with 99% product-water ratio
- Reduce O & M costs by nearly 70%
- Minimize or eliminate disposal costs

NET Systems

Subsurface Releases

Leaks and spills from both above-ground and underground storage tanks are an inevitable consequence of operating a petroleum or a chemical facility. Often these releases contaminate the subsurface environment. In the past decade, billions of dollars have been spent remediating subsurface releases but only with partial success. These remedial technologies are not only ineffective in efficiently recovering the released product, but often lead to costly and time consuming cleanup processes. In addition, most of the technologies produce vast quantities of water, air, or emulsified product which is expensive to dispose.

Finally A Practical and Cost Effective Solution!

Based on extensive experience addressing petroleum and chemical spills, EIC has developed a simple but practical solution to recover both light and dense non aqueous phase liquids (L-NAPL and D-NAPL), also known as free-phase product. The solution led to the development of a process which recovers primarily the product thus eliminating the need to pump groundwater associated with conventional remedial techniques.

The process, known as Non-aqueous

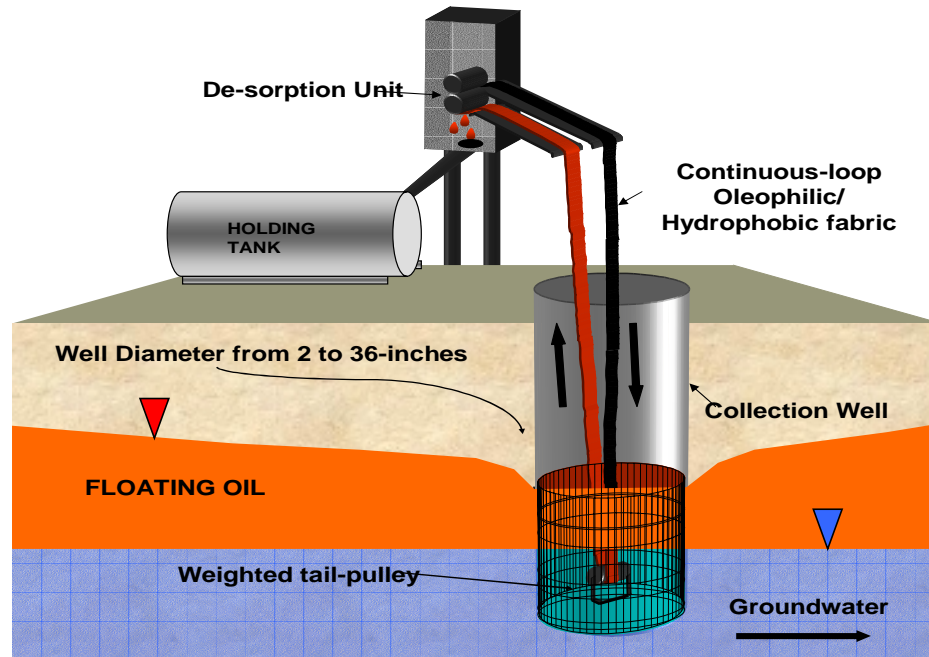


Extraction Technique (NET™), utilizes an oleophilic/hydrophobic fabric capable of adsorbing the product with a 99% recovery-efficiency. The fabric is conveyed in a continuous loop into the well to intercept the oil-water interface. As the fabric travels through the interface, product is adsorbed. The adsorbed product is removed in a specially designed de-sorption unit and the recovered product is gravity drained into a storage drum or tank. The recovered product can be periodically transported to a recycle facility for reuse.

The system can also be used to conduct recovery/recharge tests to identify the true product recharge potential. Based on the results of the test, EIC can adjust the recovery rates to match the recharge rate. If hydraulic control is necessary, the NET system can replace the product recovery pump in a dual-pump scenario.

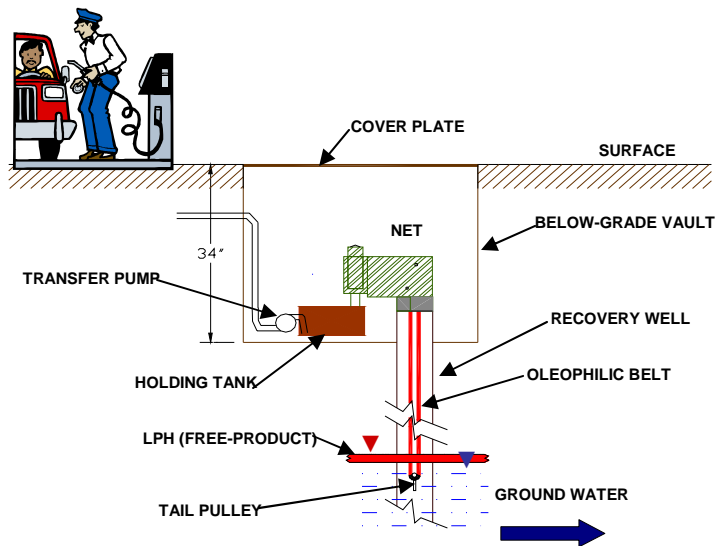


RECYCLE PRODUCT



- ◆ Deploys in wells as small as 2 inches in diameter and to depths up to 50 feet below grade (installation in greater depths available with minor modifications).
- ◆ Can be used along with a groundwater depression pump.
- ◆ Powered by electric, solar, hydraulic, or wind energy.
- ◆ Below-grade installation available
- ◆ Explosion-proof upgrades available.
- ◆ Groundwater fluctuations are not a limiting factor.
- ◆ Telemetry packages available for remote operation and maintenance.
- ◆ Recovery rates range from less than 1 gallon per hour (gph) to greater than 100 gph.
- ◆ Eliminates the need for groundwater or air permits compared to conventional recovery techniques.
- ◆ O & M costs are minimal.
- ◆ Recovered product can be recycled.

Below-Grade Installation



The explosion/flame proof unit featured here is ideal for installations at service stations, driveways, or other areas that do not permit surface obstructions. The system was designed for installation in a below-grade vault 2-foot wide and 3-foot long. The unit has a 20-gallon sump equipped with a automatic level-controlled transfer pump for remote conveyance of recovered products.



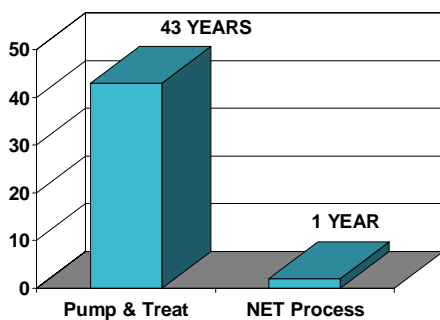
Other Applications

Because the oleophilic fabric can be aligned in a horizontal position as well as vertical position, the NET systems can be deployed in a variety of other applications with minor modifications. This versatility provides an opportunity to recover product from sumps, catch-basins, lagoons, holding ponds, API separators, and even on rescue boats. The triple roller units recover product at rates in excess of 450 barrels per hour from larger oil spills on land and water.



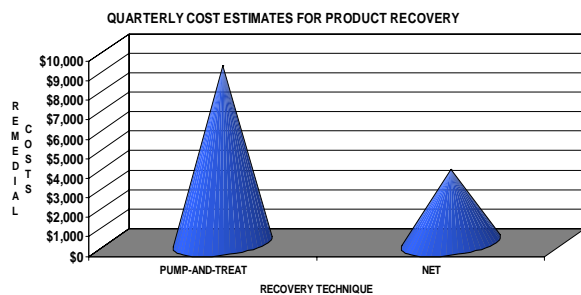
At a site in the Caribbean, the NTST series NET system was adapted to recover a surface spill of petroleum products within an above ground storage tank farm.

CLEANUP TIME



At a petroleum terminal in the USA, conventional recovery technologies would have taken 43 years to recover the amount of product the NET system recov-

COST SAVINGS



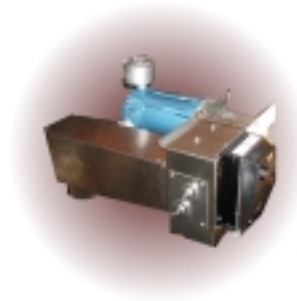
NET systems typically save over 70% in overall operation and maintenance costs.



NET System

The standard NET units can be installed in a variety of settings. Variable speed drives and timer controls are optional. Product recovery rates range from less than 1 gph to 100 gph.

Order #: NTST Series
Type: SS Housing



Explosion/Flame Proof System

These units are equipped with explosion-proof motors for application in areas that pose a potential fire hazard. Variable speed drives are optional. Recovery rates range from 1 gph to 100 gph.

Order #: NTEP Series
Type: SS Housing



Solar Powered System

At remote sites, solar powered units are ideal. Since, these systems depend on sunlight for power, timer controls are not necessary. Recovery rates range from less than 1 gph to 50 gph.

Order #: NTSP Series



Hydraulic System

For larger surface and subsurface cleanups, hydraulic-powered systems can be installed in a variety of settings. Variable speed drives are optional. Recovery rates range from 50 gph to 1800 gph.

Order #: NOHS, NOST, NOEP
Type: Mild steel sandblasted with two coats of paint

Oleophilic Fabric
 These fabrics are made of patented polypropylene materials extruded with a special texture to enhance the oleophilic properties. Belt sizes range from 1-inch to 36-inches in width.

Order #: OF Series
 Type: Flat and round

Oil/Water Decanters
 In slow product recharge environments, EIC recommends a mini- oil/water decanter to separate small quantities of water recovered.

Order #: OWD Series
 Type: Stainless Steel

Weighted Tail-Pulley
 Properly designed and calibrated weights are key to successful installation of the NET systems.

Order #: WP Series
 Type: Stainless Steel

Telemetry System
 Remote sites can be operated and/or monitored using a telemetry system. Options include secure web-enabled applications for world-wide access.

Order #: TS Series
 Type: Sensaphone or SCADA

Riser Assembly/Weather-Proof Housing
 In an above-grade installation, a riser assembly is required to facilitate gravity drainage and to prevent wind-blown spills. Weather-proof enclosures are available.

Order #: RA and WP Series
 Type: PVC or variable

Installation/ O & M Service
 EIC technicians are experienced in properly installing the NET systems based on prevailing site conditions . The technicians can also operate and maintain the system to enhance

Order #: IS/OMS
 Type: Specify

Below-Grade Assembly
 The NET systems can also be installed flush-to-grade if above-grade installations are desired. Transfer pumps are available to convey product to a remote location.

Order #: BG Series
 Type: Standard or Explosion Proof

Recovery/Recharge Tests
 EIC routinely conducts recovery/recharge tests prior to permanent installations to verify if recovery rates can be sustained over the life of the project. Based on the test-data, recovery rates can be optimized.

EIC PRODUCTS & SERVICES

- Environmental Assessments
- Environmental Remediation
- Environmental Audits
- Hazardous Waste Management
- ISO 14000 Audit Compliance
- Risk & Hazard Assessment
- Safety Products & Services
- Spill Prevention & Control
- Waste Minimization
- Water & Wastewater Treatment

NET INSTALLATIONS

- Atlantic Wood Industries (D-NAPL recovery), Georgia
- British Petroleum Oil Service Station, Georgia
- Chevron USA Products Company, Georgia
- Caribbean Utility Company, Grand Cayman Islands
- Colonial Oil Terminal, Georgia
- Dubai Municipality, UAE
- Emirates Petroleum Products Company (EPPCO), Dubai, UAE
- Equiva Enterprises Inc., Multiple Locations
- Former British Petroleum Oil Company Refinery, Pennsylvania
- Former Conoco Refinery, Wyoming
- Former Gulf Oil Terminal—New Jersey, New York, and Rhode Island
- Former Gulf Service Station, Erie, Pennsylvania
- Metropolitan Atlanta Rapid Transit Authority (MARTA), Georgia
- Mobil Oil Corporation, Providence, Rhode Island
- Plantation Pipelines, Washington, D.C.
- Star Enterprise Terminal, New Jersey and Pennsylvania
- Texaco Inc. , New Jersey & Bahamas



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