



**Office of Surface Mining
Reclamation and Enforcement**
Technical Innovation and Professional Services Team (TIPS)



Reel E-Z Portable Pumping System With Redi-Flow Variable Frequency Drive



Description: Three components make up the pumping system. The pump itself is a Grundfos Redi-Flo 2 model. This 220-VAC stainless-steel submersible pump will fit inside 2-inch well casing¹ and can pump against a maximum of about 200 feet of head. At zero head, the pump rate peaks at 9 gpm. The pump discharges through 150-foot of Happy Hose®—1/2-inch ID PVC tubing, electrical leads, and suspension cable bonded into a single unit (tubing volume is 1.6 gal). That hose is carried on the third system component, the manually operated reel with its locking pin, electrical connections, and protective roller. A Redi-Flo variable frequency drive (VFD) supplies 3-phase 220 VAC to the pump. Input to the VFD is normally 120 VAC from household supply or from a generator (recommended minimal generator size for optimal pump performance is 4,000 watts at 115/230 VAC, single phase with voltage regulation). The VFD allows the Redi-Flo 2 to pump at various rates, down to 100 mL per minute.

Uses: The device purges wells and can produce water under low-flow sampling conditions.

Maintenance: Depending on the field use, the pumping system requires different levels of decontamination between sampling stations. Final decontamination at the end of the sampling event can be achieved by washing off the Happy Hose® and pumping a solution of Alconox detergent and warm water followed by thorough rinsing with distilled/deionized water. The motor fluid (deionized water) in the Grundfos pump should be drained and replaced before and after each sampling event.

Check-out & Contact Information:

This pumping system is kept at the Technical Services Branch of the Mid-Century Region of OSMRE in Alton, Illinois. The equipment is bulky and would generally not be available for shipping. However, it is available for use subject to the availability of MCR staff to operate the equipment. Alternatively, it might be possible for MCR staff to deliver the equipment to the user in the field. In that case, the item would be temporarily transferred using a Department of the Interior Property Pass, Standard Form DI-1934, signed by the appropriate responsible individuals. Contact Brian Hicks at 202-513-0383 or at bhicks@osmre.gov for more information.

* Operating the pump in wells of greater than 2-inch diameter requires the use of the cooling shroud (supplied on request).