

## PUMP & TREAT SYSTEMS

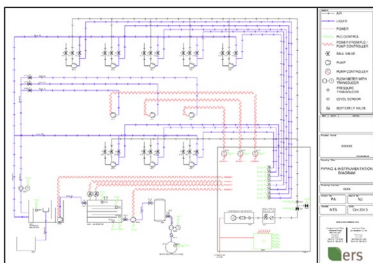
### OVERVIEW:

Many of the sites that we have provided solutions for are affected in some way by impacted groundwater – this can be dissolved aqueous phase contaminants and both aqueous phase and non-aqueous phase liquids – NAPLs. Every site is different and we use our knowledge and experience to select the best approach, specific treatment techniques and equipment to suit the specific circumstances for the site. We use our team of scientists, engineers and technicians to develop the right treatment system, bring it to site and deliver your solution.

### OUR ADVANTAGES:

- Can be designed to remediate almost all groundwater contaminants and NAPLs
- We have a wide variety of pump systems that can be selected according to contaminant nature, flow rates and ATEX / DSEAR requirements.
- Modular treatment units can be designed to provide a site specific treatment train
- Our systems can be designed for manual operation, semi-automatic operation or fully automated, PLC controlled operation with SMS text alarm, remote dial-in and internet data hosting options.

### TECHNIQUES:



Good understanding of the site geology and hydrogeology is required to achieve the best outcomes. Our expert hydrogeologists provide input on the selection of appropriate pumps and recovery rates, so we can then design the system treatment rate.

We then design the treatment processes based on the geo-chemical properties of the contamination, the preferred degradation or removal process and the required performance level – typically a discharge consent imposed by the environmental regulator or waste water utility provider.

Our treatment systems are deployed under our Mobile Plant License in Scotland or our Environmental Permit in England and Wales.

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## EQUIPMENT:



Our pumping equipment includes:

- Submersible borehole pumps
- Air powered total fluids pumps
- Air powered product specific skimmer pumps
- Peristaltic pumps
- Submersible pumps for excavation / sump / large diameter well dewatering
- Transfer pumps – gear, centrifugal.
- Motive systems include compressed air (compressors, or bottled for low intensity applications), 110v, 240v and three phase 415v electric systems from generators or 'hard wired' supplies, direct drive diesel and petrol engine units.

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## TREATMENT TRAIN:

Our basic treatment train elements include:

- Holding tanks – selection of rigid open top, demountable, fully enclosed double bunded units in sizes from 1,000l to 300,000l
- Sediment and DNAPL separation units
- Oil-Water Separators – selection of mobile trailed units for rapid deployment in emergency response and static units
- Air stripper for removing volatiles
- Granular Activated Carbon and sand filtration units for water and air stripper off-gas treatment
- Dosing pumps
- Coagulation and flocculation vessels with mixing paddles
- Flow meters, transfer pumps, level monitoring switches

Additional treatment elements are added according to the project's particular requirements.

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## AUTOMATION AND CONTROL

We design automation and control into our systems according to the client and project requirements. These can range from simple electrical circuit 'kill' systems using mechanical float switches through to a fully automated monitoring, reporting, logging and control set-up using programmable logic control (PLC), SMS text messaging, remote dial in and internet data hosting.

Readings for ERS Product Tank (AP1000000M2110193770)

