

## WEBINAR

# RESILIENT TREATED WATER PRODUCTION: COMPLEMENTARY AND HOLISTIC APPROACH WITH MOBILE WATER SOLUTIONS

*Presenter: David Laszlo - Sales Director - NSI Mobile Water Solutions*



# David Laszlo

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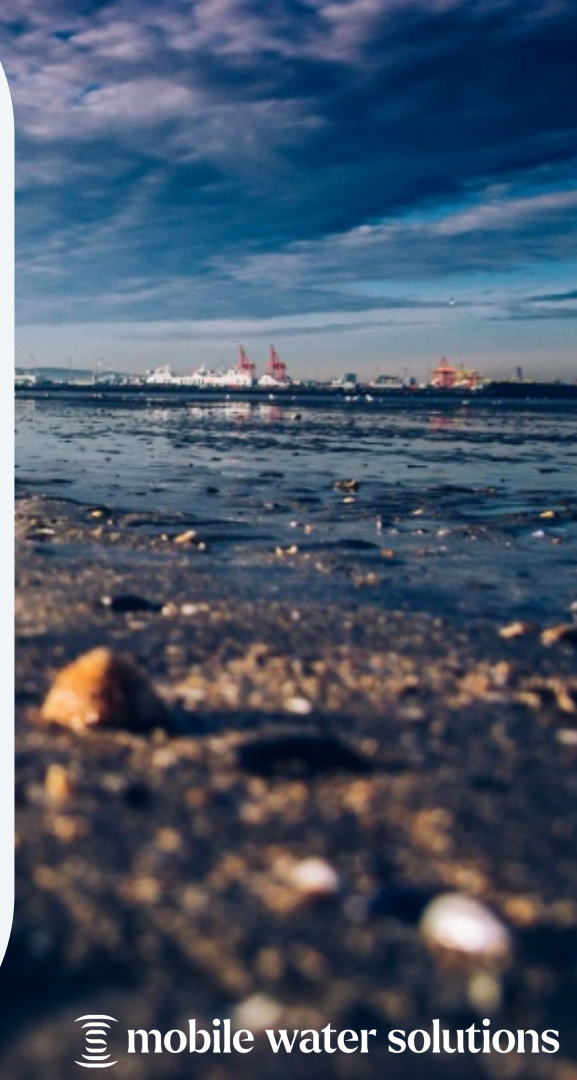
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## Expertise

- 20 years of experience in services and design & build solutions for industrial customers
- Project management, business development strategy and promotion of industrial partnerships



**mobile water solutions**

# WATER AND INDUSTRIAL ACTIVITY ARE HIGHLY INTERCONNECTED AND INTERDEPENDENT



The World Economic Forum classifies **water scarcity and weather events** as important **major business risks**, with **resource scarcity is seen as the second biggest risk** for 2023 and beyond.



The world population is increasing by **80 million people each year**.

By 2050, the world will need **+55% of water, +70% of energy, +100% of electricity**.



Industry & Energy account for **19% of the world's total water withdrawals**.

By 2035, **water withdrawal** for energy production will **increase by 20%** and **water consumption by 85%**.



**90% of all electricity generation is water intensive**. High water quality across all power generation sectors is an integral part of every process.



Water is used in high quantities in the oil & gas industry. Major uses downstream include: **process water, cooling water and steam production**.



# COMMON ISSUES IMPACTING WATER MANAGEMENT

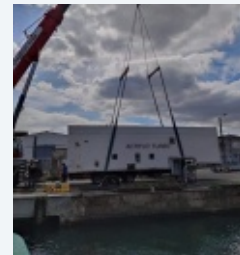


# MOBILE WATER SYSTEMS

Assets pre-packaged on a trailer, skid or container for maximum mobility and responsiveness, treating from 1 m<sup>3</sup>/h to 1000 m<sup>3</sup>/h of process water, wastewater, and reuse water.

Technologies available:

- Filtration
- Ultra-filtration
- Reverse osmosis
- Deionisation
- Degassing
- Clarification
- Softening
- Dissolved air filtration
- Seawater reverse osmosis
- Many more



# (ENSURE CONTINUITY OF PRODUCTION)

## CASE 1: SUDDEN PROBLEM ON DEMIN STREETS

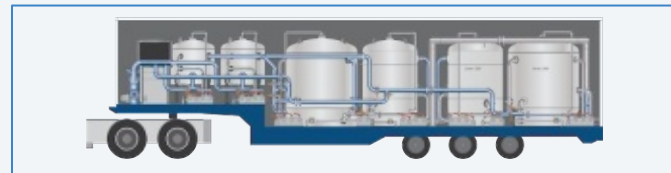


### ISSUE(S)

- Leakages
- Automation & control system
- IEx resins quality or performance

### SOLUTION:

#### MOBILE DEIONISATION TRAILER + MIXED BED TECHNOLOGY



### BENEFITS

- High resins capacity
- Plug-and-Play
- Quick delivery
- Off-site regeneration
- Water savings





# (ENSURE CONTINUITY OF PRODUCTION)

## CASE 2: WORSENING OF RAW WATER (RIVER WATER)



### ISSUE(S)

- High TSS
- High TOC
- High conductivity



### SOLUTION: ULTRAFILTRATION + ACTIVATED CARBON FILTER + REVERSE OSMOSIS



### BENEFITS

- High quality: Turbidity < 0,1 NTU - TOC < 0.1 mg/L - Conductivity reduction by at least 95%
- Quantity of water: up to 1000 m<sup>3</sup>/h
- Low footprint
- Easy and quick set-up

# SUPPORT PRODUCTION GROWTH WITH ADDITIONAL TREATED WATER

## CASE 3: WELL-WATER TREATMENT



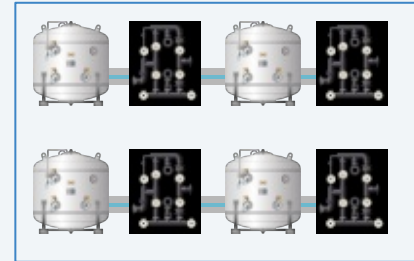
### ISSUE(S)

- Restricted use of drinking water imposed by public authorities
- Restricted use of river water



### SOLUTION:

### IRON AND MANGANESE REMOVAL USING FILTER MATERIAL $\text{MnO}_2$



### BENEFITS

- Automatic backwash
- Low energy consumption
- Quick and easy set-up
- No additional air needed



# SUPPORT PRODUCTION GROWTH WITH ADDITIONAL TREATED WATER

## CASE 4: INCREASED DEMIN WATER DEMAND

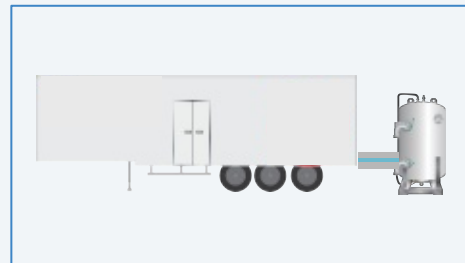


### ISSUE(S)

- Limited / No space available
- Limited CAPEX budget
- Short notice / temporary demand



### SOLUTION: REVERSE OSMOSIS DOUBLE PASS + MIXED BED



### BENEFITS

- Low footprint
- Minimises CAPEX if budget is constrained
- Less regeneration needed
- Off-site regeneration

# SUPPORT PRODUCTION GROWTH WITH ADDITIONAL TREATED WATER

## CASE 5: WASTEWATER REUSE

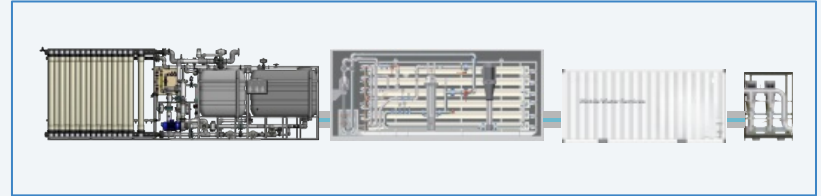


### ISSUE(S)

- Restricted use of drinking water imposed by public authorities
- Low groundwater level / Restricted use of river water



### SOLUTION: ULTRAFILTRATION + RO + TANK + PUMP



### BENEFITS

- Reduced reliance on scarce water supply
- Lower water supply cost
- High quality water
- Wide range of wastewater reuse applications

# UNLOCK AND MAINTAIN OPERATORS' LICENCE TO OPERATE

## CASE 6: ENVIRONMENTAL REGULATIONS IN WASTEWATER TREATMENT



#missionwater



### ISSUE(S)

- Stricter limits for:
  - Heavy metals
  - Organic compounds, etc.
- Issues with existing WWTP

### SOLUTION:

### CLARIFICATION USING SAND-BASED SEDIMENTATION OR DAF



### BENEFITS

- High flow rates with smaller footprint
- Lower waste disposal
- Optimisation of water footprint
- Reduction of environmental impact



# REDUCE OPERATIONAL COST AND IMPROVE SYSTEM LIFECYCLE

## CASE 7: CHEMICAL SAVINGS



#missionwater

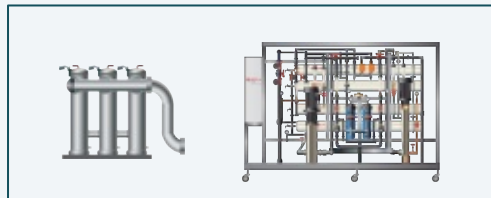


### ISSUE(S)

- Lack of chemicals
- Higher cost of chemicals
- Increased chemical usage
- Decrease efficiency due to deposits, corrosion, pollution

### SOLUTION:

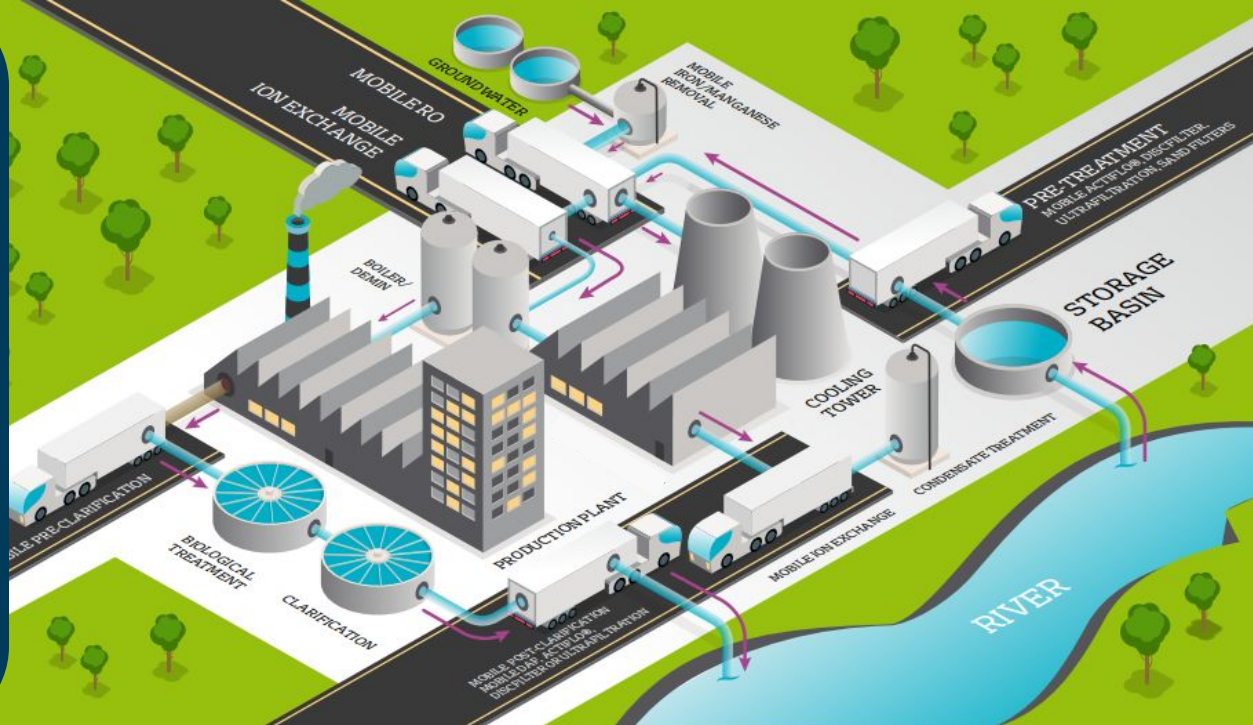
### BAG FILTERS + REVERSE OSMOSIS BEFORE ION EXCHANGE



### BENEFITS

- Cost and time savings: fewer regeneration
- No CAPEX needed
- Flexibility (treatment of a variety of feedwater)
- Small footprint & low maintenance

## THE BENEFITS



## Treatment of river, ground, drinking and waste water

Over 600 assets pre-packaged on a trailer, skid or container for maximum mobility and responsiveness.

To meet all environmental, operations,  
and quality requirements

## Pre-packaged 'plug-and-play' solutions on a trailer, skid or container

Full technical and operations support  
with 24/7 on call duty

6 European depot and regeneration stations for MWS only

 mobile water solutions



# Key figures

Mobile Water Solutions has been working with the industrial sector:

**Since 1998**

**+/-100 FTE  
In Europe**

**Over 1,500  
mobilisations**

**3 IX regenerations  
centres and 6 depots  
across Europe**

**Modern fleet of 600  
with 70% of the  
assets under  
3 to 5 years old**

**A dedicated team to  
MWS  
in Europe**



Regeneration centre



Depot



Sales representative

# Technologies & Capabilities

## Reverse Osmosis MORO



10 m³/h



25 m³/h



50 m³/h



(DP)45 - (SP)100 m³/h

## Deionisation MODI



10-35 m³/h



20-80 m³/h



25-150 m³/h

## Filtration MOFI



MOFI-1200S + MOFI-2700S

15-100 m³/h

Sand-BIRM-Activated Carbon



MOFI-3x60S + MOFI-3x80S

180 m³/h

Bags



200 m³/h

High Flow



MODF-1702/1708/2108

40-220 m³/h

Discfilter



MODF-4x80T

80-320 m³/h

Discfilter

# Technologies & Capabilities

## Degassing



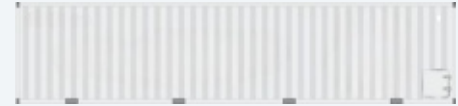
MODA-100

100 m³/h



REMOX-50C

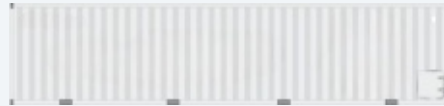
25-75 m³/h



REMOX-100C

100 m³/h

## Ultrafiltration



2 x 140 m³/h (2 skids)



4 x 80 m³/h (4 skids)

## Clarification Actiflo (Turbo)



20-125 m³/h

## Dissolved air flotation (DAF)



10-120 m³/h



# One trusted provider, 3 flexible services



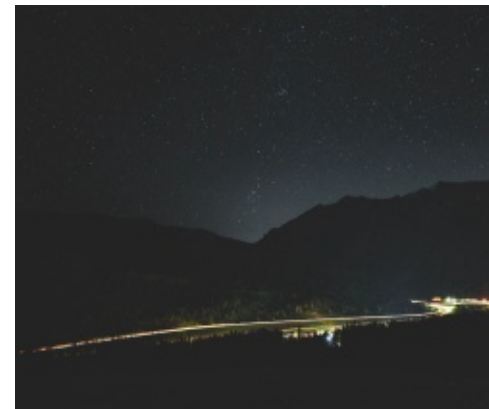
Short-term, immediate cover to ensure business continuity and minimise production loss in the case of an unexpected plant event.

**EMERGENCY**



Maintain the provision of treated water during scheduled maintenance, plant upgrade or commissioning. Flexible arrangements from days up to 12 months.

**PLANNED**



Standard water treatment services for fast deployment and easy set-up. Contracts up to seven year with minimal capital expenditure.

**MULTI-YEAR**

( Q & A )





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