



Freshwater Consumption Decreased by 79%, Use of Reused Water up to 98%, Realizing Cost Savings Over \$43,000, Algeria

Newpark experts implemented a custom-designed solution ensured the Algerian Operator complied with environmental regulations while reducing overall costs.

CHALLENGE	SOLUTION	RESULT
<ul style="list-style-type: none"> • Reduce water consumption • Collect and reuse water • Upgrade and modernize Inefficient Solids Control system 	<ul style="list-style-type: none"> • Detailed review and analysis of waste management processes • Modify and optimize the water circuit, making tank use more efficient 	<ul style="list-style-type: none"> • Water consumption reduced by 79% • Reused water increased by 98%

OVERVIEW

Over time, regulatory requirements around water use have become stricter, and companies are encouraged to adopt efficient waste management to reduce environmental impacts and related costs.

Following the operator's request to investigate better environment practices to reduce the water resource usage, Newpark proposed a solution to rationalize water management and minimize the discharge generated during the drilling process.

As a result, water consumption was reduced by around 79 %. This amounted to an economic savings of approximately \$43,000 USD.

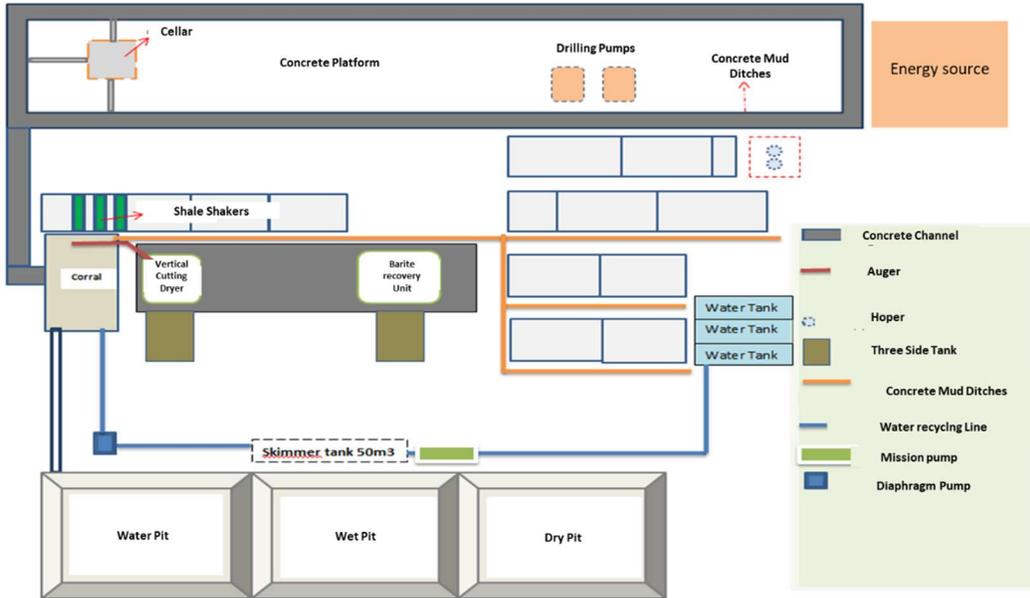
CHALLENGE

Waste reduction at source has been proven to be an effective and beneficial operating strategy. There are many economically and technically feasible waste minimization techniques that can be applied in drilling operations resulting in benefits such as:

- Reducing operating and waste management costs
- Mitigating regulatory compliance concerns

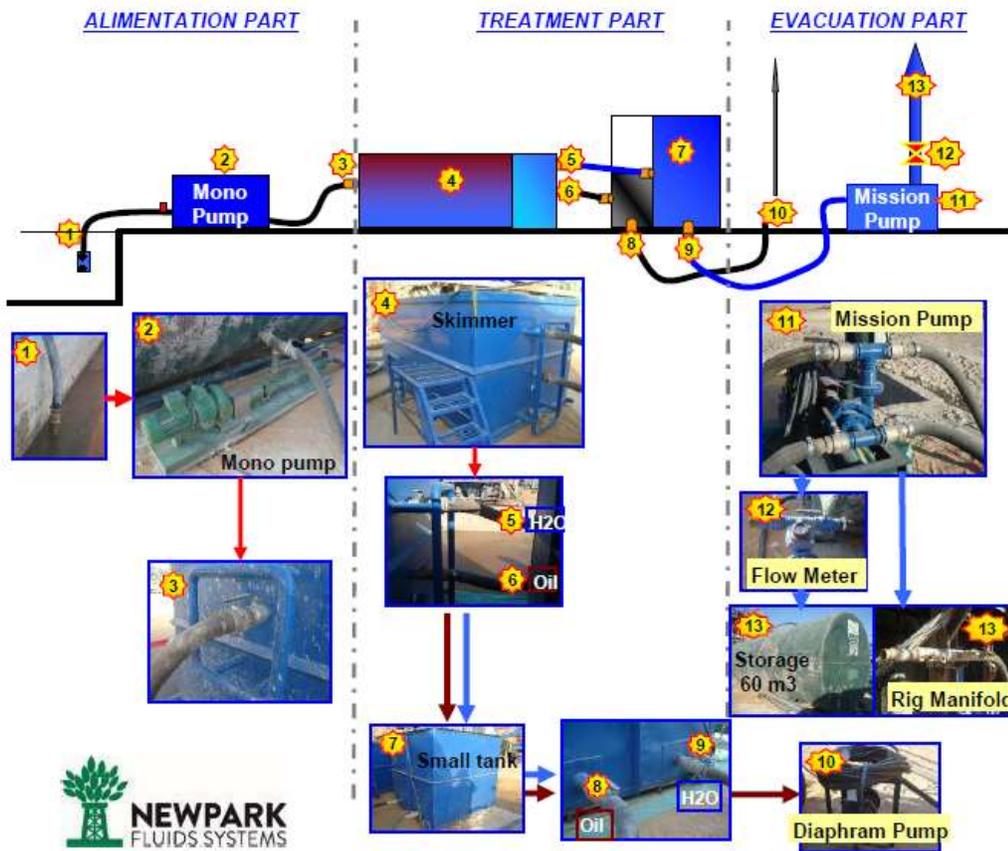
In this case, compliance with the environmental regulations was the primary concern for the waste management solution, with a goal to limit the amount of waste produced and reduce the risk for adverse environmental incidents.

Case History



SOLUTION

Working closely with the operator, Newpark's team of experts conducted a thorough analysis to develop a series of efficiency changes in the solids control and waste management processes.





To optimize the water-use on the rig and maximize potential recycling, modifications were made to the water circuit together with methodology for tank cleaning operations.

System modifications were implemented to prevent the build-up settled solids and to route fluid lines more efficiently, allowing separated water to be consolidated for further re-use.

A 15 m³ capacity tank was used to capture recycled water collected from the skimmer through a buried water pipe. Flowmeters were installed to record the inflow, outflow, and volumes of recycled water at the rig site.



Water after separation



Oil exit from the skimmer

A full HSE risk assessment was conducted on the mud tank cleaning operations to ensure all safety protocols and processes were clearly established. After removal of fluids phases and safe manual extraction of the settled solids, the tank internals were cleaned via rig wash hoses.

To limit further solids build-up, a slide was installed to convey the solids discharged from the Mud Cleaner towards the screw conveyor of the vertical cuttings dryer.

RESULTS

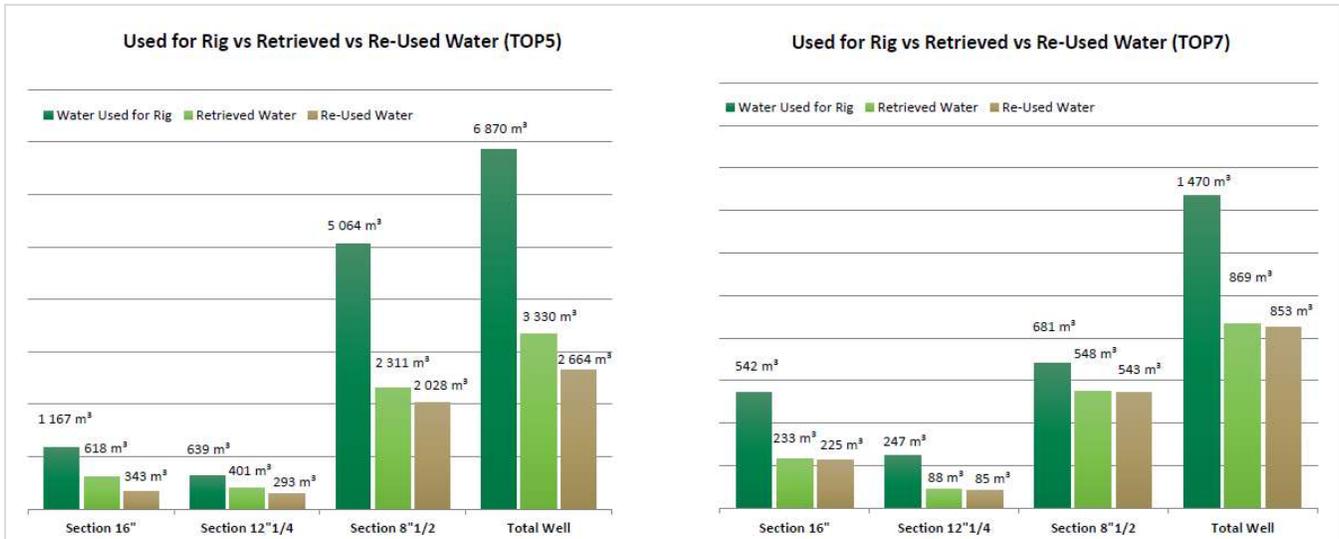
Training and awareness meetings were conducted to align all rig personnel with the waste management goals, and to ensure that the process upgrades, system modifications and new operations protocols were understood.

As a result, water consumption was reduced by around 79% compared to a previous well drilled with the same rig – overall water use on the 16", 12'¼" and 8½" sections was reduced from 6870m³ to 1470 m³.

Case History



The wet pit volume was decreased by around 12%, contributing to cost reductions for the well, saving the operator over \$43,000 USD.



Comparing water consumption data for the 2 wells, effective waste management performance objectives were achieved:

- 59% water was retrieved for well TAOP-7 compared to 48.47% for previous well (TAOP-5)
- 98% water reused for well TAOP-7 compared to 80% reused for previous well (TAOP-5)