

Interim and permanent well mitigation strategies (*revised draft*)

Solution	Problem	Options	Pros and Cons	Estimated Costs
Interim solution	Access to water	Delivered, potable bulk water and potable bottled water	Water from storage tank is not necessarily safe for drinking; the two must be paired	<p>On-going costs:</p> <ul style="list-style-type: none"> - Delivery of bulk potable water between \$400 - \$500 for 2,500 gallon delivery, varies by location. - Delivery of bottled water: \$50 to \$75 per month per house. - Other potential costs: Cost of tank maintenance and cleaning; cost of new storage tank, if needed (roughly \$4,600 for 5,000 gallon tank). - All costs above are for one house per parcel. Costs can vary depending on conditions.
	Water quality	POU	Treats water at one tap; may need ongoing monitoring or maintenance	<p>\$1,000 to \$4,500 per unit per home, for one year.</p> <p>Costs include: initial capital costs (installation, treatment system, monitoring system) and also ongoing operation, maintenance, routine monitoring, and waste disposal costs.</p> <ul style="list-style-type: none"> - Costs vary depending on the contaminant and filtration.
	Water quality	Bottled water	Safe and effective but can be expensive in the longterm; can be difficult to distribute to isolated areas	\$50 - \$75 per month per house, including delivery

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Permanent solution	Access to water	Troubleshoot well to determine options which may include the following:		
		Brushing/acid treatment or other maintenance	Can be effective if mineral build up (i.e., iron, manganese) is causing clogging or poor pump performance; typically doesn't restore flow that has been impeded for long time period; risk of collapsing well if older, iron casing	\$2,500
		Lowering of pump	Often not feasible because pump is already at the bottom of the well. If feasible, pump may need to be replaced with higher horsepower pump and/or sledge may need to be removed/maintenance performed. Energy use increases w depth. Water quality may decrease with depth.	\$1,000 - \$5,000, if feasible
		Drill a new deeper well	Well tests and water quality tests required to assess yield capacity and water quality; gamma ray tests may be required.	\$150 per foot

	Access to water	Alternative water source/ Consolidation	Consolidation with local system is most likely alternative; Households must understand and agree with the advantages and disadvantages of connecting to a local water system.	Costs vary depending on the desired solution, technology, and number of households
	Water quality	Water treatment system	Technical, managerial, and financial capacity should be considered when assessing treatment options.	Costs vary depending on the technology, water contaminant(s), and number of households.
		Alternative source of water	Construction of a new well or consolidation with a nearby water system.	Costs vary depending on the desired solution, technology, and number of households.