2,500-Gallon Off-Grid Water System - Spec Package

Turquoise Estates, Dolan Springs, Mohave County AZ. Prepared 2026-10-20. Labels: Documented = from a cited source; Claimed = a source says so, not verified; Estimate = our number.

1. Key numbers

- System cost: about $4,300 (DIY, 12 V Shurflo pump, no UV, gravel pad) to $13,142 (120 V Grundfos booster, UV, concrete pad, plumber labor up to $2,500 est.). Includes 5.6% AZ sales tax.
- Water at the Dolan Springs standpipe (Mt. Tipton Water Co., 16055 Pierce Ferry Rd, open 24/7): $6.36 per 1,000 gal bulk rate, about $16 per 2,500 gal (Documented: Mt. Tipton tariff, Decision 74755, eff. Oct 1, 2014; confirm it is still current, 928-767-3713). Vending rate $0.25 per 40 gal.
- Delivered water: $90-$180 per 2,500-gal load in the Kingman/Bullhead area (Claimed: Hassell Team blog, "local hauler quotes"). A Kingman hauler lists $200-$500 per 4,000-8,000 gal load depending on location (Claimed: Nextdoor listing, 928-399-3422). Older forum posts cite $25-35 per 1,000-gal drop in Dolan Springs (Claimed, dated, likely outdated).
- Pump power on solar: about 0.1-0.25 kWh/day for 200 gal/day (Estimate) - small next to a 6 kW array.

2. Bill of materials

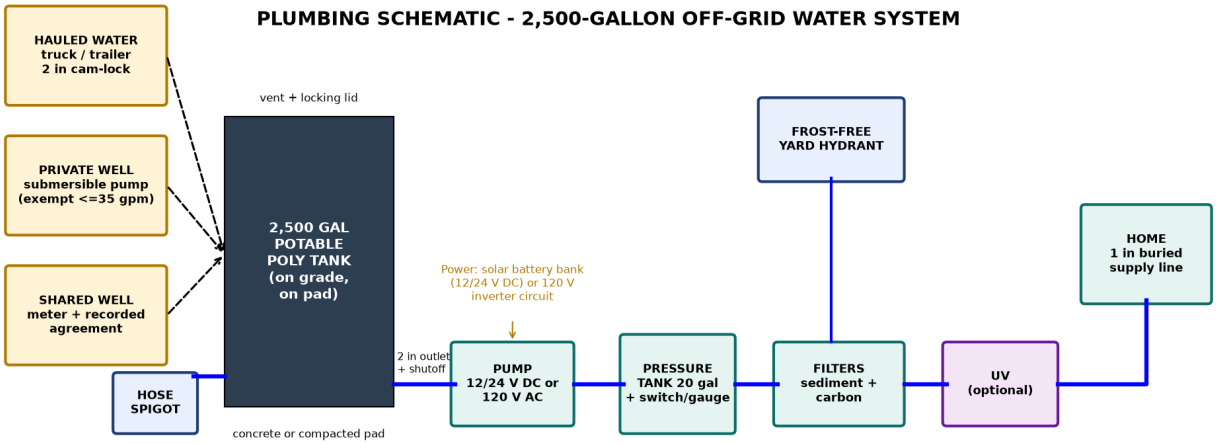
Item	Qty	Low $	High $	Basis / source
Storage tank: Norwesco 2,500 gal vertical potable poly, black (40631), 95 in dia x 91 in H	1	2,199	2,199	Documented (Tractor Supply) https://www.tractorsupply.com/tsc/product/water-only-tank-2500-gal
Tank pad: 4 in reinforced concrete slab ~10x10 ft, or compacted gravel/sand pad ~10x10 ft	1	300	1,200	Estimate
Fill inlet: 2 in cam-lock female coupler + cap, ball valve, screened vent,	1	80	200	Estimate

piping to tank lid				
DC pump option A: Shurflo Revolution 4008, 12 V, 3.0 gpm, 55 psi, 7.5 A max	1	65	123	Documented (listings $64.99-$122.95) https://www.rvupgradestore.com/SHURflo-Revolution-By-Pass-Pump-p/86-8398.htm
DC pump option B: SeaFlo 55-Series 24 V, 5.5 gpm, 60 psi, ~9 A (better for a whole house)	1	140	150	Documented https://environmentalmarine.com/seaflo/fresh-water-pumps-accumulators/seaflo-24v-5-5-gpm-water-pump-sfdp2-055-060-55/
AC pump option C: Grundfos SCALA2 3-45 120 V booster (all-in-one, constant pressure)	1	900	1,200	Estimate (no current price found) https://product-selection.grundfos.com/
Pressure tank: Water Worker 20 gal pre-charged (HT20B)	1	199	199	Documented (Home Depot) https://www.homedepot.com/p/Water-Worker-20-Gal-Pressurized-Well-Tank-HT20B/202846482
Sediment + carbon filters (2 housings, 20 in) and pressure gauge/switch/fittings	1	150	350	Estimate
UV disinfection (optional): Viqua 12 gpm w/ sediment + carbon (IHS12-D4)	1	798	1,373	Documented range (dealer listings) https://www.lwswater.com/viqua-ihs12-d4-residential-uv-system-w-sediment-and-

				carbon-filtration/
Hose spigot outlet at tank (hose bibb + backflow vacuum breaker)	1	25	60	Estimate
Frost-free yard hydrant: Woodford Y34-4 (4 ft bury)	1	175	197	Documented (Home Depot listings) https://www.homedepot.com/b/Plumbing-Valves-Yard-Hydrants/N-5yc1vZca23
Supply line to home: 1 in PE/PEX ~150 ft, buried 18-24 in, + fittings	1	200	450	Estimate
Trenching (~150 ft, rental or contractor)	1	300	900	Estimate
Pump house / insulated enclosure (pump, pressure tank, filters, freeze protection)	1	300	1,500	Estimate
Wiring: 12/24 V DC run from solar battery + fuse, or 120 V AC circuit	1	80	250	Estimate
Materials (pick one pump; low = pump A no UV, high = pump C + UV)		4,072	10,078	
Sales tax 5.6%		228	564	
Plumber labor (optional, Estimate)		0	2,500	
TOTAL		4,300	13,142	

Prices checked Oct 20, 2026; freight/delivery of the tank not included. The Shurflo 4008 (3 gpm) suits a cabin or RV-style use; for a full house with two fixtures running, use the SeaFlo 5.5 gpm or a 120 V booster.

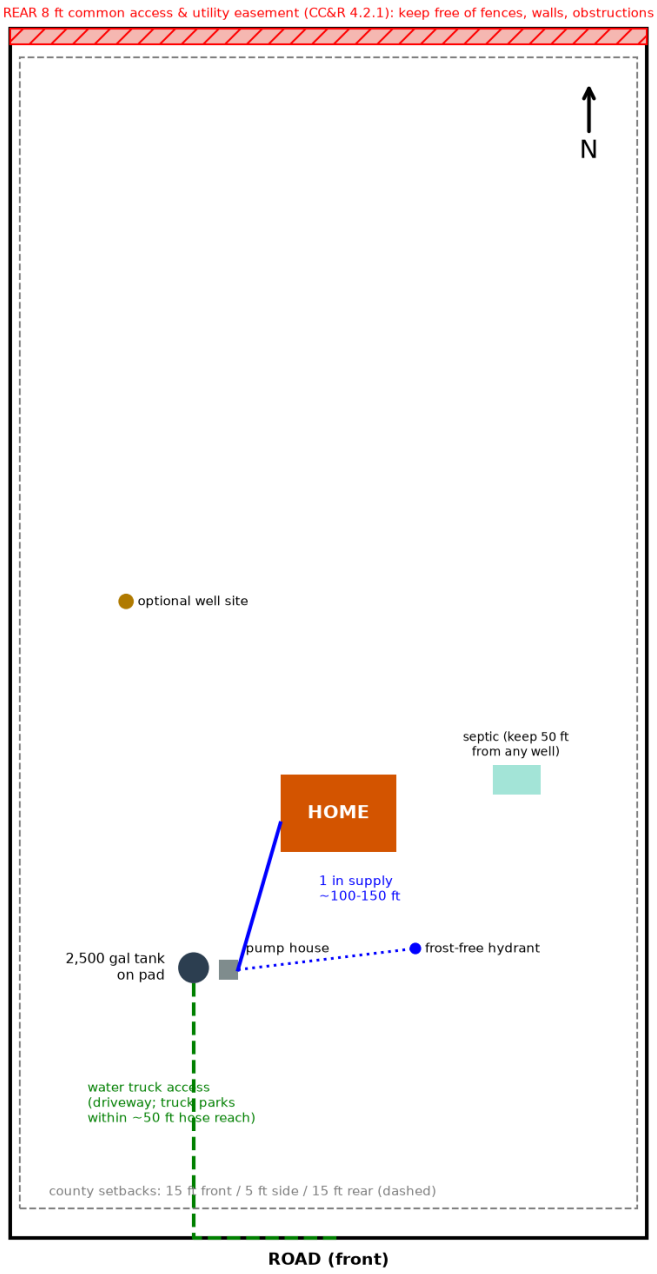
3. Plumbing schematic



CONCEPT DRAWING - NOT ENGINEERING. Verify with Mohave County Development Services and a licensed plumber.

4. Site layout sketch

SITE LAYOUT SKETCH - ~4.75 ac lot, 330 x 627 ft (illustrative, not to survey)



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5. Water use and hauling

Scenario	People	gal/	gal/day	Days per	Loads/yr	Delivered	Self-haul

		person/ day		2,500 gal		$/yr (at $90-180)	water $/yr
Frugal off-grid, 2 people	2	35	70	36	10.2	920-1,840	162
Typical conserving, 2 people	2	50	100	25	14.6	1,314-2,628	232
Family of 4, conserving	4	50	200	12	29.2	2,628-5,256	464
Family of 4, USGS avg	4	82	328	8	47.9	4,310-8,620	761

Per-person use: USGS national average about 82 gal/day (Claimed, cited by Hassell Team); hauled-water households commonly run 25-50 gal/day (Estimate). Self-haul cost counts water only, not fuel or trailer.

Pump power draw (solar)

- Shurflo 4008 12 V: ~90 W while running, 3.0 gpm -> about 0.10 kWh/day at 200 gal/day (Shurflo/SeaFlo watts from listed amps x volts = Documented; SCALA2 watts Estimate).
- SeaFlo 55 24 V: ~216 W while running, 5.5 gpm -> about 0.13 kWh/day at 200 gal/day (Shurflo/SeaFlo watts from listed amps x volts = Documented; SCALA2 watts Estimate).
- SCALA2 120 V (est.): ~550 W while running, 8 gpm -> about 0.23 kWh/day at 200 gal/day (Shurflo/SeaFlo watts from listed amps x volts = Documented; SCALA2 watts Estimate).

6. Supply option A: hauled water

- Fill stations: Mt. Tipton standpipe, Dolan Springs, 24/7 (Documented). Joshua Tree Water, 18097 Olive Dr, Dolan Springs - self-serve filtered water about $0.25/gal, for drinking jugs, not tank loads (Claimed, directory site). Kingman: Castlerock Fill Stand for tank-haul accounts (Documented, City of Kingman; price not published); city hydrant meter $6.96/1,000 gal with $1,740 deposit (Documented, Kingman water fees).
- Haulers: McIntosh Potable Water (6,500-gal state-inspected food-grade tanker, serves Kingman/Havasu/Bullhead; call for price) (Documented, own site). Oasis Pump / AZ Equipment Repair, Kingman, 928-293-0186 (Documented; mainly job-site water). Kingman water delivery, 928-399-3422, $200-$500 per load (Claimed).
- Self-hauling: water weighs 8.34 lb/gal (Documented physics). A half-ton pickup bed carries roughly 150-250 gal safely; 300-500+ gal needs a trailer tank rated for the load, with brakes (Estimate - check truck payload/GVWR). A 2,500-gal fill would be 5-10 trips with a 300-500 gal trailer.
- ADEQ: A.A.C. R18-4-214 (Hauled Water) sets rules for water hauled to PUBLIC water systems - approved source, potable-only labeled tank, chlorine dosing at loading, free chlorine 0.2-1.0

mg/L checked at each delivery, logs kept 3 years (Documented, LII). It does not appear to regulate a homeowner hauling for their own use (Estimate - our reading). Ask haulers for food-grade/potable tank proof; use a potable-rated hose and tank (NSF/ANSI 61).

- Best practice: treat stored water with chlorine or UV, clean the tank yearly, keep the lid locked and vent screened. Black or dark tanks limit algae.

7. Supply option B: private well

- Depth: Dolan Springs ZIP 86441 median drilled depth 683 ft (typical 480-803 ft), median static water level 520 ft, median yield 10 gpm, from 376 ADWR records (Claimed: arizonawelldata.com analysis of ADWR data; verify on ADWR Well Registry for nearby parcels).
- Cost per foot: $30-$65/ft in the Kingman area (Claimed: A-1 Arthur's Well Service). At 683 ft that is about $20,500-$44,400 to drill and case; full system with pump, tank and power about $41,000-$68,300 (Claimed: arizonawelldata.com). A deep well also needs a large pump and real power - a big load on an off-grid solar system.
- Permits: file ADWR Form 55-40 Notice of Intent to Drill before drilling; licensed well driller required; authority valid 1 year (Documented, ADWR). Fee $100 for an exempt domestic well outside an AMA/INA (Documented, A.A.C. R12-15-104 / ADWR). Dolan Springs is outside any AMA (Claimed - verify on ADWR map).
- Exempt well: pump capacity 35 gpm or less, domestic use (Documented, ADWR).
- Hybrid: many owners pump a deep well slowly into the 2,500-gal tank, then use the booster pump for pressure. The tank in this package works for that.

8. Supply option C: shared well

- A shared well can still be an exempt well if the pump is 35 gpm or less and use is domestic (Documented, ADWR FAQ). ADWR does not regulate or enforce shared well agreements (Documented, ADWR FAQ).
- Record the agreement with the Mohave County Recorder and send ADWR a copy for the well file (Claimed: Dunaway Law Group; Maricopa County guidance lists contents). Include parties, legal descriptions, easements for well and lines, cost shares (drilling, power, repairs), metering, management, and dispute resolution.
- Cost split: usually equal shares among the lots served, or by meter (Estimate). Example: 2-4 lots sharing a $45,000-$65,000 well = about $11,000-$33,000 each (Estimate). Recommend a licensed attorney draft it.
- Turquoise note: CC&R 4.2 says no waterlines or utility lines may be installed on Lots or Common Area "except as initially designed, approved and constructed, or as approved by the Declarant." Shared well lines between lots need Declarant approval and easements.

9. Mohave County and CC&R requirements

- Building permit with hauled water: Mohave County's Building Permit Application lists "Water Source: Public / Well # / Water Haul" (Documented: mohave.gov application packet). So the

county accepts a hauled-water source on a home permit; confirm any storage or plumbing details with the Building Division (928-757-0903).

- Tank permit: Water tanks supported directly on grade do not need a building permit if 5,000 gal or less and height-to-diameter ratio 2:1 or less (Documented: Mohave County "Work Exempt from a Building Permit," IRC R105.2). The Norwesco 2,500 (91 in tall x 95 in wide) qualifies. Plumbing and electrical into the home are still part of the home permit.
- Septic: a home needs a county septic permit (ADEQ delegated) regardless of water source; keep wells 50+ ft from septic tanks and 100 ft from leach fields (Estimate from typical ADEQ setbacks; verify).
- Tank pad: Norwesco and dealers call for a level, smooth surface wider than the tank with no rocks - concrete slab or compacted sand/gravel (Claimed: manufacturer installation guidance; verify current Norwesco instructions). A full 2,500-gal tank weighs about 21,000 lb (Documented physics: 2,500 x 8.34).
- CC&R 3.6: water tanks must be ground-level; elevated water structures max 12 ft to top; must fit the community look and be safe (Documented: Turquoise Estates CC&Rs, 2nd recording). A 91 in (7.6 ft) tall tank on grade complies.
- CC&R 4.2.1: the rear 8 ft of every lot is a common access and utility easement that must stay free of fencing or other obstructions; no fence, wall or barrier there (Documented). It is not written as a no-build ban, but a tank or pump house there would be an "obstruction" - place the tank outside that strip and outside county setbacks (15 ft front, 5 ft side, 15 ft rear).

10. Sources

- Mt. Tipton Water Co.: tiptonwater.com; tariff PDF tiptonwater.com/_files/ugd/23fb31_88fee538c5174584884d171746de67b1.pdf
- City of Kingman water fees: cityofkingman.gov/government/departments/finance/utility-billing/water-fees
- Hassell Team, Water Rights in Arizona Desert Land: hassellteamaz.com/blog/water-rights-arizona-desert-land/
- McIntosh Potable Water: mcintoshpotablewater.com
- Oasis Pump: azequipmentrepair.com/water-hauling
- A.A.C. R18-4-214: law.cornell.edu/regulations/arizona/Ariz-Admin-Code-SS-R18-4-214
- ADWR well drilling and FAQ: azwater.gov/permitting-wells/well-drilling-arizona ; azwater.gov/permitting-wells/frequently-asked-questions
- arizonawelldata.com/zip/86441/
- A-1 Arthur's Well Service: a-1arthurswellservice.com
- Dunaway Law Group: dunawaylg.com/record-shared-well-agreements/
- Mohave County: mohave.gov/media/xqso3qrx/application-packet.pdf ; mohave.gov/departments/development-services/building-division/work-exempt-from-a-building-permit/
- Turquoise Estates CC&Rs 2nd Recording (Dropbox), Sec. 3.6, 4.2, 4.2.1