

MONTANA'S

# UNDERGROUND COMICS

SWET YOUR WHISTLE WITH GOOD, CLEAN WATER

FOR GROWN-UPS AND KIDS, TOO!

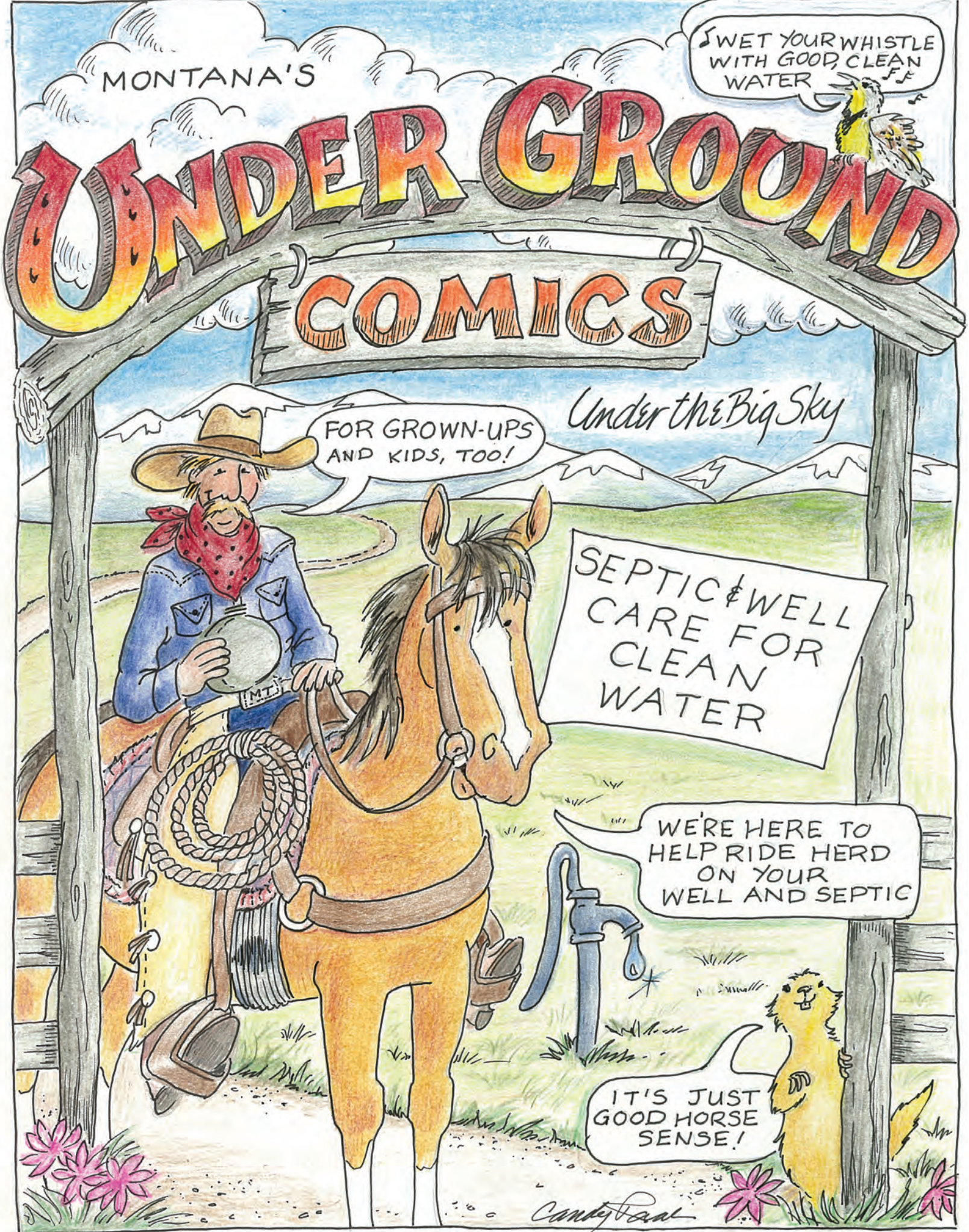
*Under the Big Sky*

SEPTIC & WELL CARE FOR CLEAN WATER

WE'RE HERE TO HELP RIDE HERD ON YOUR WELL AND SEPTIC

IT'S JUST GOOD HORSE SENSE!

*Candy Paul*

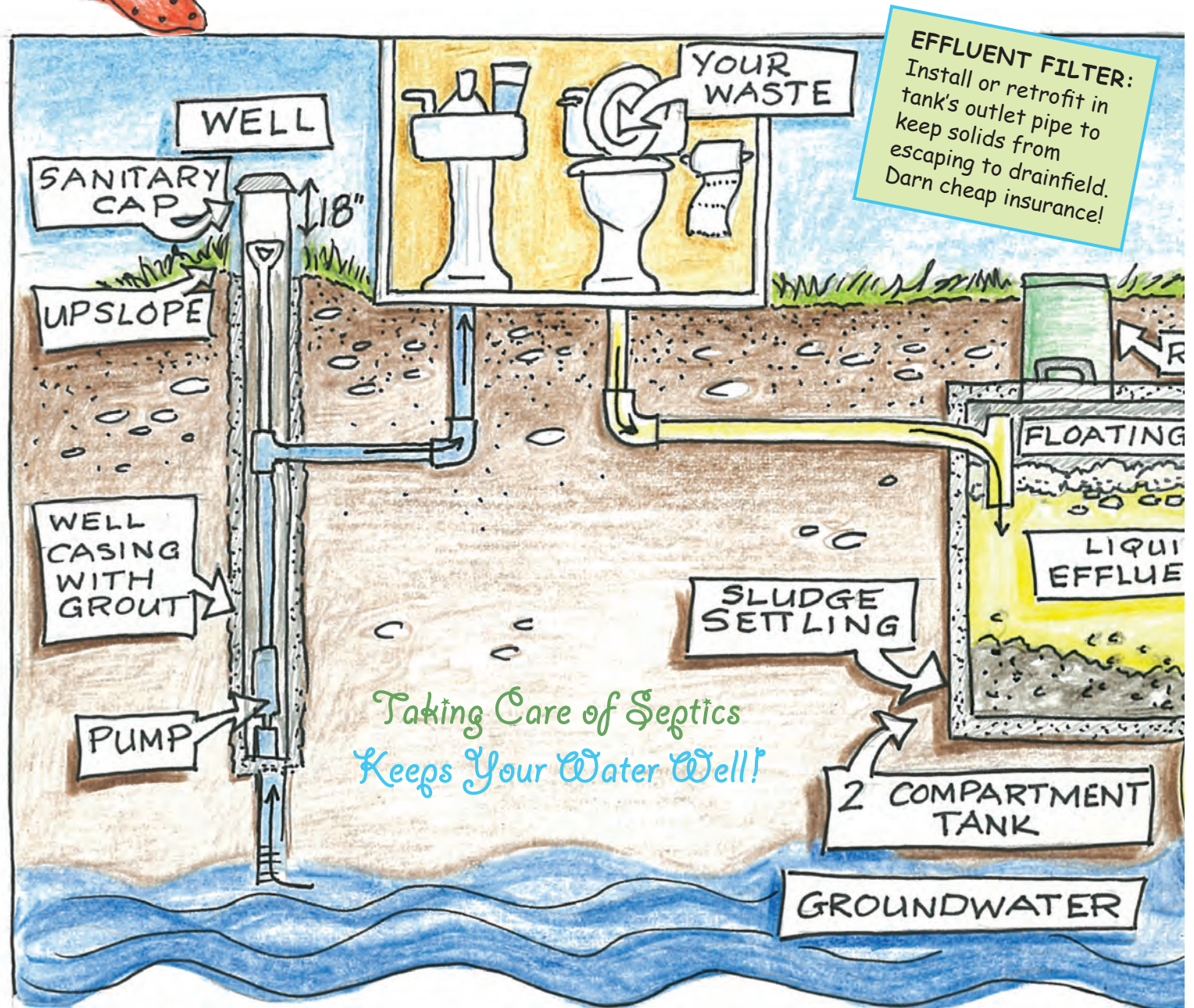




# SEPTICS ANATOMY:



HOWDY, PARDNER! IF YOU LIVE IN RURAL MONTANA YER PROB'LY THE PROUD OWNER/OPERATOR OF YOUR VERY OWN UNDERGROUND SEWAGE TREATMENT PLANT & WATER SUPPLY. IT'S YOUR SEPTIC SYSTEM & WELL!! BURIED OUT THERE IN THE BACKYARD.... SOMEWHERE.... AND, BY GOLLY, YOU ARE THE UTILITY COMPANY. SO TREAT YOUR SEPTIC RIGHT & YOUR WATER WELL, BECAUSE YER DRINKIN' IT!



**EFFLUENT FILTER:**  
Install or retrofit in tank's outlet pipe to keep solids from escaping to drainfield. Darn cheap insurance!

*Taking Care of Septics  
Keeps Your Water Well!*

After sludge settles down, liquid effluent (your wastewater) flows out to the drainfield and seeps through drainpipe holes into the soil "filter" where it's purified by microbial critters in soil pores. Percolating down to recharge groundwater, your treated wastewater feeds your well, your neighbors' wells—plus gardens, irrigation, and our lakes & streams! You want it to be good soil, and clean water.  
Bacteria in the tank work to break down the sludge layer, but eventually ... ALL TANKS NEED TO BE PUMPED! All tanks. All.

**DO YOU KNOW...**

- WHERE YOUR TANK IS?
- HOW BIG IT IS?
- WHEN IT WAS LAST PUMPED?
- WHERE YOUR DRAINFIELD IS?

*Once you find it, map it!*

**HEY—Community Systems & Townies!** Even if you're on a community system or live in town, these guidelines make smart sense too. It all goes somewhere, and our water's all connected!



# HOW THEY WORK & WHY THEY FAIL

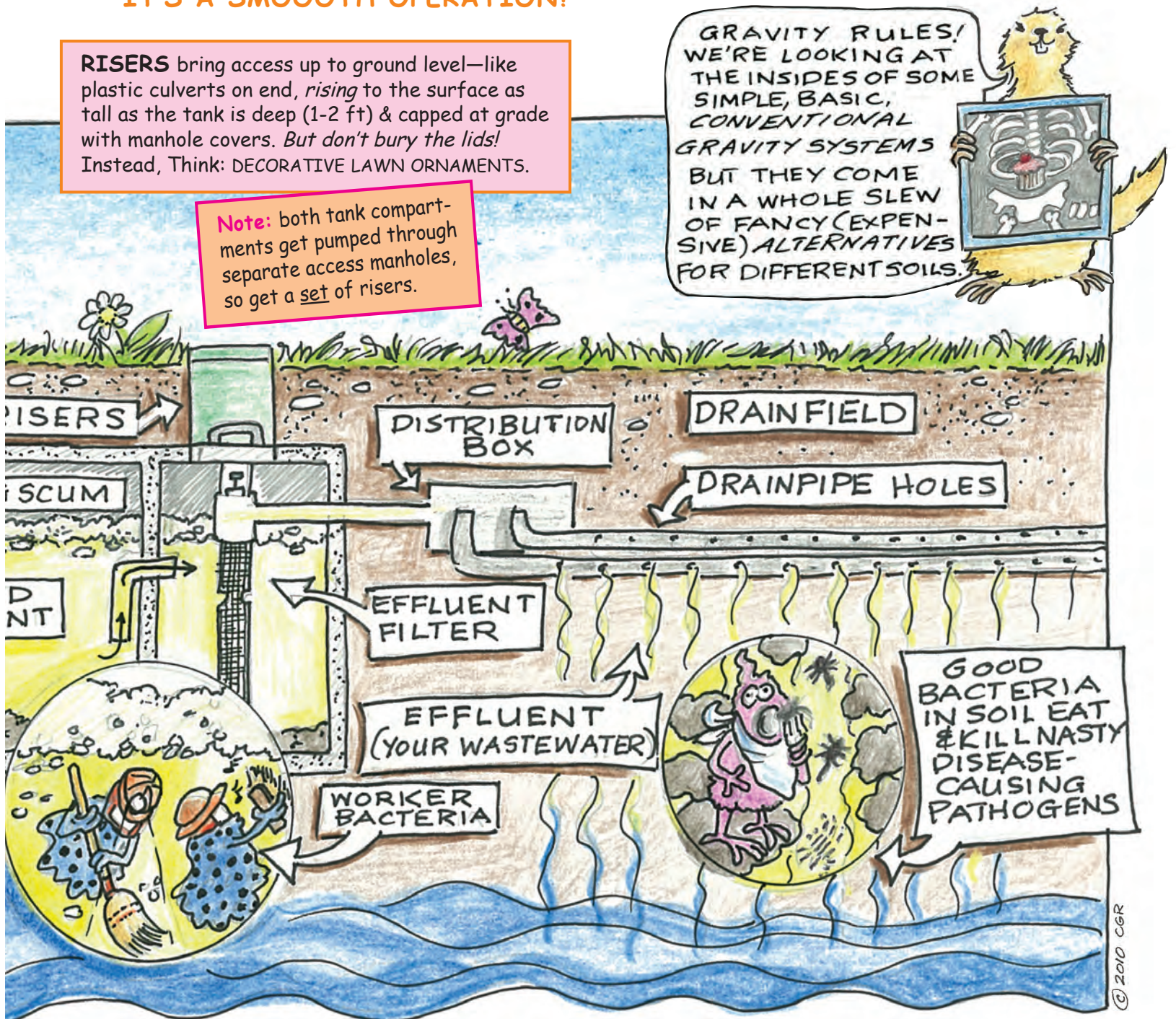
## When Things Are GOOD,

IT'S A SMOOTH OPERATION!

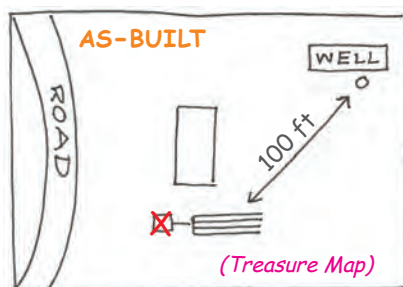
**RISERS** bring access up to ground level—like plastic culverts on end, *rising* to the surface as tall as the tank is deep (1-2 ft) & capped at grade with manhole covers. *But don't bury the lids!* Instead, Think: DECORATIVE LAWN ORNAMENTS.

**Note:** both tank compartments get pumped through separate access manholes, so get a set of risers.

GRAVITY RULES! WE'RE LOOKING AT THE INSIDES OF SOME SIMPLE, BASIC, CONVENTIONAL GRAVITY SYSTEMS BUT THEY COME IN A WHOLE SLEW OF FANCY (EXPENSIVE) ALTERNATIVES FOR DIFFERENT SOILS.



Most counties now keep records of new systems with an AS-BUILT, a drawing of the house footprint & property lines in relation to the septic and well—as it was built! Ask the county for yours, or draw one yourself!



*What's buried out in your backyard?*

Doesn't matter where you live, in what kind of house, how big it is—or if your granddaddy homesteaded the place or you're a shiny new city slicker. What'll make YOUR septic the GOOD, the BAD, or the Downright UGLY is all about:

- How you take care of it, &
- How you live with it.

Follow us in the Pore of Discovery to explore how to protect your well & septic—& how to discover signs of trouble!





# The GOOD...

THE ONLY BUTT IN HERE BETTER BE YOUR OWN! CIGARETTE BUTTS ARE A PERFECT FIT TO PLUG UP A DRAINPIPE HOLE

SPREAD OUT YOUR BIG WATER USERS - LAUNDRY, SHOWER & BATH, DISHWASHER - DON'T SHOCK & AWE THE SEPTIC!

ONLY FLUSH TP & WHAT GOES THROUGH YOU FIRST! THAT MEANS NOTHING ELSE IN THE UNIVERSE GOES IN THERE - YOUR TOILET'S NOT A TRASH CAN. (IT'S A POT, NOT A CAN.)

LOW-FLOW FIXTURES

SAVE WATER! SAVE SEPTICS! SCRAPE FOOD WASTE & GREASE INTO TRASH OR COMPOST. NEWSPAPER WIPES GREASE OFF POTS & PANS.

SANITARY CAP

TRASH

COMPOST

WELLHEAD UPSLOPE & AT LEAST 18" ABOVE GROUND

50' SETBACK FROM WELL TO TANK, 100' TO D

FENCING PROTECTS WELLHEAD FROM DAMAGE & ANIMALS. UPSLOPE KEEPS RUNOFF FROM GETTING IN THE WELL CASING & CONTAMINATING YOUR WATER!

INSPECT REGULARLY. PUMP WHEN NEEDED. THAT'S THE CODE OF THE WEST.

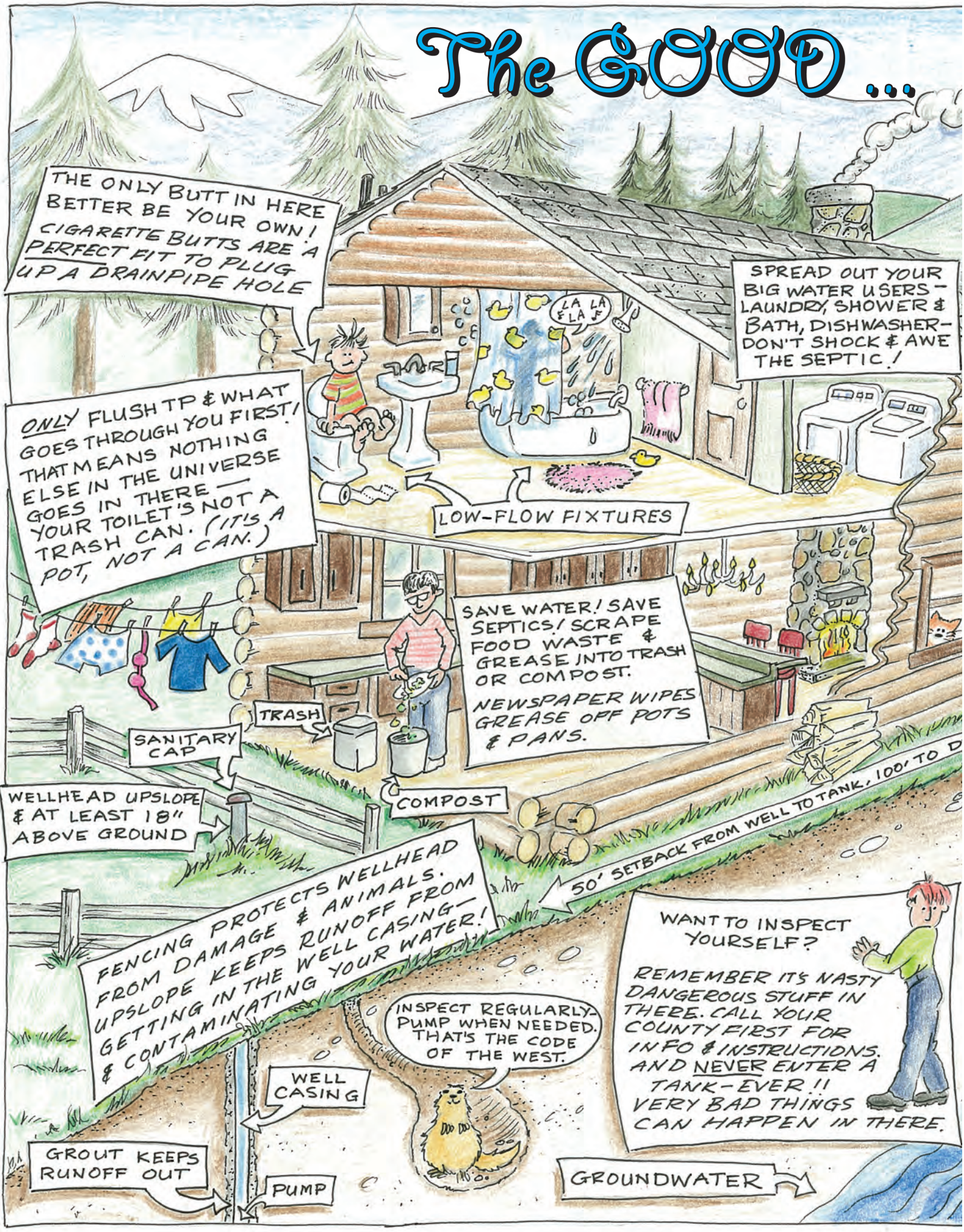
WANT TO INSPECT YOURSELF? REMEMBER IT'S NASTY DANGEROUS STUFF IN THERE. CALL YOUR COUNTY FIRST FOR INFO & INSTRUCTIONS. AND NEVER ENTER A TANK - EVER!! VERY BAD THINGS CAN HAPPEN IN THERE.

WELL CASING

GROUT KEEPS RUNOFF OUT

PUMP

GROUNDWATER





# Here in the Heart of the West!

BECAUSE RIVERS RUN THROUGH IT!  
 SETBACKS & WELL-MAINTAINED SEPTICS KEEP OUR RIVERS, LAKES & STREAMS CLEAN. GROUNDWATER & SURFACE WATERS ARE ALL CONNECTED - SO GET YOUR SEPTIC INSPECTED!

I LOVE MONTANA'S WORLD CLASS FISHING!

O.K. RANCH

100' SETBACK DRAINFIELD TO SURFACE WATER

MOVING MY BIRDBATH SURE BEATS DIGGING

SHALLOW-ROOTED PLANTS OVER DRAINFIELD KEEP ROOTS FROM CLOGGING PIPES - TRY NATIVE GRASSES!

DECORATIVE LAWN ORNAMENT CAMOUFLAGE - BENCH, BIRDBATH

HOW YOU USE WATER & HOW YOU MAINTAIN YOUR SYSTEM ARE THE 2 MOST CRITICAL THINGS YOU CAN DO TO KEEP YOUR SEPTIC WORKING - & OUR WATER CLEAN. THAT'S HOW THE WEST WAS WON.

RAINFIELD

EFFLUENT FILTER

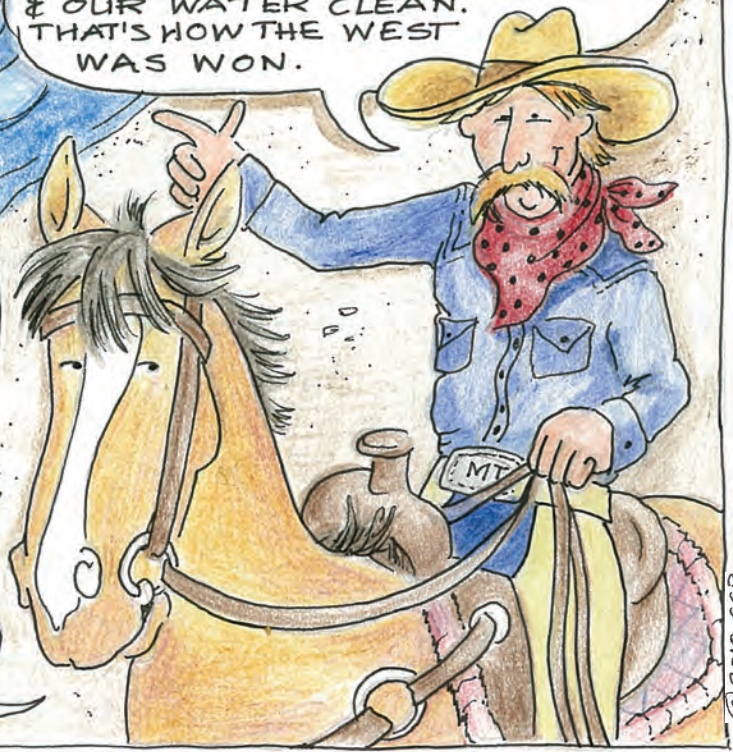
DRAINFIELD KEPT FREE FROM SOIL COMPACTION OR COVERING

RISERS

Inspect Regularly & Pump as Needed

GO NATIVE! NATIVE PLANTS ADAPTED TO CLIMATE NEED LITTLE ADDED WATER OR FERTILIZER. DRAINFIELD'S ALREADY WORKING HARD TO GET RID OF YOUR OWN WATER & "FERTILIZER!" AND I SURE KNOW HOW TO FERTILIZE!

LET'S RIDE OUT & SEE WHAT THE N-A-A-A-Y-BORS ARE DOING.





# THE BAD ...

LIKE IT'S BEEN RODE HARD  
& PUT AWAY WET

USING WATER ALL AT ONCE REALLY STRESSES THE SYSTEM. *SPREAD IT OUT!!*

WATER RUNNING RUNNING RUNNING

LEAKY FAUCET

GREASY PAN

DISHWASHER

SMELLS LIKE TROUBLE

GARBAGE DISPOSAL: SOLIDS FILL TANK FASTER SO THROW IT OUT!

FLUSHING GUNK OR MEDS

WASHING TOO MANY LOADS

BATHING

SHAVING (WATER LEFT RUNNING)

NO RISERS

FERTILIZED & WATERED

WAY TOO MUCH WATER RUNNING IN HERE!!

MIXING - NOT SETTLING!

CONTAMINATED RUNOFF DOWN WELL CASING

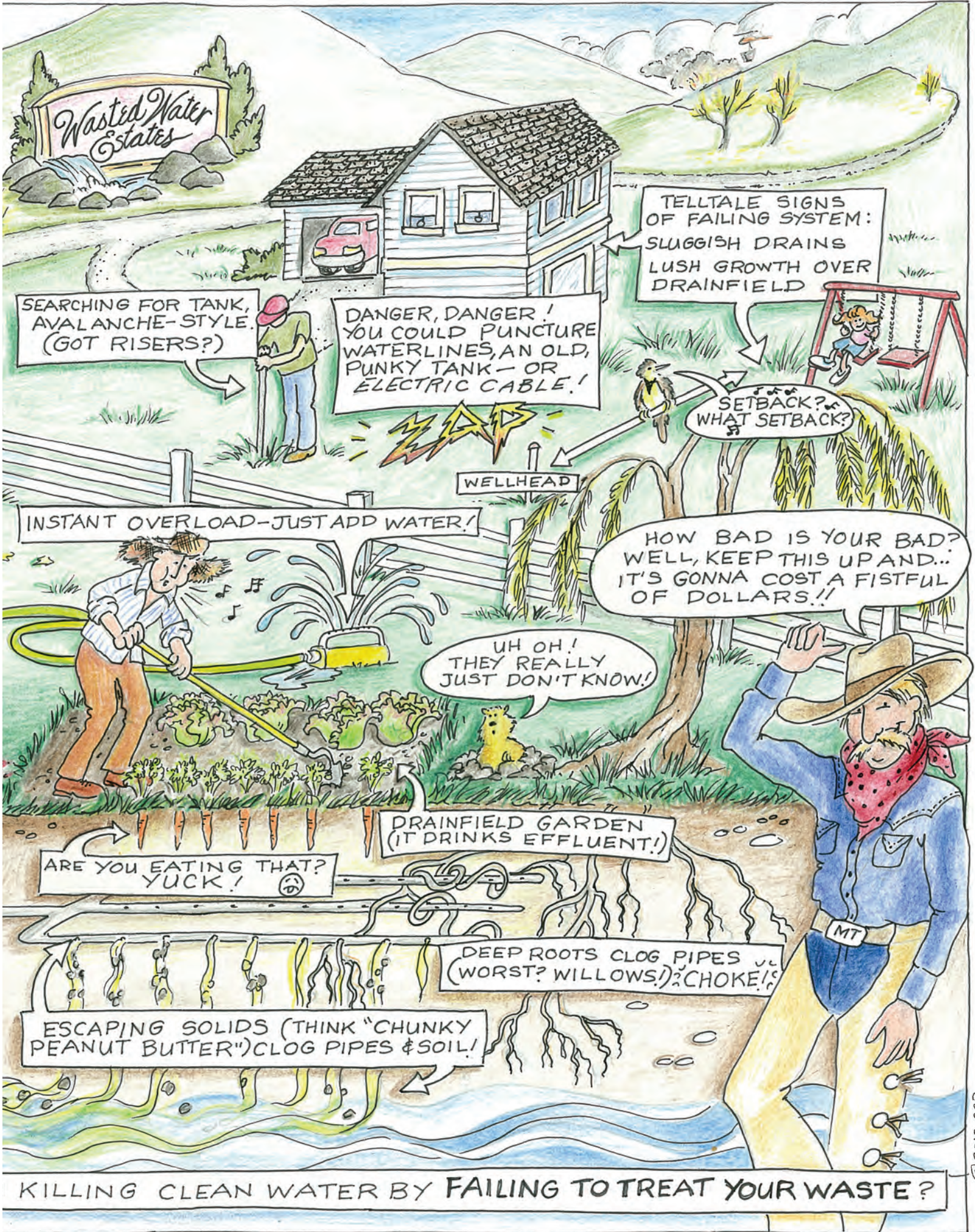
NO EFFLUENT FILTER

GROUNDWATER

EFFLUENT ONLY PARTLY CLEANSSED

QUIETLY OVERLOOKED, TOO OFTEN IGNORED & NEGLECTED. ARE YOU





Wasted Water Estates

TELLTALE SIGNS OF FAILING SYSTEM:  
SLUGGISH DRAINS  
LUSH GROWTH OVER DRAINFIELD

SEARCHING FOR TANK, AVALANCHE-STYLE. (GOT RISERS?)

DANGER, DANGER! YOU COULD PUNCTURE WATERLINES, AN OLD, PUNKY TANK - OR ELECTRIC CABLE!

SETBACK? WHAT SETBACK?

WELLHEAD

INSTANT OVERLOAD - JUST ADD WATER!

HOW BAD IS YOUR BAD? WELL, KEEP THIS UP AND... IT'S GONNA COST A FISTFUL OF DOLLARS!!

UH OH! THEY REALLY JUST DON'T KNOW!

DRAINFIELD GARDEN (IT DRINKS EFFLUENT!)

ARE YOU EATING THAT? YUCK!

DEEP ROOTS CLOG PIPES (WORST? WILLOWS!) CHOKES!

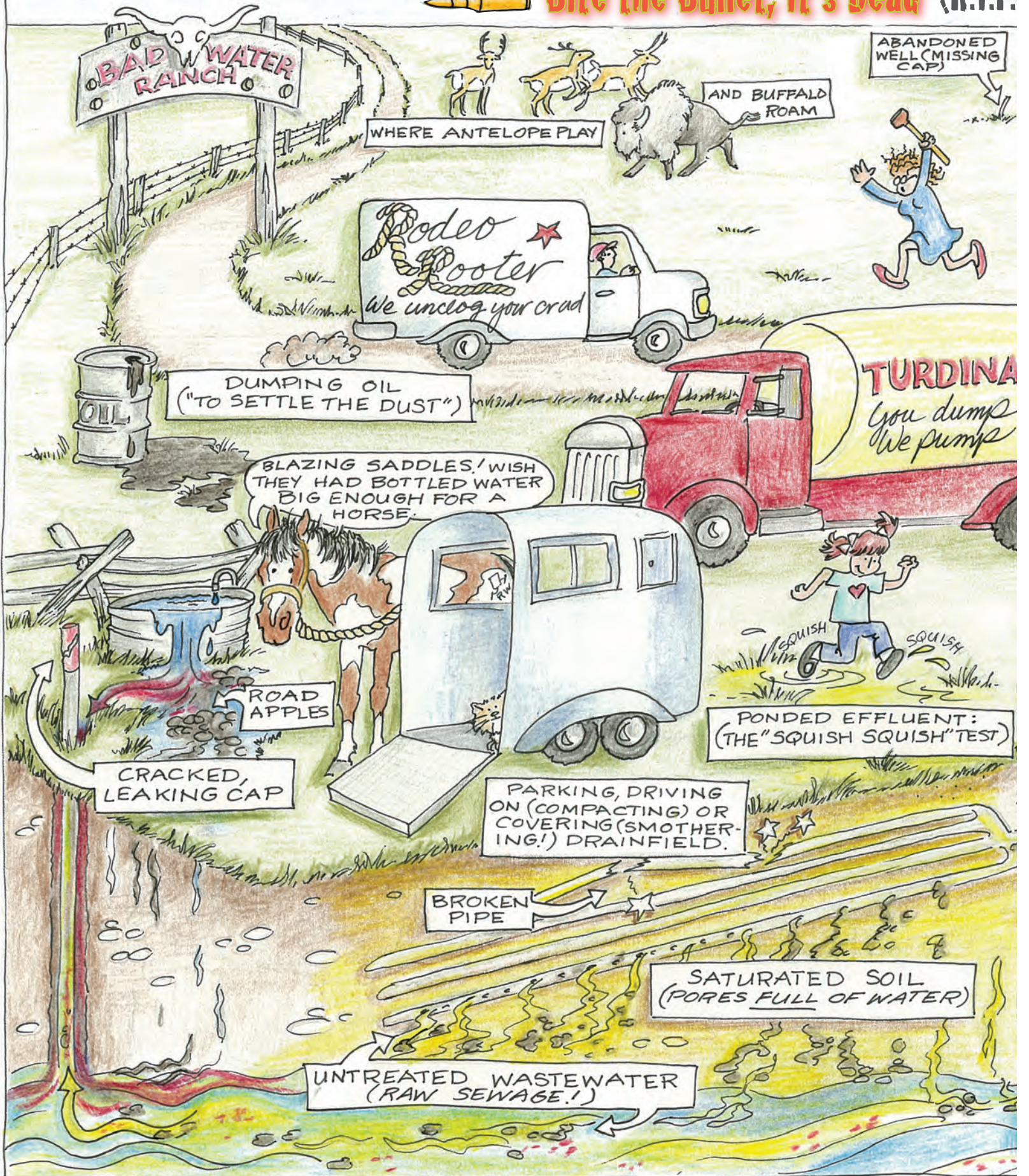
ESCAPING SOLIDS (THINK "CHUNKY PEANUT BUTTER") CLOG PIPES & SOIL!

KILLING CLEAN WATER BY FAILING TO TREAT YOUR WASTE?



# ... and THE DOWNRIGHT UGLY!!

 **Bite the Bullet, It's Dead (R.I.P.)**



**BAD WATER RANCH**

WHERE ANTELOPE PLAY

AND BUFFALO ROAM

ABANDONED WELL (MISSING CAP)

DUMPING OIL ("TO SETTLE THE DUST")

BLAZING SADDLES, WISH THEY HAD BOTTLED WATER BIG ENOUGH FOR A HORSE.

**TURDINA**  
You dump  
We pump

ROAD APPLES

CRACKED, LEAKING CAP

PONDED EFFLUENT: (THE "SQUISH SQUISH" TEST)

PARKING, DRIVING ON (COMPACTING) OR COVERING (SMOTHERING!) DRAINFIELD.

BROKEN PIPE

SATURATED SOIL (PORES FULL OF WATER)

UNTREATED WASTEWATER (RAW SEWAGE!)

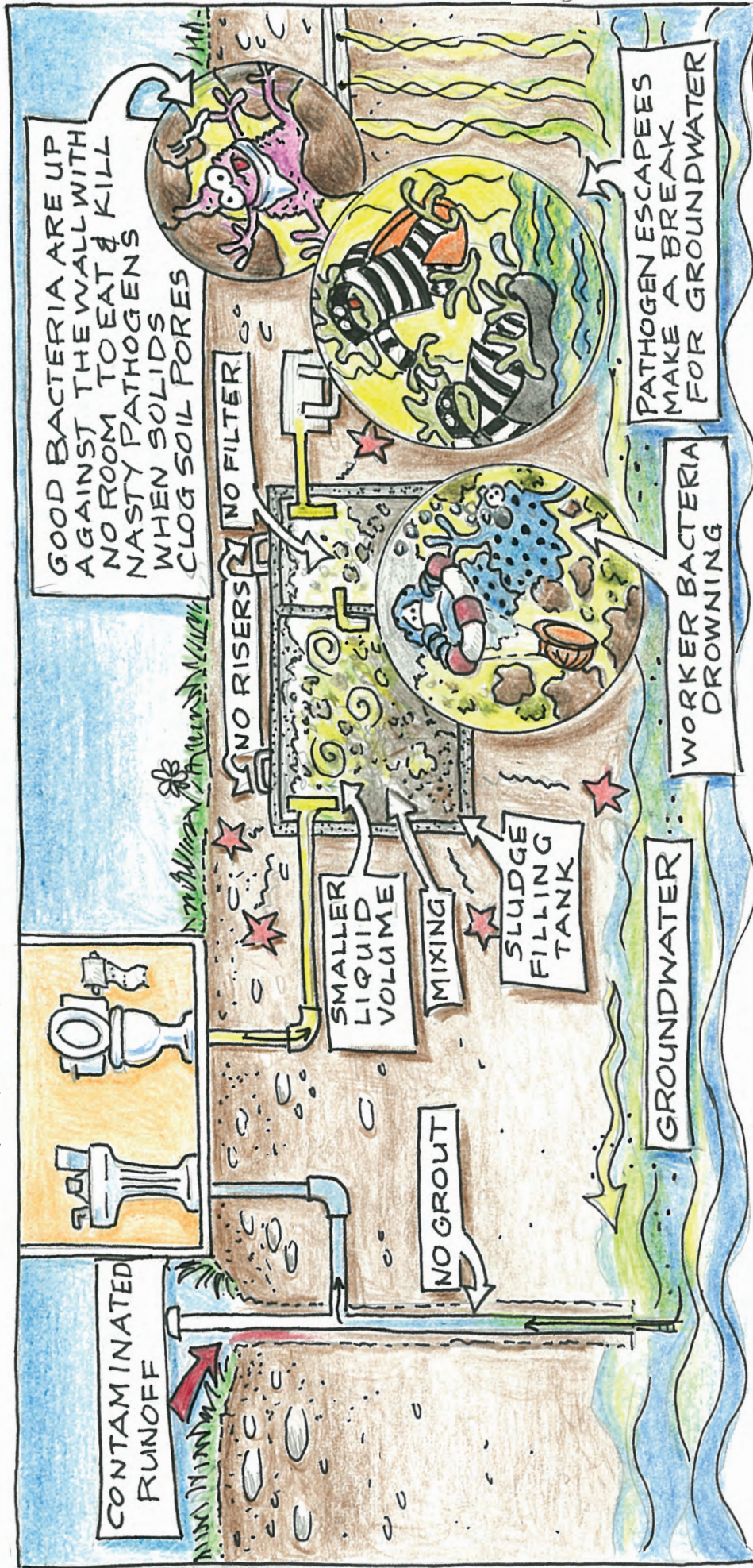






# When Good Systems Go BAD ... A FAILURE WAITING TO HAPPEN

A tank full of solids leaves less room for liquid so it shortens settling time, flowing out to drainfield with solids mixed in. Reduced wastewater-treatment capacity means your effluent's not always completely clean before reaching groundwater—and your well!



GOOD BACTERIA ARE UP AGAINST THE WALL WITH NO ROOM TO EAT & KILL NASTY PATHOGENS WHEN SOLIDS CLOG SOIL PORES

PATHOGEN ESCAPEES MAKE A BREAK FOR GROUNDWATER

WORKER BACTERIA DROWNING

## SEND IN THE RESERVES!

THERE'S NO FIXING A FAILED DRAINFIELD. With soil pores compacted or clogged with solids, no amount of air or water pumped in will flush 'em out or plump 'em up again. You'll have to put in a new drainfield, in a different area designated and protected for a replacement or "reserve." Find yours! Without suitable soils in reserve, folks might have to pump effluent off-site—or even buy more property!

YOU GOTTA RESPECT YOUR SEPTIC, COWBOY- CAN'T JUST RIDE THAT THING 'TIL IT DIES.



ALL YOU URBAN COWBOYS USING LOTS OF FANCY WATER JUST DOESN'T SIT WELL OUT HERE IN THE ARID WEST. EVERYBODY'S GOTTA SHARE!



WHOA, NELLIE!



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# ... Or Turn Downright UGLY!

YUP, IT'S DEAD, ALRIGHT

Tank plugged full of solids overflows to clog pipes, soil pores—& plumbing! Clogged, sluggish, & backed-up, this is your sewage coming back to haunt you. You will be visited by seepage, leakage, & FAILURE—contaminating groundwater, well water—and your drinking water!



Wells & septic systems may be too close in some of our older communities, where a well's 100' setback Safety Circle could overlap with neighboring septs.



Are YOU drinking from nearby septic failures? Gives a whole new meaning to your Neighborhood Circle.

You bet it is. Septic additives could harm—and pretty much don't help. Look at it this way: Caustic chemicals or biological agents designed to **BREAK DOWN SOLIDS** can **BREAK SOLIDS DOWN** to float out the tank & clog the drainfield. Be careful what you wish for!

**ADDITIVES:** TO ADD, OR NOT TO ADD, IS THAT THE QUESTION?



# Ride Herd on Your Septic!

**LOCATE** (find it!)

**INSPECT** regularly

**PUMP** as needed

**& PROTECT!**

- ♦ Retrofit Risers & Effluent Filters
- ♦ Think Compost & Trash vs. Garbage Disposal
- ♦ Use Least Amount of Toxic Chemicals & Cleaners (USE RECOMMENDED DOSE, HANDLE & STORE CAREFULLY)
- ♦ Landscape Drainfield with Shallow-Rooted Plants, Not Deep
- ♦ Keep Sprinklers, Runoff, & Contaminants Away from Drainfield
- ♦ Protect Well—3 best ways: MONITOR WATER QUALITY (NITRATES, BACTERIA), SEPTIC MAINTENANCE, & CURB RUNOFF POLLUTION
- ♦ Watch Water Use & "Shock" Loads
- ♦ Keep Good Records—SEPTIC/WELL LOG (FIND IT, START IT, KEEP IT)
- ♦ Check Graywater Potential for Your County!
- ♦ And Remember, No Matter How Fancy or Expensive—ALL TANKS NEED TO BE PUMPED!

**WANTED: SEPTIC KILLERS!**

**ALIAS**

- TANK NEEDS PUMPING
- HIGH WATER USE
- FLUSHING TRASH
- LACK OF MAINTENANCE
- TOO MUCH GARBAGE DISPOSAL
- OVERLOADED WITH SOLIDS
- KITCHEN GREASE & TOXIC CHEMICALS (+ water-softener salts)
- DRIVING OVER DRAINFIELD
- TREE ROOTS: POOR DRAINAGE
- POOR INSTALLATION, DESIGN, SITING (unfit soils, steep slopes, small lot)
- DON'T KNOW WHERE SEPTIC IS
- DON'T KNOW THERE IS A SEPTIC!

**ARMED & EXTREMELY DANGEROUS**

**REWARD: CLEAN WATER!**  
+ PROTECTED PROPERTY/INVESTMENT/HEALTH

**Contacts**

**& Credits:**

BE SURE TO CHECK WITH YOUR LOCAL HEALTH DEPT. FOR MORE SPECIFICS IN YOUR AREA.

GIDDYUP, ELLY-C'MON PRAIRIE DOG PETE, & BRING YOUR GAL. WE'RE BACK IN THE SADDLE AGAIN!

LET'S HIT THE TRAIL TOO, NELLIE. OUR WORK HERE IS DONE!

YEEHAW!! RIDE 'EM COWBOY!

THANKS FOR ALL YOUR HELP BIG SKY SLIM. NOW, GIT ALONG LITTLE DOGIES, Y'HEAR?

HAPPY TRAILS TO YOU!



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## The Wild Bunch

STARRING:  
BIG SKY SLIM &  
ELLY THE HORSE  
PETE THE PRAIRIE DOG  
& HIS LADY, NELLIE

**Jana M. Suchy**  
Wrangler/Writer/Producer  
WAY OUT WEST CREATIVE

**Candy Garrison Raab**  
Ranch Hand &  
Brilliant Illustrator  
Artwork © 2011

**Joe Meek**  
Crew Boss

DEQ SOURCE WATER PROTECTION