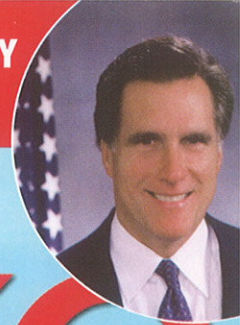


SUMMEREXPLORER06

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Salt Lake

magazine of the mountainwest



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driving off the **fat** of the land

Imagine rolling up to your local restaurant for burgers, shakes, and a fill-up. Not gas, but a fuel made from the very grease used to crisp those fries—processed and pumped straight into the tank. Pouring altered veggie oil into a car may seem as far-fetched as the trash powered DeLorian in *Back to the Future*, but it's no Hollywood trick. Biodiesel is catching on. And your neighbor might be brewing it in the garage right now.

More than a hundred Utahns are part of the alt fuel movement, and the government is in on the action too, purchasing biodiesel commercially; Hill Air Force Base and Salt Lake International Airport already use this environmentally friendly fuel and the UTA is considering it. And just like the restaurant of the future, Squatters brewpub uses its fryer grease, converted to biodiesel, to run a delivery truck to its airport location. It's clean burning, renewable, and green, substantially reducing unburned hydrocarbons, carbon monoxide, and particulate matter, all which contribute to smog and ozone depletion. Even better, it helps reduce our dependence on foreign oil.

But, if homebrewing biodiesel sounds like the answer to all our environmental and geo-political woes, think again. Some homebrewers bury glycerin in their back yards, haul liquid waste without permits, and process chemicals in garages without proper zoning, says Mary Pat Buckman, a hydrologist at the Salt Lake Valley Health Department. Hardly ways to save the planet.

Plus, it's dangerous as hell. "Just look at my finger. This is what happens when a flake of lye gets under your nail," says Kevin Newman holding up his index finger, a raw divot of flesh is exposed where his fingernail used to be. "That was two weeks ago and it's still eating away."

Running three diesel trucks for his drywall business in Magna, Newman easily dropped a few hundred dollars per week on fuel. Looking for a cheaper alternative, he

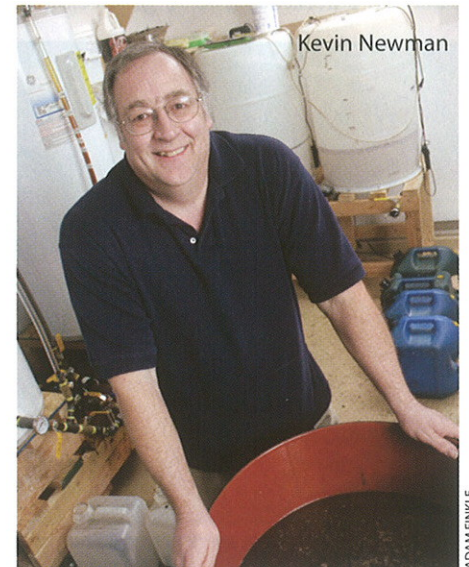
checked out biodiesel. Last November he decided to take the plunge and brew his own. Unlike the stereotype of homebrewers, which conjure up images of "grow your own" and save-the-world tree-huggers living off the grid, Newman is a 52-year-old clean-shaven father of five, and his primary reason for brew brewing was simple: to save money.

Fresh snow blankets the parking lot of a local brewpub on a cold February morning. Inside, the kitchen staff scurries about, prepping for the lunch crowd. Newman arrives in his diesel pick-up, hops out, and grabs his gloves. "Let's see what we've got here," he says, scraping past dumpsters heaped with last night's garbage. "It's about half full since I checked last week,

"If I make one mistake I can burn my house down. It's messy, greasy, and it stinks." —Kevin Newman

about 25 gallons." Amid the smell of rotting food, Newman works quickly. He wedges a dolly underneath a blue barrel filled with used cooking oil, carefully attaches it to a crane, and hoists all 250 pounds of grease into the bed of his truck. While he works he's muttering something about a biodiesel processor fire this past week in Orem. "They don't know what caused it but it burned the building down."

He's done in a flash and motors around the corner to another restaurant. Stomping on the pedal he asks, "Do you feel that? It's



Kevin Newman

ADAM FINKLE

sluggish." A downside of biodiesel. When the weather gets cold the fuel gels, just like that leftover jar of bacon fat your mom left in the fridge. It can clog fuel filters and require upgrading fuel lines in older cars. It also produces a slight increase in NOx (nitrogen oxide). But these negatives don't deter those who swear by the stuff.

"Ah, this is good grease," Newman declares at the next restaurant, tipping another barrel. "It's still liquid and its 20 degrees outside. If this was bad grease it would be a solid brick." It looks like a vat of turkey

gravy. He has enough for about 50 gallons of biodiesel but is off to a family restaurant on the west side for more. In the biodiesel world, *take-out* takes on a whole new meaning.

Newman began homebrewing with the help of Graydon Blair, founder of Utah Biodiesel Supply Company. A computer analyst for Intermountain Health Care, Blair spends every free moment on biodiesel—educating, brewing, building processors, and working with local officials on regulations. Establishing utahbiodieselsupply.com last summer was a hobby that morphed into an obsession. The Web site attracts the curious from Australia to South Africa, with nearly half a million hits monthly.

With Blair's help, Newman's three-car garage is now devoted to biodiesel. Like a proud papa Newman beams as he shows off the double processor that he and Graydon built over a weekend—two 50-gallon electric

water heaters, connected with tubes, fittings, and a pump. There are various plastic drums, a large open sack of lye, an empty container of methanol, and a box of rubber gloves. On the floor sit eight jugs of clear amber fluid—fresh homebrewed biodiesel. The garage is bright, clean, and smells like a burger joint.

The first step in making biodiesel is to filter out the junk; gallons of fryer oil are poured through a screen to catch tortilla chips, chicken bones, and stray onion rings. Then the oil goes through a series of stages including: heating, adding methanol and lye, separating, washing, and drying. Like a mad scientist monitoring his concoctions, Newman takes meticulous notes on the entire process, formerly in a spiral notebook, now on a spreadsheet; titration levels, yields, waste, and cost are recorded. It's tedious for sure, but Newman knows that this information is useful; these numbers are fed to his accountant who calculates the various tax breaks the government now offers for alternative fuel use.

Although this whole process will save Newman money in the long run, costing less than a buck per gallon, so far he's shelled out \$3,500 for equipment and supplies. And he's got other grievances. High on the list: the time commitment. He can spend up to 10 hours each week gathering oil, buying materials, and brewing. "If I make one mistake I can burn my house down," he says. "It's messy, greasy, and it stinks."

Blair adds, "A few months ago one of those big honking plastic tanks sprung a leak and 60 gallons of waste veggie oil coated [Newman's] whole garage floor."

Another beef—bureaucracy. Newman was one of the first homebrewers to get nabbed by the Salt Lake Valley Health Department. Trying to be "legal" about his waste-oil pickups, he placed his own barrels, labeled with his phone number, next to the oil collector's bins behind a local restaurant. The next thing he knew, the oil collection company tipped off the Health Department, which in turn tracked him down and charged him \$125 for a permit to haul liquid waste.

Renegade is the No. 1 collector of grease along the Wasatch Front. It picks up more than 1.5 million gallons of used cooking oil annually. For Renegade, it's a commodity traded on the open market, used to fatten

hogs for the bacon we eat. But as Newman puts it, "I don't want to recycle that fat back into my gut, I'd rather pour it into my tank."

According to Blair, "Sucking grease straight from a Renegade barrel is technically against the law," not to mention a drain on profits and a business nuisance. Some homebrewers have been careless, bungling their operations and accidentally overturning barrels, leaving Renegade to clean up gallons of grease from parking lots.

Dennis Brunetti, vice president of sales and services for Renegade, argues that homebrewers need to play by the same rules as the big guys. "If the professionals have to be compliant then everyone else should be too," he says. Stressing that he personally believes in alternative fuel, Brunetti just wants to see a level playing field. "People are taking the oil without permits and making it in their homes where it's not zoned. There is a level of liability there."

Accidents do happen and gallons of grease flowing into garage drains can contaminate water treatment systems. And spills, leaking into storm drains, are a violation of the Clean Water Act, eliciting hefty fines. According to Buckman, the Health Department's hydrologist, one homebrewer stored methanol in an unlabeled tank, spigot attached, right in the front yard. Methanol is clear like water, only highly toxic. Any unsuspecting kid playing nearby could have easily stopped to take a thirst-quenching swig. Only recently has the Health Department started hunting down the underground homebrewers, trying to dig up names from any source they can.

The biodiesel scene is changing and Blair foresees a time when increased regulations combined with an influx of biodiesel manufacturers will make homebrewing less attractive. "I'd love to see biodiesel at every pump where you can buy diesel fuel. When that happens and it economically makes sense, heck I'd quit," he says.

Newman agrees. "If I had to do it all over again, I wouldn't touch it with a 10-foot pole," he says. "But I've made an investment and I want to get my money's worth. If somebody bought me out, I'd leave it in a heartbeat." For now he drives off, permits tucked neatly behind the visor of his truck, in search of more grease. **SL**



PHOTOS BY ADAM FINKLE

Graydon Blair, founder of Utah Biodiesel Supply Company (above) and Mary Pat Buckman, a hydrologist at the Salt Lake Valley Health Department (below).