

The Landfill

Technology is always the answer. Hi. My name is Yardsal (“Yardy”) Haines, and that’s what I used to tell the school kids bussed out to the landfill for a day in the country. Most kids nowadays have never been to the country and thought they were going to see a cow pasture when we took them up to Lookout Point. Stretched out before them was an inland sea of plastic bags crisscrossed by bulldozers leveling out the bumps.

“Hey, Mr. Yardy!” some kid always asked. “Why’s it smell so bad? Is it the cows?”

See what I mean? Those kids couldn’t tell a cow from a bulldozer. Anyway, the question gave me a chance to talk about decay of organic matter and give them some terms to describe it besides the ones they already knew. Teachers really appreciated that.

“If it smells like shit, it probably is shit,” my friend Bill Bob Leahy, chief of security always added.

Bill Bob is a short man with a beer belly so big he has to lean backwards to keep from toppling over. The kids loved him because he spoke their language. Teachers were another story.

For twenty-seven years, I’ve been chief engineer at Settlers Landfill. As a waste management professional, I don’t use the terms “dump” or “garbage” or “trash.” For us in the industry, waste management is a technological challenge, not a subject for sick jokes. We accept over 2 million tons of household and industrial waste every year and spread it out across our 600 acre campus to be layered with soil and blended into the environment. Thanks to reclamation science, we grade and seed the outer edges much as strip miners grade and seed the outer edges of their pits, so passersby see only rolling green hills from the road.

Inside, however, we had to deal with mounds of plastic bags exploding and out gassing as their contents ripened in the summer sun. Over the years our sales force was so successful that

Corporate in Chicago projected the landfill would reach its capacity by 2020. Our neighbors wouldn't sell us more land, and the regulators wouldn't let us use it for waste management if they did. Strapped for space, we could not keep layering the waste with dirt to keep the flies and odor down. We had to find a high tech solution.

Although often criticized in the media, our industry is very sensitive to the needs of our neighbors. We have to be: my wife Cindy and I and Bill Bob and his wife Cheryl live in Settlers Grove, a planned community for employees just outside the landfill. So we were all relieved when Corporate announced that it had developed a proprietary solvent that not only made the waste decompose in less than the half life of a plastic bag but would also shrink the compost to less than one third its original size. We learned later that it did this by dehydrating and solidifying the waste into a hardness that could withstand a nuclear blast.

Corporate had thought of everything except the exponential increase in methane gas caused by the enhanced decomposition process. Coupled with a temperature inversion, complaints about bad odors reached a crescendo that not even our PR firm and PAC could silence. School trips were cancelled; grilling out was impossible. I remember wearing an oxygen mask when I cut our grass.

Corporate, however, found another technological solution: a gigantic plastic dome that would cover the landfill and capture the gas. Through an intricate piping system, methane would be routed to our neighbors to heat their homes. The dome was designed by the same NASA engineers who were designing domes for the first colonists on Mars. It made the landfill look like a gigantic terrarium.

Offering gas at below market rates, we converted criticism into praise and gained many advocates. We even designed clear places in the plastic at Lookout Point so the kids could look

in and watch the enhanced decomposition. It was like the surface of the moon must have been before it solidified, pock marked by meteorites plunging in from outer space. Only in the choice of a piping and concrete contractor did we go astray.

Butch Siegel is the best example I have ever seen why accepting the lowest bid can be a mistake. As the weather changed, leaks developed around the pipes where they passed through the dome due to the different rates of expansion for plastic and metal. Neighbor complaints rebounded reaching as high as the governor's office, and Cindy and I had to cancel our Fourth of July barbecue. I called Siegel to my office in the concrete block administrative building that had been built when the site was used as an ammunition testing ground in the 1940s. He was as confident as ever.

"The pipes are leaking," I said.

"No problem," he reassured me.

"How're you going to seal them?"

"Easy," Butch said and winked, holding up a Zippo® lighter engraved "Danang 1969" and a large tube of epoxy cement

That was the last time I saw Butch Siegel. Bill Bob watched him climb up the dome and light the Zippo by one of the methane pipes. Leahy made it back to our administrative building just before Butch found his first leak.

To my amazement, even our closest neighbors did not hear the explosion. When Bill Bob and I went out to survey the damage, the dome was intact, having deflected the blast downwards into the landfill. Only the piping was gone, landing as we learned later in backyards and on Interstates as far as 20 miles away. After putting in a missing person report on Butch, we were back in full operation within an hour.

Corporate in Chicago called to ask whether there had been any damage to the waste itself. Obviously they were thinking of restarting methane gas production as soon as possible. I hadn't thought of that. So we let the dome cool for a day, and then Bill Bob and I clambered up with flashlights to peer through the pipe holes. It was like looking down into the earth through an upside down periscope.

Not a plastic bag remained. The waste, solidified by the solvent, had been driven deep into the earth like a gigantic bullet, leaving the appearance of a crater on the moon. Now we had space for hundreds of millions more metric tons of waste, enough to serve the prospective needs not only of the city but the surrounding area for decades. We scrambled down to call Chicago.

"Watch out, Yardy!" Bill Bob cried, grabbing my arm and pulling me back just as the concrete base at my feet collapsed, leaving a gap between the dome and the crater below.

"Looks like Butch skimped on the concrete, too," I said.

The explosion had cracked the base all around the dome. Corporate wasn't happy, but who needed a dome now that fifty years accumulation of methane was gone? The neighbors could go back to getting their gas from the utility company like everybody else.

I designed a wire fence on metal stakes to keep workers from falling in, but after a month the ground gave way beneath that, too. Sections of the fence drooped and dangled over the edge until the last stakes gave way and everything dropped into the crater. We had to stop the school tours for good.

We established a protocol that anyone approaching the edge had to wear a safety harness. Every time I got roped up to inspect the crater, I was amazed at how deep it was. Gray, cloudy, with little channels of fire swirling in its depths, it was like looking into the remains of a city hit by a nuclear bomb or an opening into hell.

One afternoon the dome started to tilt to one side, like a lid too small for a pot.

“What’ll we do if it falls in?” Bill Bob wondered.

“Beats hell out of me,” I replied. “Let’s hope corporate has the answer.”

Corporate didn’t care. Aside from a photo of the tilting dome that went viral, nobody else cared, either. The day the dome finally slid down into the crater, Bill Bob and I were the only ones who bothered to get roped up to see it. It was lying on the bottom at about a 30° angle, exaggerating the flames beneath it like an enormous magnifying glass.

“Is that stuff flammable?” Bill Bob asked.

We soon had the answer to that.

Bill Bob and I had bought houses on the same street in the late 70s when work at the landfill was just beginning, and worked our way up in the company together. Now that the kids were gone, he and Cheryl and Cindy and I were beginning to think about retirement communities where you did not go to sleep to the sound of garbage trucks rumbling in and out of the landfill, or the crackle of uncontained fires sweeping over mountains of plastic bags.

“You know, I kind of miss the sound of the plastic bags burning,” Cindy said the evening the dome fell in while we and the Leahys were grilling steaks on our backyard grill. “It kind of put me to sleep, like a fire in the fireplace on a winter evening.”

“What’s that?” Cheryl exclaimed.

A rush of wind came from the landfill, followed by the throat-closing stench of burning plastic.

“Get inside!” Bill Bob cried as I took the steaks off the grill. “The dome caught fire!”

The sky over the landfill was clotted with thick black smoke lit orange by the flames beneath it.

This time corporate was ecstatic. Once the dome was burned out, we could put in even more waste without it blocking the flow like an upside down cup over a garbage disposal. Besides, the crater was getting deeper, and Settlers Landfill was about to become the largest in the country. Despite thousands of tons of dirt dumped into the crater, however, the fire burned for three weeks, causing the evacuation of everyone within our out gassing range. Every TV station in town had drones circling to get real time action shots, and we were the subject of sarcastic comments by TV talk show hosts and liberal politicians all over the country. Bill Bob and I and our wives had to move across town to an extended stay motel, cutting short the summer cookout season.

“I don’t need all this,” Bill Bob said after he had been up all night trying to move protesters out of the access road to the landfill so the trucks could get through. “I’m going to take early retirement.”

“Maybe I should, too,” I agreed. “Florida is looking better every day.

We weren’t the only ones with ideas like that. The only problem was getting our money out of our houses. That’s when corporate announced it would buy the house at pre-explosion fair market value of any employee who agreed to stay on until retirement. As usual Chicago thought it would all blow over in a year and everyone would forget about the offer. Instead, the problem kept expanding.

The crater was getting bigger. Even the waste truck drivers noticed that they didn’t have to drive so far into the site to discharge their loads. Finally figuring this could be as much a problem as an opportunity, corporate ordered me to find out why.

That’s when I met Cleves Warsaw, Ph.D. No one in City University’s engineering department knew anything about crater mechanics, so I was referred to physics. Dr. Warsaw, a

member of the adjunct faculty, was the nation's leading expert on the formation and life cycle of craters. With a scraggly beard whitened by chalk dust and a squint from spending years peering through telescopes, Dr. Warsaw looked more like a janitor than a professor. Bill Bob made him show two sets of government issued identification to let him onto the landfill. Fortunately he had a current Yosemite National Park pass along with his driver's license, or we would never have learned what was going on with the hole.

Like many physicists, Dr. Warsaw was obsessed with data. What was the radius of the landfill when we installed the plastic dome? When did we first notice the hole widening? Did we measure it? Could we get access to the TV stations' drone films? All this was necessary to determine the crater's coefficient of expansion. Along with all this, he was the most reckless investigator I have ever known. Nearly every day we had to wire him up to inspect the crater's edge, and nearly every day he fell in and was extracted with great difficulty, often with a winch. Did I tell you he weighed over 300 pounds?

Corporate was demanding answers, and some drivers were refusing to enter the landfill for fear their trucks would fall in. When Dr. Warsaw finally announced he had found the answer, I set up a conference call with corporate, because no one there would come near the landfill.

"You're not going to like this," Dr. Warsaw told me before he began.

I was just happy that Chicago had not insisted on Skyping. If they had seen Cleves Warsaw, they wouldn't have believed anything he said. As it was, the call was delayed while he fiddled with his laptop and set up a screen to project his conclusions. Bill Bob, who was sitting in out of general interest, was getting edgy.

"Looks like he's about to download his pornography collection," he whispered.

And then Dr. Warsaw turned down the lights and started his presentation. Bill Bob was lost from the get go, but to me it had a certain logic, like one of those guys at the fair selling tools you could use to chop vegetables and work on your transmission all at the same time.

“So just tell us what’s going to happen,” our executive VP said over the speaker phone.

It was the first time anyone in Chicago had spoken.

“This is what’s going to happen,” Dr. Warsaw said, showing a computer projection of the crater expanding until a bulge arose in its center that formed a ball so big that the crater disappeared.

“I can’t see it,” the executive VP snapped. “Yardy, what the hell is going on?”

“It looks like the crater is turning the world inside out like a guy taking off a sock.”

“How much did we pay for this?”

“Dr. Warsaw, what are you telling us?” I demanded.

Like so many theoreticians, he could not give a simple answer. In the late 1940s, the Soviet mathematician Dmitri Baklanov had developed a series of equations so elegant and seemingly detached from reality that no one had ever found anything in the universe that they described. Thinking Baklanov had written a mathematical parody of the Soviet Union, Stalin had him shot. Afterwards the best mathematical minds in the world had searched for some application for the Baklanov equations, much as they searched for centuries for something that would turn lead into gold or proof of Fermat’s Last Theorem.

“And now I have identified the process Baklanov predicted,” Dr. Warsaw exulted.

“When an explosion occurs with sufficient force directed downward at a particular place on the earth’s surface, it sets in motion a process whereby the crater expands and deepens until it exerts

a sufficient attractive force on the other side of the globe, which swells downward and engulfs the original crater, causing the world to turn itself inside out.”

I have never known Chicago to be quiet for so long.

“How much time have we got?” asked the executive VP.

“Seven years, two hundred and thirty-one days and three hours.”

“At least it’s not tonight,” someone else in Chicago said. “I’ve got to take my kids to soccer practice.”

The rest of the call was about keeping everything under wraps so the public would not panic and house prices in the neighborhood would not fall any more than they already had. It turned out that the company was negotiating a class action settlement and had offered its employees the same deal it was offering everyone else, except that the employees had to stay on the job to get it. Dr. Warsaw assured us he would not disclose his work until it was published in the peer-reviewed journal *Crater Dynamics*. Fortunately, *Crater Dynamics* was published bi-annually, and the most recent edition had just come out. The world would not know its fate for nearly another two years.

“There’s more than enough time for me to win the Nobel Prize,” he said happily. “The university will have to give me a tenure track position when I win the Nobel.”

“That’s right, Professor,” the executive VP assured him. “No need to get people all worked up about something when there’s nothing they can do about it.”

After the call was concluded, Bill Bob and I went to our offices to work on our applications for early retirement. Corporate didn’t want us to go, but Bill Bob started speculating about what would happen if the press got wind of all this. We were granted early retirement along with the house buy out after we signed a confidentiality agreement.

Later I asked Dr. Warsaw the last place to be sucked into the earth before the world turned inside out. He said Yekaterinburg, Russia, about 1100 miles east of Moscow, where the last Czar and his family were murdered by the Bolsheviks in 1918. Cindy and I don't think a few extra months on the edge of Siberia are worth it.

So Bill Bob and Cheryl and Cindy and I are moving to Key West after the first wave of panic selling hits, and they think they're all going to go under tomorrow. Being inundated by a tsunami can't be any worse than freezing in a blizzard, even if it comes a little sooner. Dr. Warsaw says we'll have several good years in Florida. That's more than most people get. The end of the world is only a problem if you let it get to you. Come to think of it, maybe somebody will come up with a technological solution for that, too.