FREQUENTLY ASKED QUESTIONS

We have been targeted by wealthy investors, to permit a landfill named "Conecuh Woods". This is because we are rural, underfunded, isolated, thinly populated, and possess large tracts of expendable timberland. They will propose that if they build a landfill, it will fill our coffers with much needed funds. They also suggest there will be no risk or expense to us. Conecuh Woods has an option to buy wooded property and they imply that this landfill's location will disturb only a few residents. They assure us their liner will protect us from leakage, the smell will be negligible, and no hazardous waste will be present. They promise they will meet or exceed EPA standards. There are suggestions that golf courses, homes, and industry can be located around the facility. And when it is filled up, they suggest we could build a park on top.

As responsible citizens and guardians of the land we live on, let us look more deeply into this "bargain" with these out-of-state investors. First let's look at the economic issues. Landfills are a growth industry. The nation is generating garbage and industrial waste at an alarming rate. The demand for landfills is high and growing higher and the supply is small and getting smaller. In 1988 there were about 8,000 landfills and by 2005 there were 1,654. Large cities have waste waiting in barges, trucks, and train cars to go somewhere, anywhere except near them, where their vocal, knowledgeable citizens mobilize against landfills. These city dwellers are willing to pay great sums to dispose of their wastes. Some cities in Florida are paying in excess of $100 a ton. So let's try to get some understanding of this project and see if we want to accommodate these people.

How big is this landfill? The proposed landfill in Conecuh County will have a disposal size of 1,600 acres on a tract that totals about 5,100 acres (8 square miles). Early remarks suggest that this Conecuh landfill may process 10,000 tons of waste per day. We don't know yet - this estimate may be low. Calculations based on relative size of the nearby Timberland landfill and what they process suggest that this proposed landfill could actually process over 25,000 tons per day.

To put this in perspective, the United State's largest volume-per-year landfill is Puente Hills, in Whittier, California. It accepts 13,200 tons a day. It has a disposal size of 550 acres, and a total size of 1,365 acres. Clearly the Conecuh County landfill's size dwarfs the largest volume landfill in the nation. Also, keep in mind that it is very likely that volume per day and size will increase, based on the history of Timberlands landfill in nearby Escambia. It's as if we're being asked to accept a baby dragon, but have no idea how large it will become.

This is the daily waste for millions of people's homes, businesses, restaurants, farms, and some of their industrial waste. Clearly, we do not have this many people in Conecuh County. So others from outside our county and our state will be encouraged to use this facility. Since the site has spectacular access by interstate, rail, and water in Mobile Bay, we suspect that waste will come from far and wide.

Do we need this landfill? Timberlands is a landfill in nearby Escambia County - right over the Conecuh line. It has 134 acres, and room to expand. It is not full and is not expected to be full for at least 19 years. In fact, our Conecuh County waste plan says there does not appear to be a disposal capacity issue facing the county for many years.

But looking ahead into the future, we do need to have a longer term plan to manage our own waste. More and more, we are recognizing that landfills don't make sense, yet we keep building them and filling them.

While this may be a reasonable short-term solution, we cannot expect this to be suitable in the long run. Waste management means sensible management with the ultimate goal of reducing the amount of waste dumped into a dead-end landfill to zero. This means, yes, the "R word" - recycling. If we recycle and reuse glass, plastic, paper, metal and we compost kitchen waste - what is left? Not much. Our county can and should begin the planning, so that we can do the responsible thing for our future. Also, let's not contribute to the irresponsibility of others by enabling their bad habits.

What is in this waste? The investors say "only household garbage" Legally and technically, this is referred to as Municipal Solid Waste (MSW). A description can be found in appendix A.

Yes, all these items are permissible and will be brought in. To characterize this as "household" or "kitchen" garbage is very misleading. Note that Municipal Solid Waste includes multiple sources of hazardous wastes. This is what goes into the garbage trucks from homes, apartments, and so forth. No one can inspect or sort this waste to separate the hazardous items. Also included in Municipal Solid Waste is hazardous waste from "conditionally exempt small-quantity generators (CESQG)". This is mostly dumpster type waste from painters, landscapers, beauty shops, cleaning services, farms, etc.

How much hazardous waste could we get? So we know we will get some hazardous wastes. A standard estimate is that 1% of household solid waste is hazardous. So if 10,000 tons per day are placed in a landfill we can expect 100 tons per day of hazardous waste. A more alarming situation has arisen in Timberlands landfill. A recent article reveals that the Alabama Department of Environmental Management (ADEM) has allowed about 1,400 truck loads of "mercury-laced wastes" to be dumped at the Timberlands site in Escambia County. Since the mercury was produced prior to the date when the EPA definitions were published, ADEM says this mercury can't be ruled toxic. The Conecuh Woods investors assure us that their landfill will meet or exceed all EPA and ADEM standards. But since ADEM is allowing truck-loads of mercury into a MSW facility, does a Conecuh Woods statement really protect us?

Why are these wastes hazardous? Hazardous means it can burn, corrode, or make us sick. For example, mercury and lead are highly toxic to the brain and nervous system. They cause brain damage and delirium in adults and retardation in children. The cleaners, solvents, pesticides, fuel products, and oil-based paints contain or can break down to chemicals which may cause cancer and birth defects. Many are highly

flammable and if they catch fire they can destroy the liner. If they explode, they destroy much more. Some are corrosive, like acids and lye. These can destroy/damage the liner and human tissue.

What else can be put into our landfill? There is another way to classify landfills as Subtitle C or Subtitle D. Subtitle C accepts hazardous wastes and subtitle D accepts non-hazardous wastes and hazardous wastes as described above under MSW. Subtitle D landfills also accept

Municipal solid waste (which we described previously)
Municipal sludge
Industrial non-hazardous waste
Construction and demolition debris
Agricultural waste
Oil and gas waste
Mining waste

So, this suggests that about anything can go in except hazardous wastes from large producers. And, even that seems negotiable, based on the 1,400 truckloads of mercury recently sent to Timberlands.

Where exactly will this landfill be located? The 5,100 acre tract is located in southwest Conecuh County between Range and Repton. This tract is now heavily forested.

Are there any problems with this location? There are several concerns. The Code of Federal Regulations has defined six restrictions regarding landfill siting in order to limit hazards to the public and to certain sensitive environments. Among th

And, what actually happens to our earth? Basically, the developers create a large crater in the ground, coat it with 2 feet of semiporous clay and line it with a plastic sheet one-sixteenth (1/16) of an inch thick. Think - deep clay pond lined with plastic no thicker than the space between the next two letters: II This is "state-of-the-art" landfill construction. Into this crater (they have 1,600 acres to work with) will be heaped millions and millions of tons of waste. The rains will come and the waste will be soaked and a tea, or leachate, will be formed. Extensive methods of pumping and draining will be needed to keep the leachate depth below 30 centimeters deep (about 1 foot) but it will leak. Conservative engineering estimates range from 330 to 33,000 gallons per acre per day of leakage depending on how well the liner is made and installed and how carefully it is used and protected. The clay liner will slow the flow, but you know that ponds leak. When it leaks, it may be slow, it may be fast. If fast, you may drink it; if slow, your children may drink it; if very slow, your grandchildren will inherit and drink it.

What is in this leachate? At first, it is all the liquids and anything soluble in the new waste. You can imagine the composition given the previous list of raw waste. The remaining solid waste begins to decompose. It breaks down and mixes with the rain

water; the waste dissolves, and this adds to the leachate collecting at the bottom. Various chemical reactions occur, and an acidic environment is created which then encourages metals to corrode and dissolve and become part of the leachate. This enriched leachate will slowly leak though the minute holes in the liner. This is how the toxic mercury and lead (which cause brain damage and mental retardation) can escape from the landfill. Also the organic solvent and plastics will begin to diffuse through the liner (in other words, their molecules pass through the molecules of the liner even if the liner is intact). These substances are also toxic and can increase the risk of cancer, birth defects, and mental retardation. So some toxic waste will get out. And, we will OWN it in OUR earth and water.

Where else does the leachate go? To keep the level at about 1 foot deep in a ONE acre crater in a site with over 60 inches of rainfall per year, you will need to remove nearly two million gallons of waste water a year. This is for a ONE acre site. We do not know how many active acres they plan to operate, but they say that they will ask for 1,600 acres. In any case, this requires an elaborate system of perforated drain pipes and pumps on the floor of the landfill. Many problems plague such systems and clogging is difficult to control. If it does not function properly, the pond can spill over and disaster is upon us (and think what may happen in a hurricane). So, if all goes well, we will have vast volumes of liquid waste contained (we hope) outside the landfill.

What is done with the leachate after it is pumped out? In state-of-the-art waste management facilities, leachate should be treated like all municipal waste water in special plants that separate the waste (sludge) from the water and then return the sludge to the landfill. How are our developers going to handle this complicated, expensive problem? Will it be trucked off? Will it go back to the landfill? And, where will the "cleaned" water go? We must get better answers on this.

Let's go back inside the landfill. An idea to keep in mind is a law both of physics and common sense - matter is neither created nor destroyed - the atoms of matter that come into the landfill are not magically gone. They are here with us and seep into our land, water, and air. We are the epicenter. We have bought this matter, every atom of it, and we will have to live with it. As the waste continues to decompose into simpler molecules, gases will be released. Some smell bad; some are poisonous. The most abundant are methane (natural gas) and carbon dioxide (as in your lungs or car emissions). But in smaller quantities, depending on the composition of the solid waste, you have nitrogen, oxygen, hydrogen sulfide (smells like rotten eggs), ammonia, hydrogen and carbon monoxide.

Let's consider methane first. The methane production from MSW is huge. According to the U .S. EPA, 1 million tons of MSW in a landfill generates about 300 cubic feet per minute of methane gas.

How will the methane be handled? First it has to be carefully collected and controlled or huge explosions and fires can occur. Will it be burned off and the heat dissipated (wasted) in the air? Will it be burned to produce useful work (as in the brick factory at

Moody, Alabama)? Or, will it just float away and add to air pollution? So far, no answers from our investors are forthcoming. Note that all alternatives except burning it off into the environment (to produce CO2 and H2O like your car) or letting it float away cost large amounts of money, and are mentioned in only a vague manner in their communications.

Carbon dioxide is produced in the same huge quantities and will just float away to add to the greenhouse gases (at least it's not poisonous).

What about the other gases? Hydrogen sulfide (H2S, or swamp gas) is of grave concern. It is produced in smaller quantities but is lethal and smells horrible (like rotten eggs). Several neighboring landfills in Florida have an abundance of H2S from sheet rock decomposition (reduction). The gases are suspected to have caused respiratory illness in many, especially the frail, elderly, and young people. H2S is a tricky gas - at low levels it smells like rotten eggs and warns us of its presence. You can smell it at 50 ppb (parts per billion), however at higher levels it becomes less offensive and at that point much more potentially lethal.

Other gases of concern are carbon monoxide (car exhaust - lethal) and ammonia (burns the nose, throat, and breathing passages).

Where do these gases go? These gaseous molecules will flood into any and all air spaces provided for them They will be thick and dense at the landfill epicenter and diffuse out indefinitely. We will all be exposed to them and breath them in. The concentrations at any given time and place will depend on location and atmospheric conditions.

Who will monitor all these potentially toxic chemicals and gases? There are no landfill police. The owners are on an honor system to keep us safe (the government of Escambia County was not aware that 1,400 truck-loads of mercury waste would come to their landfill, only the landfill's operators knew). Perhaps it's safest for the community at risk to own its own landfill?

What happens when "our" landfill is full? The operators now "seal" the landfill (cover it with dirt, sand, asphalt). Hopefully it will be a grave, or "dry tomb" which will not collect water and leak anymore. Now, this grave requires care for eternity, if we want to keep it contained and away from our air and water. This brings to mind another physical law, one a bit more ominous than the first. This says basically that all the universe tends to be disordered (chaotic) unless we work to make it otherwise. Organized home makers understand this, as do farmers, foresters, teachers, and so forth. But as for the landfill, our goal is to keep it contained and dry and organized forever. If left to the forces of nature, it will become disordered - spread out into our world. This grave must be tended and contained or its contents will diffuse and spread throughout our land, air, and water at a rate we would find unacceptable.

Most landfill contracts talk about 30-year maintenance of the closed landfill. What then? The liability becomes very vague at that point but the community lives with the

consequences/fallout while state, federal, business, and local interests battle it out. In short, we get the waste. We get to protect it and secure it and live and die with it. There is now a decomposing liner, crumbling asphalt and degradation products from enormous tons of waste that belong to us, our children, our grandchildren, our great grandchildren, etc. This is our legacy, our responsibility. We will have sold our world for a few pieces of gold. Gold - so we could be the custodians of the waste of others who chose not to take responsibility. People in cities have street smarts. They know they don't want their wastes under their streets or in their air or water. We in the country have earth smarts and should be very careful about what we allow others to place in Conecuh County.

What are the health risks of this landfill? The simple and truthful answer is, we don't know. Landfills of this size and type haven't been in operation long enough. We are just beginning to get 10-year data on the smaller, modern landfills and we need much longer-term studies. Also, no landfill has been this large and intended to collect this much waste. There is no data on the long-term effects of these operations because the experiment is just beginning and we are the guinea pigs. We do know that the hazardous chemicals and gases (discussed earlier) produced in the landfill are toxic to humans, and many accumulate in our bodies slowly over time with continued exposure (drinking, eating, breathing). At first, we might notice relatively minor problems - headaches, stomach aches, rashes. As levels increase in our systems, they can damage our vital organs - brain, kidneys, liver, and blood (immune system). We also know many of these substances can cause grave damage to pregnant mothers and their children and can increase the risk of miscarriages, birth defects, and mental retardation.

It is also clear that the most vulnerable suffer the most: pregnant mothers and their children, babies, and the elderly. As strong adults, we must take responsibility and protect this vulnerable community.

What do we get for taking this risk? We will be offered money. But, keep in mind another law of nature and economics. Nothing is free. What might we get and what might it cost us?

* more money for our schools - which can be used to educate slower and more "challenged" children?
* better hospitals - and more sick citizens?
* a new lake - and water of questionable purity?
* better roads - and thousands of heavy trucks rolling down them every day at all hours of day and night
* a place on the map - as the landfill capital of the nation

Does this make sense? Is it worth the price?

Think about this, pray about this, discuss this with your fellow citizens and County Commissioners and decide if this is what you really want to do with the land that was given to you for stewardship.

Appendix A
Municipal Solid Waste (MSW) Includes:

paper products
glass
aluminum (cans)
non-ferrous metals
copper, zinc (appliances and electronics)
lead (batteries)
ferrous metals (iron, stainless steel)
plastics
rubber
leather
textiles (old clothes, furniture, carpets)
food waste
yard waste
* Toxic metals - lead, cadmium, mercury
*Organic compounds (solvents)
* household hazardous waste (hazardous means ignitable, corrosive, reactive, or toxic)

Types of hazardous household waste that will be accepted include:

Batteries (NiCad, lead, mercury)
Drain cleaners
Oven cleaners
Metal cleaners and polishers
Used motor oil
Automotive fuel additives
Grease and rust solvents
Carburetor and fuel injection cleaners
Air-conditioning refrigerants
Starter fluids
Paints
Paint thinners
Paint strippers and removers
Adhesives
Herbicides
Insecticides & fungicides
Wood preservatives
Asbestos-containing materials
Cosmetics
Flea powder
Florescent bulbs

Household cleaners
Nail polish
Rat and pest control chemicals
Transmission fluid
Microfilm

Appendix B

The U. S. government defines wetlands as "those areas that are inundated or saturated by surface of ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas".