Excerpts from Comments to Screven County Board of Commissioners

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5. The requirements established by RCRA Subtitle D and the Georgia Comprehensive Solid Waste Management Act are not adequately protective of human or environmental health nor do they prevent leaks of leachate into the watershed and groundwater.

b) The State and Federal Acts are not protective of human or environmental health or safety.

AWS assures that "modern" landfills are *infallible* and thus will not affect the health, safety, or environment of the surrounding area: "Compliance with the State Act ensures the protection of the human health and environment and the safety and well-being of the public." *AWS Response to Departmental Review*. That is plainly misleading and designed to lure Commissioners into approving the landfill without looking too deeply based on a false idea that future State processes will include adequate protections.

We note, additionally, that Screven County is well aware of the hassle and long-term detriment landfills can be because it is already dealing with the hazardous Rocky Ford landfill. Attached as Exhibit C is the Environmental protection Division's Hazardous Site Inventory describing Rocky Ford. The Rocky Ford landfill "has a known release of 1,1-Dichloroethene in the groundwater at levels exceeding the reportable quantity" and is currently undergoing cleanup activities. Even a cursory review of the online Georgia Hazardous Site Inventory reveals that most nearby counties are experiencing similar problems with existing or closed landfills. To be sure, at the time of their construction, no one foresaw the impending environmental and health disaster that the Rocky Ford or surrounding landfills would become. Now, however, these landfills pose an ongoing threat to human health and safety and to the environmental wellbeing of the region.

Modern landfills are regulated under RCRA[4] Subtitle D. To implement the requirements of Subtitle D, Georgia has enacted the Comprehensive Solid Waste Management Act as discussed above. The state and federal acts establish *minimum* design standards that counties can supplement. *See* O.C.G.A. § 12-8-30.9(1).

These standards are not protective of human or environmental health: <u>The liner will fail</u>: EPA's own guidance provides that all liners will fail: "First, even the best liner and leachate collection system will ultimately fail due to natural deterioration, and recent improvements in MSWLF (municipal solid waste landfill) containment technologies suggest that releases may be delayed by many decades at some landfills." Solid Waste Disposal Facility Criteria; Proposed Rule, 53 Fed. Reg. 33,345 (August 30, 1988). Similarly, "[o]nce the unit is closed, the bottom layer of the landfill will deteriorate over time and, consequently, will not prevent leachate transport out of the unit." *Id.* The liner failure can be caused by deterioration over time or small holes that happen during the installation process. As demonstrated by AWS's own video ad, the liners are cut with a tool that appears to be nothing more than a modified box cutter. That video link is provided in this packet. Even dilute solutions of common solvents such as moth balls, margarine, vinegar, shoe polish, and essential oils can cause stress cracks in the liner, leading to leakage. Center for Health, Environment & Justice, Landfill Failures the Buried Truth (June 2015).

The landfill cover will degrade: the cap will degrade as weather, settling waste, and burrowing animals cause shifts, cracks, and erosion. Center for Health, Environment & Justice, Landfill Failures the Buried Truth (June 2015). This failure means that more water will enter the landfill, creating more leachate and more pressure on the composite liner. *See* Lee, G. F., and Jones-Lee, A., Flawed Technology of Subtitle D Landfilling of Municipal Solid Waste (July 2019). No number of assurances to the contrary can change the fact that liners and caps do not last forever.

The required groundwater monitoring system is ineffective: For groundwater monitoring, Subtitle D requires that "[a] ground-water monitoring system must be installed that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield ground-water samples from the uppermost aquifer" and to "[r]epresent the quality of ground water passing the relevant point of compliance specified." In other words, Subtitle D relies on strategically placed wells to detect any leak from the landfill composite liner. But the nature of the composite liner itself means that any leak "will generate finger plumes of leachate that will be no more than a few meters wide at the point of compliance for groundwater monitoring." *See* Lee, G. F., and Jones-Lee, A., Deficiencies in US EPA Subtitle D Landfills in Protecting Groundwater Quality for as Long as MSW is a Threat: Recommended Alternative Approaches, Report G. Fred Lee & Associates (March 1997). The finger-like characteristics mean that groundwater monitoring systems can easily miss groundwater pollution from small tears or pinpoint holes in the composite liner that then works its way through the clay: *"*Each monitoring well has a zone of capture for sampling groundwater of about one foot from the well in many aquifer systems." Id. Essentially, satisfying the Subtitle D requirements does not ensure that there will be no leaks, and any leak could easily evade detection, causing significant and irreparable harm. See Lee, G. F., and Jones-Lee, A., Flawed Technology of Subtitle D Landfilling of Municipal Solid Waste (July 2019).

Thus, despite AWS's repetition, state and federal acts do not actually ensure safety. Even if AWS does everything properly, neither the cap nor the liner will remain leak proof. What will last effectively forever, on the other hand, are the noxious properties of the landfill—including the threats from inorganic salts, landfill gas, heavy metals, household chemicals, and PFAS. See Lee, G. F., and Jones-Lee, A., Deficiencies in US EPA Subtitle D Landfills in Protecting Groundwater Quality for as Long as MSW is a Threat: Recommended Alternative Approaches, Report G. Fred Lee & Associates (March 1997).

The owner of a landfill is only required to care for the landfill for 30 years after its closure. Long after AWS's responsibilities to Screven County have ended, the massive amount of noxious waste and deleterious substances confined in the landfill will remain.

That means that surrounding residents could be faced with centuries of uncertainty regarding the safety of their water because thousands of deleterious chemicals and substances could be contaminating the surrounding water with no adequate form of redress.

Even if the State and Federal acts did adequately protect the health and safety of locals, there is often not enough funding to enforce those regulations adequately.

In sum, inevitably, the cap and liner will deteriorate, leaving the untended generating leachate to leak through the aging liner and contaminate the soil and water. That is not a supposition; that is an unfortunate eventuality. A landfill of this caliber poses a very real threat to the health, safety, environmental wellbeing, and potential for positive growth of both the nearby landowners and Screven County as a whole.

6. The proposed landfill threatens wetlands, streams, floodplains, wells and the Ogeechee River.

Both the Zoning Ordinance and the SWMP provide that any proposed landfill must be protective of the environment and natural resources. The SWMP requires consideration of impacts to natural resources including the following:

- Floodplains,
- Significant groundwater recharge areas, and
- River corridors.
- Wetlands,
- Carolina Bays,

§§ 6.1, 6.2, 6.4.

The site is home to wetlands, streams, wells, and floodplains. The topography and hydrology of the area clearly demonstrate that the site drains to the Ogeechee River.

a) Floodplains

AWS simply states that it does not plan to build within the floodplain, but it has applied for a conditional use permit for the whole property and could therefore build anywhere. Additionally, AWS has not conclusively demonstrated that it will not affect the wetlands or ponds on or surrounding the property or that it will be protective of groundwater resources. AWS has also failed to demonstrate that there are no Carolina bays on the property. In fact, AWS has failed to conclusively demonstrate

b) Groundwater

AWS contends that there should be no concerns as to groundwater because the site is not a "significant groundwater recharge area." However, this assertion is misleading and meant to lull people into a false sense of complacency. In addition to the above-stated, the proposed landfill site is near multiple recharge areas for the Floridan Aquifer, putting that primary source of drinking water for the region at risk of contamination. "Significant groundwater recharge area" is a term of art that relates to the speed with which an area recharges. The site in question, however, is still ecologically important as recharge areas exist just north and east of the site. These areas of groundwater recharge are particularly important given that they recharge the Floridan Aquifer, which stretches from Florida throughout the Southeast and is a primary drinking water source for the entire southeastern portion of Georgia, as well as Florida and parts of South Carolina, Alabama, and Mississippi. That along with the presence of wells on the property, discussed below, significantly increases the likelihood of contamination of the aquifer.

The connection of the surficial aquifer to the main water source for the region, the Floridan Aquifer, indicates there is a serious risk of contamination that must be studied and accounted for with particularity at the very least. The "evaluations" AWS has provided focus on lateral groundwater flow in the surficial aquifer, which is not a major water source in the area. Those "evaluations" fail to

analyze the potential for groundwater flow from the surficial aquifer into the Upper Floridan aquifer, which is the main source of water in the area. Upon further investigation, modeling studies done by the United States Geological Survey ("USGS") indicate that most of Screven County, including the proposed site, lies within the recharge area for the Upper Floridan aquifer. *See* Payne, D.F., Abu-Rumman, Malek, and Clarke, J.S., 2005, *Simulation of ground-water flow in the coastal area of Georgia and adjacent parts of South Carolina and Florida—predevelopment, 1980, and 2000*, p. 82 (U.S. Geological Survey Scientific Investigations Report 2005-5089).

c) Streams

AWS's application indicates that the proposed landfill will not affect any water source. The picture below from USGS StreamStats clearly depicts the several streams running through the property.

These streams are connected to Brady Branch, which feeds into the Ogeechee River, a unique blackwater river that is highly vulnerable to contamination. Take, for instance, the elevation map included on the following page. The darker areas are lower in elevation. As we know, water, and everything it carries, runs downhill. The elevation map on the following page shows that everything on the site will run into Brady Branch and thus the Ogeechee River. Any stray trash will end up in the Ogeechee River. Any leak from the landfill will end up in the Ogeechee River. Any overflow or breach of the stormwater or leachate control systems will end up in the Ogeechee River.

d) Wetlands

AWS's repeated claims that its proposed landfill will not impact wetlands are verifiably inaccurate as the wetlands map attached on the following page illustrates. The proposed site contains and is surrounded by wetlands. We also reemphasize that while AWS has asserted to the Commissioners there are no Carolina Bays on the property, it affirmatively admitted the existence of Carolina Bays and springs in its DRI application, attached as Exhibit D: "There are also natural springs and Carolina bays [sic] on the property." Further, in the technical memorandum to Randy Hagan, James R. Henderson of truGround confirmed the probable existence of a Carolina Bay and the need for a more detailed analysis. *See* James R. Henderson, *Review of July 9, 2019 Amended Application (Appendices X and XI)*, truGround, Dec. 27, 2019, at 5.

AWS's response via a letter it commissioned from Mike DeMell of Environmental Services, Inc. ("ESI") does not negate the existence of Carolina Bays on and near the property. In fact, that letter refers only to the Georgia Natural Heritage Program Wildlife Resources Division review of the area. Contrary to AWS's arguments, nothing in that review precludes the existence of a Carolina Bay on the property. In fact, "at least 18 other Carolina Bays" exist close to the project area. Screven County also "has the highest presence of Carolina Bays in Georgia." *See* truGround fn 3. ESI then argues that the site plan avoids the potential Carolina Bays on the property. But AWS's site plans show that one of the Carolina Bays will be used as part of AWS's stormwater system. As you know, Carolina Bays are unique, isolated wetlands with a high ecological value.

e) Wells

Along with these streams and wetlands, the parcels are also home to several wells, which the surrounding residences rely on for their personal consumption and agricultural needs. Again,

according to AWS's own data, there are 22 offsite potential residential receptors within .5 miles of the proposed site. Any breach, leak, or simple mistake could lead to water contamination affecting not only drinking water, but also the entire Ogeechee watershed and habitat. See the Wells Map on the following page, depicting many of the wells on the property and in the immediate vicinity.

f) Leachate

Lastly, as leachate, the noxious substance formed when water and waste mix, is generated from the inevitable introduction of water to the system, pressure increases on the liner. This increased pressure increases the leakage rate. Collection pipes can clog and fail from silt, mud, microorganisms, chemical reactions, and more in a period as short as a decade. Landfill Failures the Buried Truth, Center for Health, Environment & Justice (June 2015). When the system fails, the cycle of increased pressure and leakage rate continues in a noxious feedback loop. Yet this system is supposed to prevent the accumulation of leachate for as long as potentially deleterious leachate is generated—that is, forever.

AWS has not adequately addressed the planned treatment of leachate. While it most recently claimed it will treat leachate onsite, originally AWS proposed sending the leachate to the local wastewater treatment facility. Now that it has proposed treating leachate onsite, you are once again left with inadequate information about how it will accomplish that in a manner protective of natural resources.

The threat landfills and leachate pose to water resources was recently demonstrated in Hall County, where emergency action had to be taken to relieve pressure on the landfill and prevent runoff issues in a drainage basin that flows to the Oconee River. Marc Eggers, Hall County Trying to Avoid Flooding Issues at Landfill, AccessWDUN, Feb. 24, 2020. To prevent what would likely have been an environmental and logistical catastrophe, eighty truckloads of storm water had to be hauled to other counties at a cost of $115,776.

Importantly, it is impossible to know the true potential for groundwater contamination without an in-depth, site-specific evaluation. As discussed in the following section, AWS has refused to provide an adequate evaluation to either the Coastal Regional Commission or to the Screven County Board of Commissioners, despite having had literally months, if not years, to do so.

11. AWS has significantly exaggerated any potential economic benefit and ignored verifiable economic detriments the proposed landfill will cause. Further, contrary to the "study" presented by AWS, a massive, regional landfill will lead to decreased property values in the area.

c) Further, contrary to AWS's recent assertions, landfills do depreciate the value of surrounding properties.

AWS has attempted to rebut peer-reviewed studies and common sense with an appraisal by Andy Sheppard, claiming that it conclusively shows that landfills do not affect property values in rural counties. But upon further analysis, that is not what the appraisal says. Instead, Mr. Sheppard said that he found "no evidence to indicate a reduction in per-acre price being

paid," not that there is no negative impact on surrounding property values. That lack of evidence makes sense when it becomes clear that the appraisal was extremely limited in size, scope, and thoroughness.

Mr. Sheppard laid out the techniques used such as paired sales and asking parties directly involved. Mr. Sheppard stated that "the best analytical tool is to ask the party directly involved with the transaction" because assuming motivation through statistical analysis without getting the "true story 'from the horse's mouth'" would not be proper scientific method. Yet he did not call Screven County citizen around the proposed site to ask them why they live where they do, what their motivations are, and how a landfill would affect their perception of the value of their properties. Further, while he contends that he attempted to used paired sales analysis to evaluate the impact of landfills situated in rural Georgia counties, that technique only works when sufficient data is available. See Shawn Wilson, "Evaluating the Potential Impact of a Proposed Landfill," The Appraisal Journal, (Winter 2009), p. 26.

To start, Mr. Sheppard found municipal solid waste landfills in only eight rural counties: Charlton, Meriwether, Taylor, Twiggs, Wayne, Candler, Jefferson, and Toombs. Of those eight counties, three of the landfills accept significantly lower volumes per year than AWS's proposed landfill will accept. So, Mr. Sheppard looked to only six counties.

Of those six counties, Toombs took in only 45,000 on average over the past three years. AWS's proposed landfill is 30 times larger than that. In other words, Toombs County is not comparable, though Mr. Sheppard still used it to draw his conclusions. As the following paragraphs explain, the extremely limited data compiled from those counties, far from proving that landfills do not affect property values in rural counties, indicate that landfills do negatively affect quality of life and the ability to use and enjoy nearby property.

In one of the counties that does take on a similar level of waste, Charlton County, no recent sales occurred, and thus no data was gathered that could support the premise that landfills do not have cause a diminution in value of surrounding properties. Id. at p. 8. Mr. Sheppard concluded that "no direct interview data or mathematical evidence exists to prove a diminution in value associated with the Charlton County landfill." Id. Yet, no data exists to prove a lack of diminution in value associated with the landfill either. Mr. Sheppard's conclusion is therefore misleading at best and intentionally deceptive at worst.

In Meriwether County, which has a landfill of comparable size, there were 14 sales between 2015 and 2018. Id. at p. 9. Yet Mr. Sheppard deselected 11 of those 14 sales, none of which occurred in 2019, without any explanation. Id. Mr. Sheppard goes on to conclude that "none of the potential pairings or conversations with buyers confirmed any impact from the Meriwether County landfill." Id. Yet contrary to that conclusion, one out of the four people Mr. Sheppard spoke to said, "he would not buy a house this close to the landfill due to trash blowing up and down the road." Id. at p. 11. Further, that buyer could not put a well on his property due to the "possibility of contamination from the landfill." Id. Those are demonstrated negative impacts from the landfill. Further, losing the ability to put a well on the property is, by definition, a loss of value. Thus, once again, Mr. Sheppard's conclusions are disingenuous.

In Taylor County, Mr. Sheppard concluded that "it is not plausible that" one of the two potential pairings "illustrates anything." Id. at p. 13. Of the people he spoke to, one buyer said that he got a good deal on the property because the seller wanted to "be done with" the property. Id. at p. 14. Another person indicated that he did not know the landfill was there when he purchased the property. That person "claimed that there is a prevalent smell, as well as trash he had to pick up every so often." Id. at 14. Yet, once again, Mr. Sheppard made the misleading conclusion that none of the data "confirm[ed] any discount for properties selling .73 miles or more from the landfill."

In Twiggs County, limited data did not allow for pairing and Mr. Sheppard only spoke to one person. Id. at p. 17.

In Wayne County, "no direct verification was made with any buyer or seller in [the] county." Id. at p. 18. In other words, Mr. Sheppard gathered no firsthand knowledge. Mr. Sheppard concluded that the "data does not appear to support a conclusion that being slightly more than a mile away, and further, influences value." Id. at 20. Again, that does not mean we can conclude that being near a landfill does not influence value.

Lastly, Toombs County has significantly smaller landfill and thus is not truly comparable. Nevertheless, Mr. Sheppard still found extensive evidence of the negative impacts of landfills by speaking to several disgruntled owners. One of the people Mr. Sheppard spoke to noted that "recent landfill activity has shifted closer to his property, increasing smells since he bought the property." Id. at 23. That owner is 3000 feet away from a landfill that is 1/30 the size of AWS's proposed landfill. Yet it still creates odor issues which led that owner to believe he overpaid. Id. A second nearby owner located more than 7,500 feet from the landfill was not aware of the landfill when she purchased the property but that she thinks she overpaid for the property. Id. at 24. That owner also commented that she "has been disappointed by all the litter from the trucks hauling trash." Id. Finally, a third owner located more than 8000 feet from the landfill also commented on the trash blowing from the trucks, noting that he has to pick up trash once a week. Id. Mr. Sheppard makes yet another disingenuous, and in this case plainly false conclusion that "one respondent noted that they may have overpaid for their property." In fact, the preceding paragraphs indicate that at least two respondents noted overpaying and several complained of decreased use and enjoyment of their property due to the landfill.

In sum, contrary to Mr. Sheppard's conclusions, there was ample real-world evidence to show that property owners near landfills suffer from a decrease in the use and enjoyment of their properties due to the landfill. These statements directly from property owners contradict the disingenuous conclusion that there is no impact on value of surrounding properties. In fact, appraisal provided data pointing to the exact opposite conclusion—that landfills do depress and negatively impact nearby properties.

Unlike the inconclusive appraisal, the common-sense idea that landfills negatively affect surrounding property values is not just unfounded speculation. Rather it is a well-documented fact. For example, as mentioned above, "landfills that accept high volumes of waste (500 tons per day or more) decrease adjacent residential property values by 13.7% on average." Ready, R. C., Do Landfills Always Depress Nearby Property Values? The Journal of Real Estate Research,

37

32(3) 321-340 (2010). Similarly, a study published in the Journal of Land Economics found that landfills "adversely affected home values in the range of 12% at the landfill boundary and 6% at about one mile." Nelson, A. C., Genereux, J., & Genereux, M., Price effects of landfills on house values, Land Economics, 68(4), 359-365 (1992). Importantly, "given a choice between two sites offered for the same price and identical in every respect, except that one is closer to a landfill, home buyers will choose the site that is farther away." Id. Further, "[f]or landfills handling large volumes of waste (i.e., over 500 tons daily) the rate of new residential construction and sales of residences and lots was much less than those landfills receiving 300 tons or less per day." Charles P. Cartee, A Review of Sanitary Landfill Impacts on Property Values, The Real Estate Appraiser & Analyst, 44 (Spring 1989).

In "A Survey Approach for Demonstrating Stigma Effects in Property Value Litigation," Flynn et al., found that a paired sales analysis indicated that property values next to landfills are "lower than in comparable areas more distant from the landfill." Flynn et al., A Survey Approach for Demonstrating Stigma Effects in Property Value Litigation, The Appraisal Journal 35-44 at 36 (Winter 2004). Further, "sale transactions or project that did not occur may be as telling as those that did." Id. at 37. In other words, sales transactions that did not occur cannot be examined in a paired sale but may be more indicative of true loss in value than sales that did occur. The study by Flynn et al. estimated a loss in property value for properties near landfills to be between 8 and 10 percent. Id. at 36.

Importantly, research shows that where a buyer is not fully aware of the nearby landfill, there may be no market effects; if those buyers were fully informed, however, that would not be the case. Reichart, Small, and Mohanty, The Impacts of Landfills on Residential Property Values, Journal of Real Estate Research 297-314, 300 (1992). As discussed above, many of the individuals Mr. Sheppard spoke to were not fully informed before purchasing the property. Further, diminution in selling prices is not the only indication of a loss of value. Instead, "both nuisance and potential health problems are perceived to be related to a reduced level of marketability, lower selling prices, and increased homeowner flight." Id. at 310.

You do not have to look to official, peer-reviewed studies or expert analysis to find an accurate analysis of the negative economic impacts of landfills. Instead, look only to Butts County, where a private landfill operated by Republic Services has been a massive barrier to positive growth. In an article about the recent legislative increase of host fees, an event that purportedly brought a "windfall" to Butts County, county officials "noted that regional landfills adversely affect property values of the surrounding area, which translates into a reduction in taxes collected on those properties." In other words, Butts County needed those increased host fees because the landfill has negatively and drastically affected the area. County Government Relations Director J. Michael Brewer said, "This is not the type of development that we had hoped would settle here and much of the reason for that is the proximity of a large, major landfill." See Michael Davis, Butts County to see Windfall from increased Landfill fees, Jackson Progress (Oct. 2, 2018).

Additionally, after fighting for two years to get those fees increased, Butts County is now facing the possibility of coal ash being dumped at a lower fee: "The price for a ton of coal ash is

a whole lot less than the $2.50." See Larry Stanford, Coal ash headed to Butts Co Landfill? Jackson Progress (Dec. 6, 2019). As mentioned, the price for coal ash is only $1.00 per ton. See O.C.G.A. § 12-8-39(d)(1)(B).

These peer-reviewed and published studies indicate that landfills have a drastic negative impact on surrounding property values and the ability of an owner to use and enjoy their property—a fact the CBAER Analysis completely omits and Sheppard's appraisal fails to preclude.