

## 9. Oak Grove

Luminant's Oak Grove Steam Electric Station in Franklin is a relatively new coal plant, in operation since 2010. The site has three impoundments that store flue gas desulfurization (FGD) waste and coal ash, and a coal ash landfill. For purposes of complying with the Coal Ash Rule, Luminant monitors the groundwater around the ponds as a single unit (the "FGD Ponds"), and monitors the groundwater around the landfill as a separate unit. Two of the ash ponds are lined, meaning that they have a composite liner with both clay and plastic components.<sup>54</sup> One of the ash ponds (FGD-A) has only a clay liner; according to a recent decision from the U.S. Court of Appeals for the D.C. Circuit, FGD-A will have to be considered "unlined."<sup>55</sup>

The wells that Luminant has selected as "upgradient" are unlikely to be reliable background wells. Wells FGD-8 and FGD-11 are the wells that Luminant selected for the FGD Ponds. FGD-8 appears to be downgradient, not upgradient, of ash pond FGD-C, and FGD-11 appears to have been installed in an area of fill or disturbed soil on the edge of ash pond FGD-C.<sup>56</sup> The upgradient wells for the landfill (AL-10 and MW-02) appear to have been installed on the edge of, or even within, the landfill.<sup>57</sup>

The groundwater at Oak Grove is contaminated with unsafe levels of multiple coal ash pollutants, mainly lithium, but also cobalt, chromium, and selenium:

**Table 9.1: Unsafe Groundwater at Oak Grove**

Well	Pollutant	Health threshold	Mean concentration	Maximum concentration
FGD Ponds				
FGD-8*	Cobalt (µg/L)	6	8.8	15.8
	Lithium (µg/L)	40	46.7	149.0
FGD-3	Cobalt (µg/L)	6	32.0	43.6
	Lithium (µg/L)	40	124.1	176.0
	Selenium (µg/L)	50	55.8	90.7
FGD-5	Lithium (µg/L)	40	119.4	164.0
FGD-6	Lithium (µg/L)	40	48.2	170.0
Landfill				
MW-02*	Lithium (µg/L)	40	51.2	100.0
MW-05	Lithium (µg/L)	40	51.5	114.0
MW-08	Chromium (µg/L)	100	159.2	399.0
	Lithium (µg/L)	40	78.8	113.0
MW-08R	Lithium (µg/L)	40	60.1	92.7
MW-09	Lithium (µg/L)	40	58.1	63.6

Detection monitoring at both units should have found SSIs for multiple pollutants, including boron at the FGD ponds and calcium, chloride, sulfate and TDS at the landfill. As described above, the "upgradient" wells at the FGD ponds are neither upgradient nor appropriate background wells. They both show signs of coal ash contamination, which makes any statistical comparisons with other FGD pond wells meaningless. A valid

comparison to truly upgradient wells would likely find SSIs for calcium, fluoride, sulfate, and TDS in addition to boron.

Luminant apparently agrees, at least with respect to the FGD ponds, because it has initiated assessment monitoring at these ponds.<sup>58</sup> But again, both coal ash units should be in assessment monitoring. Luminant has therefore violated the Coal Ash Rule in at least two ways at Oak Grove: First, by selecting inappropriate background wells, and second, by failing to initiate assessment monitoring at the landfill.

In assessment monitoring, the statistical problems described above (stemming from the use of inappropriate background wells) would undermine any statistical analysis. Yet even using Luminant's background wells, the data show likely SSIs for several pollutants:

**Table 9.2: Wells with Likely Assessment Monitoring SSIs at Oak Grove**

Downgradient well	Pollutants exceeding likely groundwater standard
Landfill	
MW-05	Arsenic
MW-08	Chromium and cobalt
FGD Ponds	
FGD-3	Cobalt and selenium

If Luminant were to perform valid assessment monitoring using appropriate background wells, it would find even more SSIs (statistically significant increases), including elevated cobalt, lithium, molybdenum, and radium in one or more wells at the FGD Ponds.

