Gelman 1,4-Dioxane Site:
Key Differences between the Current (Third Amended) Consent Judgment
And the Proposed New (Fourth Amended) Consent Judgment

I. Executive Summary

The Proposed Fourth Amendment to the Consent Judgment would change the requirements of the current Gelman Consent Judgment in the following primary ways: (1) an expansion of the Prohibition Zone boundary (which limits exposure to 1,4-dioxane) to account for the recent reduction in the state 1,4-dioxane cleanup criterion for drinking water from 85 parts per billion (ppb) to 7.2 ppb; and (2) a significant increase in the obligations imposed on Gelman to investigate and remediate 1,4-dioxane contamination at and migrating away from the Gelman site.

With respect to the first main change, the practical effect of the State reducing the drinking water standard from 85 to 7.2 ppb means that the groundwater located under a greater area of land is now above or at an imminent risk of being above the drinking water standard. The Proposed Fourth Amendment would address the issue by prohibiting consumptive use of groundwater under this greater land area.

With respect to the second main change, Gelman would be required to install new monitoring wells both west and east of the Gelman site in order to further investigate the migration of 1,4-dioxane. These wells and newly established trigger levels will act as an early warning system by monitoring the movement of 1,4-dioxane near the Prohibition Zone boundary and requiring action to prevent the migration of contamination beyond the boundary before it occurs. Gelman also would be required to install multiple new extraction wells in order to significantly increase the mass removal of 1,4-dioxane from the environment. Finally, Gelman would be required to implement two new remediation techniques to increase mass removal of 1,4-dioxane at the Gelman site.

II. Chart of Key Differences

Issue	**4th Amd. Text Location**
Definition of 1,4-dioxane groundwater contamination changed to reflect new, lower cleanup standard (85 ppb to 7.2 ppb)	III.K (Definitions)
Definition of Prohibition Zone (PZ) expanded to cover additional area to account for the reduction in the drinking water cleanup standard	III.Q (Definitions) and Attachment C (map of new PZ)
Definition of 1,4-dioxane soil contamination changed to reflect new, lower cleanup standard (1700 ppb to 500 ppb)	III.W (Definitions)

Removed objective to prevent concentrations of 1,4-dioxane above 2800 ppb (the old groundwater-surface water interface (GSI) criterion) from migrating east of Maple Road, while adding that Gelman must prevent venting of 1,4-dioxane to surface waters in Eastern Area above the new, lower GSI criterion (280 ppb) except in compliance with state law	V.A.1.b (Eastern Area Objectives)
Provides that, generally, PZ boundary may not be expanded unless clear and convincing evidence that expansion necessary (Order of Dismissal provides local units of government (LUGs) with right to participate in this process); previously, expansion required compelling reason	V.A.2.f (Eastern Area Objectives)
Requires installation of additional monitoring wells on northern PZ boundary (called Sentinel Wells) and elsewhere on PZ boundary (PZ Boundary Wells) in order to detect and prevent potential breaches of the PZ boundary before they occur; establishes trigger levels which impose additional obligations on Gelman if exceeded (e.g., increased sampling, installation of additional monitoring wells, and provision of municipal water to potentially impacted wells)	V.A.3.a-d (Eastern Area Objectives); V.A.4-5 (Eastern Area Objectives)
Requires installation of new Rose and Parklake Wells in order to more than double the rate of groundwater that is pumped and treated. Provides the possibility for treated water from the Parklake Well to be discharged to First Sister Lake	V.A.3.e-f (Eastern Area Objectives) V.A.8.g (Eastern Area Objectives)
Requires installation of three additional monitoring wells/clusters in order to further delineate the migration of 1,4-dioxane downgradient of Maple Road	V.A.5.f (Eastern Area Objectives)
Creates a PZ boundary review process to occur every five years to determine whether the boundary of the PZ can be contracted	V.A.6 (Eastern Area Objectives)
Requires Gelman to prevent venting of 1,4-dioxane to surface waters in Western Area above the new, lower GSI criterion (280 ppb), except in compliance with state law	V.B.2 (Western Area Objectives)
Requires installation of six additional monitoring wells/clusters in order to further delineate the migration of 1,4-dioxane in the Western Area	V.B.3.b (Western Area Objectives)
Removes the requirement to prevent expansion of the horizontal extent of groundwater contamination in the Little Lake Area System; removed because this System would now be included within the Western Area for purposes of the Western Area Objectives	V.B
Creates more robust Western Area compliance well verification process to ensure that Western Area objectives are met	V.B.4 (Western Area Objectives)
Removed the requirement to investigate former spray irrigation area on Gelman property in order to ensure meeting objective of preventing 1,4-dioxane from venting to Third Sister Lake in excess of 2800 ppb; removed because this area is now included within the Western Area for purposes of the Western Area Objectives and the investigation has already occurred	N/A

Requires installation of three additional extraction wells in the source area at a combined purge rate of ~75 gallons per minute (gpm), with the potential to install three additional extraction wells if required by EGLE	VI.C.1 (Gelman Property Response Activities)
Requires operation of a phytoremediation system in the source area, which involves planting trees in order to remove 1,4-dioxane via biodegradation and transpiration and extract perched [i.e., not connected to an aquifer] groundwater in the area	VI.C.2 (Gelman Property Response Activities
Requires operation of a heat soil vapor extraction system (HSVE) in the source area in order to reduce the mass of 1,4-dioxane in the soil, and placement of two impervious barriers in order to inhibit water from percolating through the soils (these requirements replace the previous soils system objective and plan); HSVE technology involves heating the soil to cause 1,4-dioxane to better volatilize and then extracting the resulting vapors	VI.C.4 (Gelman Property Response Activities)