STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

ATTORNEY GENERAL FOR THE STATE OF MICHIGAN *ex rel*. MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT,

Plaintiff,

and

THE CITY OF ANN ARBOR, WASHTENAW COUNTY, THE WASHTENAW COUNTY HEALTH DEPARTMENT, WASHTENAW COUNTY HEALTH OFFICER JIMENA LOVELUCK, THE HURON RIVER WATERSHED COUNCIL, AND SCIO TOWNSHIP,

Intervenors,

v

GELMAN SCIENCES, INC., a Michigan Corporation,

Defendant.

Washtenaw Circuit
Court No. 88-34734-CE

Hon. Timothy P. Connors

DEFENDANT GELMAN SCIENCES, INC.'S HEARING BRIEF

____/

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DEFENDANT'S GELMAN SCIENCES, INC'S
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INTRODUCTION

For almost thirty years, pursuant to the 1992 Consent Judgment, as amended, and with this Court's supervision, Gelman Sciences, Inc. ("Gelman") and Plaintiff the Michigan Department of Energy, Great Lakes, and Environment ("EGLE" or the "State") have implemented a cooperatively devised environmental remedy that has protected this community from any unacceptable exposures to the Gelman Site 1,4-dioxane contamination in a manner consistent with State environmental laws. Gelman's remedial efforts, which have garnered national praise, have reduced 1,4-dioxane contaminant concentrations to the point where the Site, while large and complex, is thoroughly understood and the risks fully managed. In other words, the Gelman remediation represents a remedy that is fully protective of the public health and the environment.

Yet in rejecting the latest proposed amendment to the Consent Judgment, this time negotiated over the course of four years with Intervenors representing the local units of government ("LUGs"), various elected officials voiced their belief that "protective is not enough anymore"—namely, that Gelman must be compelled to do more than comply with the requirements of State law. Rather, as one elected official commented, the LUGs appear to think that "Gelman should be doing more." That "more" is not required by State law or by the responsible regulator matters not to the Intervenors; that "more" is not based in or justified by reliable scientific evidence and data is irrelevant. But "more" is what this Court will hear from Intervenors during this evidentiary remedy hearing—demands that Gelman do "more," untethered from any legally required cleanup objective and lacking in any scientific basis or justification.

Gelman was willing to undertake additional response activities beyond those legally or scientifically required in order to achieve the certainty and community buy-in offered by the negotiated global settlement—a resolution package that included settlement agreements and

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releases not before this Court. But with that settlement rejected, science and the law must now determine what is required to provide a protective remedy to address the 1,4-dioxane contamination, not the unreasonable and unrealistic demands of a vocal few. Gelman's proposed Fourth Amended and Restated Consent Judgment attached hereto ("Gelman's Proposed Fourth Amended Consent Judgment")[1] provides such a remedy; no more can or should be required under Michigan law.

I. The Proposed Remedy Hearing is Improper and Should Not Proceed.

Before proceeding to the substance of the legal brief requested by the Court, Gelman must briefly reiterate its objections to the Court's decision to proceed with this evidentiary remedy hearing. Those objections are more fully set forth in Gelman's motion for reconsideration and related pleadings, as well as in its filings before the Michigan Court of Appeals. By submitting this hearing brief and participating in the hearing, Gelman does not waive any of its prior objections to the Court's decision to proceed with this hearing.[2]

A. The Remedy Hearing Was Not Requested by Any Party and is Not Necessary for Entry of a Fourth Consent Judgment.

As a threshold matter, while the Intervenors have eagerly supported this evidentiary hearing, Gelman again notes that no one—not even the Intervenors—requested this hearing. There

[1] For the Court's convenience, Gelman has attached a copy of its Proposed Fourth Amended Consent Judgment (**Exh** 1) and a redline of that proposed document against the August 2020 public version later rejected by the Intervenors (**Exh** 2). The latter contains explanatory comments providing Gelman's position on certain provisions accepted or rejected relative to the August 2020 version.

[2] As the Court is aware, Gelman's good faith participation in the intervention negotiations resulted in a proposed settlement recommended by all of the Intervenors' legal and technical negotiating teams. Gelman did so even though Gelman believed, and continues to believe, that the Court's intervention decision was not supported by law. Gelman will similarly participate in the Court's remedy hearing in good faith even though Gelman vigorously objects to every aspect of the Court's decision to hold the hearing. Gelman must, however, briefly restate its objections to the hearing in order to ensure that its good faith participation is not interpreted as waiving those objections.

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are no matters in dispute between the two parties to the existing Third Amended Consent Judgment (Gelman and EGLE, and collectively, the "Parties"); there is no allegation that Gelman has violated that agreement; and there is no disagreement regarding how to interpret its terms. Further, neither Party has invoked the Third Amended Consent Judgment's exclusive dispute resolution provisions or filed a dispute resolution petition that this Court must resolve. Indeed, no motion nor any other request for relief is currently before this Court. There is literally nothing for this Court to decide and no pending issue that requires a hearing, let alone an evidentiary hearing on a remedy no party has asked the Court to revisit.

Nor does there exist any exigent environmental circumstance that demands that this Court imprudently inject itself into the process of designing a new environmental remedy. EGLE and Gelman continue to enforce and implement the cooperatively crafted environmental remedy set forth in the existing Third Amended Consent Judgment. That agreement continues to provide a fully protective remedy—despite the 10-fold reduction in the state-wide cleanup criteria—*without allowing a single unacceptable exposure*, even when measured by the more restrictive standards.[3] This is not an accident: the Parties worked cooperatively to design a remedy with a margin of safety sufficient to accommodate the reduction in cleanup criteria and still remain protective, and Gelman has also voluntarily implemented a number of significant response activities to address the more restrictive cleanup standards before they even became effective—all without needing judicial intervention or Intervenors' involvement. Intervenors' reliance in their recent filings on the long-ago-rescinded 2016 emergency administrative rule evidences the absence of any current

[3] Gelman connected the one property utilizing a private drinking water well that would be affected by the change in criteria well before the more restrictive standards were adopted.

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environmental concerns. Whatever justification for the Intervenors' intervention the emergency rule might have provided has been long-since repudiated.

B. The Court's Justification for Proceeding Directly to the Remedy Phase is Factually Incorrect, as Gelman Has Not Been Found Liable and Has Meritorious Defenses to Intervenors' As-Yet-Unfiled and Untested Claims.

At the hearing on March 22, 2021, the Court summarily dismissed Gelman's argument that it was improper for the Court to hold a remedy hearing before Gelman had been found liable to Intervenors, finding "… ***[W]e're already in the remedial stage***. We're past all that. ***We're decades beyond litigation of whether or not Gelman polluted the water***." 3/22/2021 Hr. Tr., p 45 (emphasis added). Based on that understanding, the Court decided that it would proceed with this hearing, hear Intervenors' demands, and "make the finding of fact given [the] change of acceptable levels of what the cleanup program will be." *Id.*, p 46. It thus appears that the Court concluded that it was appropriate to proceed directly to the remedy stage because there was a preexisting liability determination in this case against Gelman. But this fundamental assumption is wrong.

Setting aside the obvious issue that Gelman has not been found liable *to the Intervenors* in any capacity, Gelman again notes that it has been found to be not legally responsible for addressing the only significant releases of 1,4-dioxane under state law, because the State authorized the wastewater disposal practices that, unbeknownst to either Gelman or the State, released 1,4-dioxane into the groundwater. 1991 Opinion, pp. 19-27 **(Exh 3)**; *see also* MCL 324.20114 ("The requirements of subsections (1) and (3) [a responsible party's affirmative obligations to address a release] *do not apply to a permitted release* . . ." (emphasis added)); MCL 324.20126a(5) ("A person shall not be required under [Part 201] to undertake response activity for a permitted release."). Thus, Gelman has not been found liable to the State in this case, let alone to the Intervenors, who have yet to even file their complaints.

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And with particular regard to the Intervenors' entitlement to a say in the remedy, as previously briefed, Gelman has meritorious defenses to Intervenors' proposed complaints. In addition to the permitted release defense, if the Intervenors were forced to file their proposed complaints like every other litigant, Gelman would likely avail itself of the opportunity to file a motion for summary disposition of their claims under MCR 2.116(C)(4) (lack of jurisdiction with respect to Intervenors' statutory claims for injunctive relief); MCR 2.116(C)(5) (lack of capacity); and MCR 2.116(C)(7) (statute of limitations and, with respect to the City, previously executed settlement agreement/waiver of claims).

This Court's proffered justification for proceeding directly to the remedy stage of this "litigation" is therefore not valid. Gelman has not been found legally responsible for addressing the groundwater contamination under either Michigan common law or state environmental statutes, let alone found liable *to the Intervenors* in a way that would justify any purported entitlement on the Intervenors' part to demand a particular remedy. Rather, the only legally supportable path forward is to order Intervenors to file their complaints so that the merits of those claims can be litigated.

It follows even more forcefully that Intervenors cannot in this hearing be granted any right to involvement in future implementation of any Court-selected environmental remedy. Only if Intervenors were to successfully litigate their unfiled claims would they be entitled to the rights of actual parties. Further, in the unlikely event Intervenors obtained party status, the scope of their involvement in implementing the remedy would be limited by, and must not conflict with, EGLE's constitutional and statutory role as the environmental regulator. Awarding Intervenors any continuing rights or involvement in the remedy in connection with this hearing would be the equivalent of giving an *amicus curiae* actual party status. The limited "continuing rights" that

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Intervenors would have enjoyed in the context of the now-rejected settlement was in exchange for consideration this Court cannot grant, and cannot be imposed—let alone expanded upon—until after Intervenors successfully litigate the claims set forth in their unfiled complaints.

C. The Court Lacks the Authority to Amend, Modify, or Rewrite the Consent Judgment or to Otherwise Devise an Environmental Remedy.

As discussed at length in Gelman's prior filings, it is an axiomatic principle of law that a "decree by consent cannot, in the absence of fraud or mistake, be set aside by rehearing, or on appeal; nor can it be modified without the consent of the parties." *Horning v Kendrick*, 161 Mich 413, 414; 126 NW 650 (1910) (citations omitted). No such circumstances are present here, and this Court therefore lacks the authority to unilaterally modify the Consent Judgment, to force a settlement on the Parties, or to otherwise fashion an environmental remedy without Gelman's and EGLE's consent.

Moreover, there is nothing pending under the existing Third Amended Consent Judgment for the trial court to rule upon because neither party has petitioned the Court to resolve a dispute that does not exist. And, because Intervenors never commenced any action by filing a complaint—as set forth in MCL 600.1901—this Court's remedy hearing seeks to provide a remedy for claims that have not even been pled, let alone tested on their merits.

For all these reasons, the Court lacks the authority to hold the envisioned hearing or to implement a remedy via a revised Consent Judgment.

D. The Remedy Hearing Does Not Provide a Valid Basis Upon Which the Court Can Make Findings of Fact in Support of Any Consent Judgment Modification, and Denies Gelman Due Process of Law.

This Court has stated that it is the Court's responsibility to be the finder of fact with respect to the appropriate environmental remedy needed to address the cleanup criterion revised in 2016. 11/19/2020 Tr., pp 27, 50; 3/22/2021 Hr. Tr., p 46. This Court, however, cannot make findings of

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fact based on oral argument, which is in turn based on hearsay statements contained in scientific reports that have not been subject to pretrial discovery or motions practice and which have been presented in support of unfiled Intervenor complaints. Admissible evidence must be presented in the context of litigated claims and defenses, *see* MCR 2.111, subject to pretrial discovery and motion practice, *see* MCR 2.302(B); MCR 2.305–2.312, and submitted to cross-examination, *see* MRE 611(c), all in a manner consistent with the Michigan Court Rules and Rules of Evidence. Each of these pre-trial Rules is designed to promote the just, speedy, and economical determination of disputes without infringing upon the parties' substantial rights. And each of these Rules were ignored or overlooked when this Court formulated its remedy hearing, which is akin to a trial yet fails to provide for the disclosure of witnesses or the opportunity to conduct even basic discovery or depositions.

This Court's attempt to bypass entirely the litigation process—absent the participants' agreement to enter into a judicial arbitration, which this assuredly is not—is contrary to the Court Rules and Rules of Evidence, and violates Gelman's right to due process as guaranteed by the Michigan and United States Constitutions.

II. Gelman's Proposed Fourth Amended Consent Judgment is Fully Protective of the Public Health and the Environment and Consistent with State Law.

Assuming *arguendo* that the Court's remedy hearing process is valid—and it is not, for the reasons stated above and in greater detail in Gelman's reconsideration and appeals papers—Gelman's Proposed Fourth Amended Consent Judgment is the appropriate and fully protective remedy that should be entered by the Court. That document builds upon the existing and fully protective remedial regime that has been in place for years; reflects the considered judgment of the responsible State regulator, EGLE; and ensures a remedy that is fully protective of the public health and the environment and consistent with the requirements of State law.

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A. Gelman Has Remediated the 1,4-Dioxane Contamination in Full Compliance with State Law and Will Continue to Do So.

Gelman entered into a Consent Judgment with the State in 1992 setting forth what remedial actions Gelman must take to address the 1,4-dioxane contamination. The Consent Judgment has been amended three times by mutual consent of the Parties thereto (Gelman and EGLE) to address changing cleanup standards—for example, the drinking water standard was 3.0 ppb under the initial Consent Judgment—and the Parties' evolving understanding of the Site.

Gelman's remedial efforts undertaken pursuant to these agreements—and even before entry of the original Consent Judgment—have at all times been in accordance with Part 201, the state statute that governs remediation of environmental contamination, and Gelman's Proposed Fourth Amended Consent Judgment will continue to ensure such compliance. Subsection 20114(1) imposes affirmative remedial obligations on liable owners and operators of property who have knowledge that the property is contaminated.[4] Three of these obligations warrant discussion in connection with the Gelman remediation and Gelman's Proposed Fourth Amended Consent Judgment.

1. Gelman Has and Will Continue to Determine the Nature and the Extent of the Release, as Required by MCL 324.20114(1)(a).

As set forth in the technical report of Gelman's expert, Mr. James Brode, filed herewith, the Gelman site is likely the most thoroughly investigated site in the State. Since 1986, Gelman has undertaken and continues to implement an extensive investigation under State supervision and approval, including the work described below, to define the nature and extent of the 1,4-dioxane contamination:

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[4] As noted above, these obligations do not apply to permitted releases like the ones that caused the 1,4-dioxane contamination at the Gelman Site. MCL 324.20114(4) ("The requirements of subsection (1) . . . do not apply to a permitted release . . ."). Gelman's remedial efforts have nevertheless satisfied the relevant Part 201 obligations.

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- Number of Monitoring Wells: Approximately 250, plus many additional test borings (nearly 400 total wells/borings).

- Number of Groundwater Samples: Approximately 800 annually to track the changes in the plumes.

- Water level measurements: Thousands.

- Estimated feet of core drilled: 44,000 feet of core (8.3 miles of drilling core laid end to end).

- Extended pumping aquifer tests: 8+ tests to determine physical properties of the aquifers.

- In situ hydraulic (slug) tests on numerous well sites to determine physical properties of the aquifers.

- Extensive natural gamma logging of boreholes: 100+ locations to help develop a conceptual understanding of the geology.

- Extensive vertical aquifer sampling through the entire drift sequence to determine the distribution of 1,4-dioxane.

- Extensive on-site soil sampling.

- Full water quality characterizations from multiple wells/aquifers to understand how natural water characteristics may vary in the aquifers.

- Extensive biological testing of the unnamed tributary/Honey Creek.

- Surface water flow monitoring of the unnamed tributary and Honey Creek to determine if potential exposures exist, evaluate GSI potential and trend data over time.

- Surface water monitoring in First, Second, and Third Sister Lakes and other water bodies.

- Plant identification study of the Marshy Area.

- Numerous Analytical/Numerical flow and transport models.

The data from these investigations have been described and analyzed in well over a hundred reports prepared by Gelman and its consultants that date back to 1986. Brode Technical Report pp 8-9.

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More recently, in2015, Gelman voluntarily investigated the portion of the Site located west of Wagner Road (referred to as the "Western Area" in the Third Amended Consent Judgment and in Gelman's Proposed Fourth Amended Consent Judgment) to determine the extent of contamination above the anticipated more restrictive cleanup standard and to confirm that the plume to be defined by the yet-to-be-promulgated cleanup standard was not expanding. Notably, Gelman undertook this voluntary effort over a year *before the draft standard was even announced and almost two years before the intervention negotiations began*.

Finally, as discussed in more detail in Section II.B, below, under Gelman's Proposed Fourth Amended Consent Judgment, Gelman will install nested wells (usually three wells at each location at different depths in the aquifer) at eleven new locations around the perimeter of the plume as defined under the current drinking water standard. 4th Amended CJ §§ V.A.3.a-b; V.B.3.b. Gelman will also continue to implement its Downgradient Investigation by installing nested wells at three locations in the West Park area to refine the Parties' understanding of the plume's migration pathway within the Prohibition Zone. 4th Amended CJ § V.A.5.f. If the data from these wells indicate that further investigation is required to accomplish the relevant objective, Gelman will implement such additional investigation pursuant to EGLE-approved work plans, which are enforceable under the Consent Judgment. 4th Amended CJ §§ V.A.3.a-b; V.B.3.b.

To give a sense of perspective as to the scale of Gelman's present and proposed investigatory efforts, Mr. Brode compared the thoroughness of Gelman's investigation to that which has been undertaken at the West KL Avenue Superfund site in Kalamazoo, Michigan, a site with a dioxane plume slightly larger than the Gelman plume (the "West KL Site"). The West KL Site—often lauded by the community activists promoting federal takeover of the Gelman Site—is a USEPA-led Superfund site where Pfizer Corporation funds necessary environmental work. Mr.

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Brode, who has consulted for Kalamazoo County with respect to the West KL Site, notes that the Gelman site has "more than twice as many [monitoring] wells per acre" as the West KL Site even though the Superfund site relies *entirely* on an institutional control (essentially a "Prohibition Zone" or PZ) with *no active remediation*:

> Unlike the Gelman Site that is being actively remediated, the KL Landfill site relies on an institutional control and ***has no active remediation to address the 1,4-dioxane plume***. We analyzed the ratio between the number of wells at this site and the Gelman Site. At the KL site, there is one monitoring well per 8.36 acres of plume. At Gelman, there is one monitoring well per 3.08 acres of plume, more than twice as many wells per acre.

Brode Technical Report, p 38 (emphasis added). The contrast between the USEPA-led West KL Site and the State-led Gelman Site speaks for itself.

In short, any Intervenor assertion that Gelman has not properly or sufficiently delineated the nature and extent of the 1,4-dioxane contamination at the Site in full compliance with Part 201 is meritless. Nevertheless, Intervenors will undoubtedly demand[5] additional sampling because "more" is always "better" from their clients' point of view. However, such an approach ignores the reality that every response activity leaves a footprint—whether in the form of disruption of a congested residential neighborhood or safety risks associated with operating heavy machinery in such a neighborhood—and fails to consider relevant practical concerns, such as whether the proposed location(s) are accessible and whether there is room for the necessary equipment/machinery. Furthermore, the cost of each response activity must, by statute, be considered when choosing between among remedial alternatives that adequately protect the public health, safety, and welfare, as well as the environment. MCL 324.20120(1)(e).

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[5] Because the Court declined to provide for a staggered briefing schedule, Gelman is left only to guess at what additional demands Intervenors will impose as part of this remedy hearing process.

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Therefore, when considering Intervenors' proposals—which will almost certainly demand that Gelman blanket the already thoroughly-characterized Site with more monitoring wells and borings—it is important for the Court to ask: (i) what additional data will be obtained; (ii) is that data necessary to achieve or confirm compliance with a cleanup objective; and, most importantly, (iii) can Gelman's proposed alternative approach provide data sufficient to achieve the objective/confirm compliance in a safer, less disruptive, and/or less expensive manner. On this last, most important question, and even without knowing specifically what Intervenors will propose, Gelman can confidently state that the answer is "yes." That is because EGLE—the State agency with the expertise and experience to make remedial determinations—*and Intervenors' own experts and legal counsel* already agreed that the additional investigation described in Gelman's Proposed Fourth Amended Consent Judgment at 4th Amended CJ §§ V.A.3.a-b; V.B.3.b., and V.A.5.f. satisfies the Part 201 delineation requirements and provides for ample data to monitor and confirm compliance with the Consent Judgment's remedial objectives.

2. Gelman Has Complied and Will Continue to Comply with the Source Control Requirements of MCL 324.20114(1)(c) and (d), to the Extent Such Requirements Apply.

Section 14 of Part 201 contains two provisions requiring source control. The first, Subsection (1)(c), requires the responsible party to "[i]mmediately stop or prevent an ongoing release at the *source*." (emphasis added). Intervenors' unfiled complaints allege that Gelman violated this obligation by failing to immediately stop or prevent an ongoing release at the "source." *See e.g.*, City Proposed Intervention Complaint ¶¶ 14, 15, 83, 83 (**Exh** 4). Intervenors apparently consider the former Gelman property to be the "source" and Gelman's alleged failure to prevent high concentrations of 1,4-dioxane from migrating from the "Source Property" to be a violation of Section 14's requirement that the responsible party "immediately" stop the release at the "source." *See e.g.*, *id.* ¶¶ 28, 30–34, 38–39, 41 (referring to migration from "Source Property";

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see also id., p. 16 (seeking relief under Part 201 in the form of an order requiring Gelman to take action as necessary to stop the release at the "Source Property"), *Id*.

But Intervenors' attempts to characterize the Gelman Property as a "source" is completely contrary to the use of that term Part 201. Part 201 defines "source" as meaning "any storage, handling, distribution, or processing equipment from which the release originates *and first enters the environment*." MCL 324.20101(zz). Thus, the responsible party is required to stop an ongoing release from a broken pipe, leaking tank, or other equipment "from which the release originates and first enters the environment"—not from the environmental media to which the hazardous substance thereafter comes to be located.[6] Gelman stopped using 1,4-dioxane in May 1986, immediately after the contamination was discovered. There has not been any ongoing release *from* any "storage, handling, distribution or processing equipment" *to* the Gelman Property/environment since that time.[7] Consequently, the Gelman Property clearly is not a "source" as that term is used and defined in Part 201.

Equally clear is that the only other provision in Section 14 related to "source control," Subsection 20114(1)(d), also does not apply to the Gelman Property. That provision only applies to releases occurring after June 5, 1995:

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[6] The City of Ann Arbor landfill has a 1,4-dioxane plume that is migrating offsite. That migration is controlled in a manner similar to the Prohibition Zone, by recording restrictive covenants on affected offsite properties to eliminate drinking water exposures. Oddly, the City does not explain how the Gelman site would be a "source" which demands the prevention of migration under Section 14, yet its landfill would somehow be exempt from its novel interpretation.

[7] The definition of "source" was added to Part 201 in 2014. That definition is consistent with how EGLE has always interpreted the term. *See* "DEQ Training Material for Part 201 Cleanup Criteria" dated January 1998, ("[EGLE] does not interpret Section 14(1)(c) to be applicable to leaching from contaminated soil . . ."), (**Exh** 5); "DEQ Training Material Part 201 Cleanup Criteria Part 213 Risk-Based Screening Levels" dated June 2006, ("Section 20114(1)(c) is not generally applicable to leaching from contaminated soil . . .") (**Exh** 6).

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> Immediately implement measures ***to address, remove, or contain hazardous substances that are released after June 5, 1995*** if those measures are technically practical, are cost effective, and abate an unacceptable risk to the public health, safety, or welfare or the environment. ***At a facility where hazardous substances are released after June 5, 1995***, and those hazardous substances have not affected groundwater but are likely to, groundwater contamination shall be prevented if it can be prevented by measures that are technically practical, cost effective, and abate an unacceptable risk to the public health, safety, or welfare or the environment.

MCL 324.20114(1)(d) (emphasis added). Again, Gelman stopped using 1,4-dioxane in May 1986, well before this provision was added to Part 201 by the 1995 amendments. This requirement regarding "new" releases therefore has no application to the Gelman Property.

Moreover, the rationale for Subsection 20114(1)(d)'s requirement to remove contamination in the soils before it reaches the groundwater—which makes sense at many sites—has no application to the Gelman Site for several reasons. First, by the time the contamination was discovered in 1986, it had already migrated to the groundwater—indeed, that is where the contamination was first discovered. In other words, by the time the contamination was identified, it was too late to achieve the goal later implemented in the 1995 amendments—to prevent contamination in soil from reaching the groundwater. Second, due to the chemical characteristics of 1,4-dioxane, the chemical generally does not readily adhere to, or remain in, the thin layer of unsaturated soils on the Gelman Property. Consequently, and with the exception of certain discrete areas where the geology inhibits precipitation from percolating through the soils, the 1,4-dioxane originally released to the soils "washed out" into the groundwater decades ago. Thus, Intervenors' demands for "source control" are misapplied to the Gelman Site.

Despite this, Gelman has applied source control logic to the unique characteristics of the Gelman Site, by seeking to contain and remove the highest contaminant concentrations in the groundwater beneath and near the Gelman Property before they migrated off-site. These efforts, which continue to this day, include the following:

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- In 1987, well before entry of the original Consent Judgment, Gelman extracted the most highly contaminated groundwater at the site—with concentrations of approximately 220,000 ppb—from the "Redskin" well immediately adjacent to the Gelman Property. Pursuant to a permit issued by USEPA, Gelman injected the groundwater extracted from the Redskin will into its deep disposal well onsite. All told, Gelman removed about 10,000 pounds of 1,4-dioxane from the aquifers using the Redskin well. As recounted in Judge Conlin's 1991 Opinion, Gelman undertook this invaluable source control measure despite the State's objections. 1991 Opinion, pp 15-17.[8]

- In 2001, Gelman sought and obtained a NPDES permit amendment that allowed Gelman to quadruple its groundwater extraction and treatment efforts, despite administrative challenges filed by the City, the County, and Scio Residents for Safe Water (the predecessor to the CARD group). Through the increased capacity provided for by this permit, Gelman was able to install ten new extraction wells to extract "hot spots" of groundwater contamination throughout the Gelman Property.

- Combined, these efforts lowered concentrations beneath the Gelman property from over 200,000 ppb to around 1,000 ppb, except for the few small pockets of higher concentrations that Gelman continues to target through its ongoing onsite pump and treat remediation efforts.

- In 2005, Gelman installed two extraction wells along Wagner Road near the former Gelman facility (the "Wagner Road Wells"). Since that time, Gelman has continuously operated the Wagner Road Wells at a minimum combined extraction rate of 200 gpm. The 2005 capture zone analysis for these wells, the declining concentrations in the extracted groundwater, and downgradient monitoring results all demonstrate that the Wagner Road Wells capture concentrations above the 280 ppb generic groundwater-surface water interface (GSI) criterion before such concentrations migrate into the Prohibition Zone, where the GSI criterion in the most restrictive and relevant cleanup standard. Compliance with the GSI criterion is measured at the point at which the groundwater vents to surface water. The Wagner Road Wells thus have cut off such concentrations from leaving the Gelman Property, which is approximately 2.25 miles upgradient from the nearest compliance point. Brode Technical Report, p 44. Consequently, to the very limited extent the 1,4-dioxane trapped in the few small pockets of soil contamination left on the Gelman Property leaches into the groundwater, these areas are not causing meaningful groundwater contamination to migrate off the property. *Id,* 35, 44.

- Gelman recently continued its efforts to extract onsite "hot spots" by installing TW-24 in an area of relatively high concentrations. Gelman will extract approximately 50 gpm at this location. Brode Technical Report, pp 27.

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[8] In fairness to the State, in 1987 the fields of environmental science and groundwater remediation techniques and practices were in their infancy. This is an often overlooked factor when critics complain about the early pace of the cleanup. As noted in Mr. Brode's Technical Report, Gelman and its team of scientists had to develop from scratch laboratory analytical techniques and remediation technology for 1,4-dioxane. Brode Technical Report, p 8-9.

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In short, even in the absence of a legal requirement to conduct "source control," Gelman has and continues to prevent meaningful levels of groundwater contamination from migrating off the Gelman Property. These efforts will continue under Gelman's Proposed Fourth Amended Consent Judgment.[9]

3. Gelman Has Diligently Pursued Response Activities Necessary to Achieve the Cleanup Criteria Under Part 201 and Will Continue to Do So, Consistent with MCL 324.20114(1)(g).

Gelman's award-winning cleanup efforts are briefly described above and summarized in greater detail in Mr. Brode's Technical Report, pp 10-15. Even a cursory review of those efforts leaves no doubt that Gelman has diligently pursued response activities at the Site. To date, Gelman has treated 8.7 billion gallons of groundwater and removed over 110,000 pounds of 1,4-dioxane from the aquifers. And today, Gelman continues to operate one of the largest pump and treat remediation efforts in the State, extracting and treating approximately 500 gpm from strategic locations. Despite the contamination effectively having a twenty-year "head start" on the remediation efforts, Gelman's decades of response activities have resulted in a Site that, while large and complex, is in a mature and manageable state. *Id.*, pp 12-14. Any allegation that Gelman has not satisfied this obligation to date, or will not continue to do so under Gelman's Proposed Fourth Amended Consent Judgment, ignores reality in favor of a baseless belief that the only protective remedy is a fully restored aquifer. This is not only scientifically implausible, it is also far more than is legally required.

[9] As a result, the additional onsite "source control" measures Gelman was willing to offer in exchange for the additional consideration provided by the negotiated global settlement Intervenors rejected, are not needed to prevent meaningful concentrations of 1,4-dioxane from migrating off-site—Gelman is already preventing such migration.

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B. Gelman's Proposed Fourth Amended Consent Judgment Provides a Protective Remedy That Fully Complies with Part 201's Requirements for Such Remedial Actions.

Both the existing Third Amended Consent Judgment and Gelman's Proposed Fourth Amended Consent Judgment provide for two remedial systems, each defined by geography and the presence or absence of an institutional control. The portion of the Site east of Wagner Road, which is encompassed by an institutional control that eliminates the drinking water exposure pathway, is referred to as the "Eastern Area." The area west of Wagner Road where no property or resource use restrictions are currently in place is referred to as the "Western Area." Each Area is subject to cleanup objectives designed to increase the sustainability and effectiveness of the overall remedial program, while protecting the public health, welfare, safety, and the environment in a manner consistent with the requirements of Part 201 and its administrative rules.

Section 18 of Part 201 describes the required elements of an approvable "Remedial Action." MCL 324.20118(1). Not surprisingly, a Remedial Action must be protective of the public health, safety, and welfare, and the environment and consistent with the relevant cleanup criteria. MCL 324.20118(3)(a) and (c). In addition, each Remedial Action must attain the degree of control required by the two administrative rules—R 299.3(5) and R 299.3(6)—"except as otherwise provided in subsections (4) and (5)." MCL 324.20118(3)(b). R 299.3(5) requires the responsible party to prevent the extent of groundwater contamination at levels above the applicable cleanup criterion from expanding once remedial actions to address the aquifer have begun. And R 299.3(6) requires that all remedial actions to address remediation of an aquifer include the removal of hazardous substances, either through active remediation or as a result of naturally occurring biological or chemical processes (e.g., biodegradation). Either or both of these rules can be waived under the conditions set forth in Subsections 20118(4) and (5), which are discussed in the context of the Prohibition Zone below. The objectives and cleanup program set forth in both

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the existing Third Amended Consent Judgment and Gelman's Proposed Fourth Amended Consent Judgment satisfy these requirements.

1. The Eastern Area

a) The Eastern Area Remedy Includes Both Active Pump-and-Treat Remediation and an Institutional Control in Compliance with Part 201.

The Eastern Area employs both active pump and treat remediation and an institutional control (referred to as the "Prohibition Zone") to provide a protective remedy with respect to the groundwater contamination present east of Wagner Road, including the heavily congested residential and commercial area east of Maple Road. Both elements ensure that the Eastern Area remedy is fully compliant with the requirements of Part 201.

(1) Eastern Area Active Remediation

Pursuant to the Third Amended Consent Judgment, and as proposed in Gelman's Proposed Fourth Amended Consent Judgment, 4th Amended CJ, § V.A.3.f, Gelman continuously[10] extracts 200 gpm from two locations in the Eastern Area: the Evergreen Subdivision and at Maple Road. At the Evergreen Subdivision, Gelman extracts a minimum of 100 gpm from extraction well "LB-4" located near the intersection of Dexter Road and Evergreen Street. Attachment 2, Brode Technical Report. Gelman has been extracting groundwater from this location since 1994.

From approximately 1990 to 1992, the portion of the plume in this area migrated from the Gelman Property in a northeasterly direction until it reached the Evergreen Subdivision where, following the natural groundwater flow pattern, it turned and flowed in a easterly direction.[11] *See*

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[10] As used in this brief, "continuously" means 24 hours a day, 7 days a week, and 365 days a year, subject to short-term shutdowns for occasional maintenance activities as set forth in Gelman's EGLE-approved Operation and Maintenance Plan.

[11] The remediation technology needed to prevent this plume expansion had not yet been developed. It was not until 1994 that Gelman was able to install a small treatment unit in the garage of a house

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Attachment 2, Brode Technical Report.[12] The natural groundwater flow pattern is most likely sufficient to keep the plume within the Prohibition Zone institutional control, as discussed in Section II.B.1.b, below. But the LB-4 Well extraction reinforces this natural groundwater flow direction by "pulling" the plume around that corner and in an eastward direction, providing an additional layer of assurance that the plume will remain within the Prohibition Zone. The LB-4 extraction also reduces concentrations within the northern portion of the Prohibition Zone. This further mitigates the already small possibility that natural processes of dispersion and diffusion will cause the plume to "swell" as it migrates east to the point where the 7.2 ppb plume edge could approach the Prohibition Zone boundary. Brode Technical Report, pp 19-20. Indeed, data from the network of monitoring wells located along the edge of the existing Prohibition Zone boundary in the Evergreen Area strongly suggest that the effects of dispersion and diffusion on the plume boundary have reached equilibrium. Contaminant concentration in these wells have been steady over the last five years, remaining between non-detect and 2 ppb. (Exh.7).

Even though the newly-defined plume boundary has stabilized and even though the residual concentrations upgradient of the Evergreen Subdivision are much lower than what has already migrated through the subdivision, Gelman's Proposed Fourth Amended Consent Judgment provides for an additional extraction location in the Rose Street area. Attachment 2, Brode Technical Report. This strategic location will allow Gelman to further reduce the already lower contaminant concentrations before they even enter the Evergreen Subdivision area. This will

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it purchased on the subdivision. Water extracted from the LB location was treated and then reinjected into a deeper portion of the aquifer.

[12] Consequently, it is undisputed that the natural groundwater flow direction in the Evergreen Area is toward the east and not toward the northern Prohibition Zone boundary or the residential wells located well beyond the Prohibition Zone border, and it is certainly not toward the City's municipal water intake in Barton Pond, located over two miles to the north.

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provide further assurance that the naturally occurring processes of dispersion and diffusion will not cause the new plume boundary to expand in any meaningful way. *See* 4th Amended CJ § II.B.1.b(1), below.

Gelman also operates a groundwater extraction system (TW-19 & TW-23) at Maple Road to reduce 1,4-dioxane concentrations before the groundwater flows into the heavily congested area east of Maple Road. This mass removal reduces the concentrations that will eventually reach the surface water, although this effort is almost certainly not needed to achieve compliance with the GSI Compliance Objective. These efforts will continue under Gelman's Proposed Fourth Amended Consent Judgment. 4th Amended CJ, § V.A.3.f.

Pursuant to the above-described active remediation, the current and proposed Eastern Area remedy provides for the active removal of 1,4-dioxane as required by R 299.3(6).

(2) Eastern Area Institutional Control

Like many sites in the State, Gelman relies on an institutional control to "prevent unacceptable risk from exposure to the hazardous substances" to satisfy the prerequisite for waiving the non-expansion requirement of R 299.3(5). MCL 324.20118(5)(d)(ii).[13] This institutional control, along with the Evergreen Subdivision extraction, satisfies the "active remediation" requirement of R 299.3(6), is fully consistent with State law, and ensures the protection of the public health and the environment.

Section 20121(1) of Part 201 provides that "land or resource use restrictions . . . to eliminate a potential exposure pathway"—in this case, the drinking water exposure pathway—may be

[13] Gelman's extensive sampling program has demonstrated that the contaminant concentrations in the aquifer are reducing as the plume migrates through the Prohibition Zone as the result of the naturally occurring process of dilution (and likely natural biodegradation) as required by Section 20118(5)(d). The GSI Consent Judgment Objective ensures that there will be no adverse impact on the environment as a result of the plume's migration to the extent required by Section 20118(5)(d)(i).

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utilized as part of a Remedial Action. MCL 324.20121(1). Under Subsection 20121(8), "[a]n institutional control may be used to impose the land or resource restrictions described in subsection (1)." MCL 324.20121(8). "Institutional controls that may be considered include, but are not limited to, local ordinances . . . that limit or prohibit the use of contaminated groundwater." *Id.*

Objections to the Prohibition Zone are unfounded. In the December, 2004 Opinion and Order Regarding Remediation of the Contamination of the "Unit E" Aquifer (the "Unit E Order"), the Court agreed that the Washtenaw County Rules and Regulations for the Protection of Groundwater (the "County Rules"), "if supplemented with an appropriate order from this Court, meet that statutory requirement" for an institutional control. Unit E Order, p 11 (**Exh** 8). The Court found that the County Rules already effectively prohibited the installation of drinking water wells within the area then serviced by the City's municipal water system, and so the subsequently entered May 17, 2005 Order Prohibiting Groundwater Use (the "PZ Order") thus only needed to fill in few administrative gaps in the County Rules—for example, by identifying the specific area that would be covered by the judicial institutional control, including a buffer zone—to establish a reliable institutional control consistent with Part 201 (**Exh** 9). The PZ Order's most substantive requirement was to mandate that Gelman provide, at its expense, connection to municipal water to any properties serviced by existing private drinking water wells (i.e., wells that had been installed before the municipal water system was established/extended).[14] Thus, although Intervenors may claim that the fifteen-year-old PZ Order imposes significant restrictions and burdens on property

[14] No such water connections were required because all properties in the 2005 Prohibition Zone area were serviced by the City's municipal water system.

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owners within the Prohibition Zone by limiting their ability to use the groundwater, those restrictions in fact already existed under the County Rules.[15]

Furthermore, whatever the City's initial objections to the establishment of the Prohibition Zone and contrary to any efforts to undermine that institutional control at present, the City agreed to cooperate with Gelman's implementation of the institutional control-based cleanup under the Unit E Order. November 2006 City Release of Claims and Settlement Agreement, Section IX.G, (**Exh** 4). The State also ratified the approach in 2011, when the State and Gelman stipulated to entry of the Third Amended Consent Judgment and the incorporation of the PZ Order into that agreement. March 9, 2011 Stipulated Order Amending Previous Remediation Orders, ¶2 (**Exh** 11). And of course, Intervenors' negotiating teams each recommended to their clients that they accept the August 2020 proposed Fourth Amended Consent Judgment, which included the same Prohibition Zone and related requirements as does Gelman's Proposed Fourth Amended Consent Judgment. *See* Section II, below.[16]

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[15] Notably, the City of Ann Arbor addresses the offsite migration of the 1,4-dioxane plume associated with the City landfill in a manner similar to the Prohibition Zone, by recording restrictive covenants on affected offsite properties to eliminate drinking water exposures. In so doing, the City acknowledged that such restrictions are a "common precautionary approach" and that as a practical matter such restrictions "do[] not impose a substantive change on the use of the property because Ann Arbor City Code prohibits the installation and use of wells for drinking water purposes and requires parcels within the city to connect to the City's water supply." 2014 Resolution # 14-1557 (**Exh** 10).

[16] It should also be noted that, although Gelman based its 2004 request for waiver of the non-expansion requirement on Subsection 20118(5)(d) and the establishment of the Prohibition Zone, waiver of that requirement would now also likely be justified even in the absence of an institutional control under Subsections 20118(5)(a) (technically impractical) and (b) (attainment of the equivalent standard of performance within a reasonable period of time) due to the continued migration of the plume over nearly two decades and the adoption of the 7.2 ppb standard, a more restrictive drinking water criterion. MCL 324.20118(5)(a) and (b).

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b) The Eastern Area Cleanup Objectives and Related Requirements Ensure a Protective Remedy.

As the foregoing makes clear, the Eastern Area remedy satisfies Part 201's active remediation requirement and the conditions for allowing the continued migration of the plume within the Prohibition Zone, where the drinking water exposure pathway is reliably eliminated. The Eastern Area cleanup objectives and the related requirements set forth in Gelman's Proposed Fourth Amended Consent Judgment at 4th Amended CJ § V.A.1 ensure that the groundwater contamination remains within the Prohibition Zone as it migrates east until it vents at safe levels into the Huron River.[17]

Gelman's Proposed Fourth Amended Consent Judgment fully incorporates the more restrictive 7.2 ppb drinking water criterion, as well as the more restrictive generic "groundwater-surface water interface" criterion of 280 ppb. 4th Amended CJ § III. J and K. The Eastern Area remedial systems and the related monitoring are designed to achieve and confirm compliance with the two Eastern Area cleanup objectives that are based on these criteria:

A. Prohibition Zone Containment Objective. Gelman "shall prevent Groundwater Contamination [now defined as 1,4-dioxane concentrations above 7.2 ppb] . . . from migrating beyond the boundaries of the Prohibition Zone . . . ."

B. Groundwater-Surface Water Interface Objective. Because the Prohibition Zone eliminates the drinking water exposure pathway, the most restrictive Part 201 generic cleanup criterion relevant to the Eastern Area is the Generic GSI Cleanup Criterion of 280 ppb. This objective requires Gelman to "prevent 1,4-dioxane from venting into surface waters in the Eastern Area at concentrations above the Generic GSI Cleanup Criterion, except in compliance with Part 201, including MCL 324.20120e ("Groundwater-Surface Water Interface Objective" for the Eastern Area)."[18]

[17] The City's Waste Water Treatment Plant also discharges to Huron River a little further downstream from the area the plume will vent into the river.

[18] The generic GSI criterion determines what areas Gelman must investigate to determine whether the GSI pathway is relevant. GSI compliance, however, can be accomplished by a variety of statutorily authorized methods that do not require preventing concentrations above 280 ppb from venting into surface water. Most relevant here, it the availability of a mixing zone-based GSI

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4th Amended CJ § V.A.1.

Moreover, Gelman's Proposed Fourth Amended Consent Judgment includes numerous additional response activities, including further mass removal, to ensure compliance with these objectives and a protective remedy. These response activities include the following measures described below.

(1) Additional Groundwater Extraction Location in Evergreen Subdivision

Gelman and EGLE previously agreed—well before the Intervenors' involvement—that adding an additional extraction location in the Rose Street area (see Attachment 2, Brode Technical Report) would aid in lowering contaminant concentrations entering the Evergreen Subdivision area and limiting the effect of dispersion and diffusion on the soon to be revised plume boundary. This additional extraction location is referred to as the "Rose Well." 4th Amended CJ § V.A.3.e. The extraction at this area is expected to remove an additional 500 to 1000 pounds of 1,4-dioxane during the first two years of operation.

The Rose Well is proposed in an area where relatively high concentrations were historically present, although the concentrations are well below those that safely migrated past that location in years prior.[19] The installation of the Rose Well was delayed by the four years of failed negotiations with the Intervenors. Data gathered more recently from the monitoring wells along the Prohibition

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criteria. MCL 324.20120e(1)(c) ("[A] person may demonstrate compliance with [Part 201's GSI requirements] by meeting any of the following, singly or in combination . . . Mixing zone-based GSI criteria established under the part, which are consistent with part 31 . . .") Mixing zone-based GSI criteria is calculated by EGLE based on well-established scientific methods and principles.

[19] This is further evidence that the effects of dispersion and diffusion have very likely already caused the plume to "swell" as far north as it will likely go. Certainly, given the much higher concentrations that have migrated through the Evergreen Subdivision, there is no justification for additional mass removal further upgradient to remove even lower concentrations than are present in the Rose Well area. *See* Section III, below; Brode Technical Report, pp 29-32.

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Zone boundary indicate that a steady-state has been reached well below the 7.2 ppb standard, even without the installation of the Rose Well. This strongly suggests that extraction at this location is not necessary. Nonetheless, Gelman's Proposed Fourth Amended Consent Judgment still includes this additional extraction location.

(2) Prohibition Zone Expansion and Boundary Reevaluation Process

As a natural and necessary consequence of the more restrictive 7.2 ppb drinking water criterion, the Prohibition Zone in the Eastern Area has been expanded under Gelman's Proposed Fourth Amended Consent Judgment so that this institutional control can reliably prevent exposure to the newly defined plume with its expanded footprint. *See* Attachment 2, Brode Technical Report. Expanding the Prohibition Zone is necessary, not because the plume has moved or migrated in an unexpected direction, but rather because now that the plume is defined by a more restrictive cleanup criterion it is, by definition, somewhat larger. Significantly, the Prohibition Zone will only be expanded to areas already served by municipal water (rather than private drinking water wells).

The expansion will reestablish the "buffer zone," i.e., the space between the plume boundary and the Prohibition Zone boundary. This buffer zone, in turn, enables the early warning "trigger process" established by Gelman's Proposed Fourth Amended Consent Judgment, discussed further in Section II.B.1.b.5, below. This trigger process provides EGLE and Gelman with advance notice of any potential for the plume to expand beyond the Prohibition Zone boundaries so that the Parties can take action to prevent or mitigate it.

In addition, for the first time, the Fourth Amended Consent Judgment provides a process for contracting the Prohibition Zone in the future if the data demonstrate that it can be done in a protective manner. 4th Amended CJ § V.A.6. Gelman and EGLE will periodically review the

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available data to determine if there are any portions of the Prohibition Zone that can be contracted while still maintaining a buffer zone between the plume and the Prohibition Zone boundary. *Id*. Consequently, any concerns regarding the appropriateness of the Prohibition Zone boundary in Gelman's Proposed Fourth Amended Consent Judgment are misplaced—there will be an opportunity for Gelman and EGLE to reevaluate the boundary on a regular and continuing basis and determine whether to contract it as appropriate based on data that further refines the plume's migration pathway within the Prohibition Zone. In any event, the proposed Prohibition Zone does not extend to any areas where private drinking water wells are present, and so any effort to contract the protected area at this time would be both arbitrary and unnecessary.

(3) Additional Plume Delineation Wells

Under the Fourth Amended Consent Judgment, Gelman will significantly expand an already robust monitoring well network to further ensure that no unacceptable future exposures occur. Gelman will install nested wells at five new locations (up to fifteen new wells, with three at each location) along northern and southern boundaries of the Prohibition Zone. 4th Amended CJ § V.A.3.a and b. Because of the sensitivity regarding the northern boundary of the plume, the number of monitoring wells located along the northern edge of the plume will be doubled, with the installation of nine additional wells at three key locations along the northern boundary of the former Prohibition Zone boundary, well inside the new boundary established by the Fourth Amended Consent Judgment. 4th Amended CJ § V.A.5.f; Attachment 1, Brode Technical Report, pp 21. These wells, along with the nine existing monitoring wells, will be located between the plume and the Prohibition Zone's northern boundary. The number and locations of each of these wells, as included in Gelman's Proposed Fourth Amended Consent Judgment, are the same as those included in the Proposed Fourth Amended Consent Judgment approved by the Intervenors'

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technical experts and legal counsel as being sufficient to fully delineate the 7.2 ppb plume and provide adequate data to confirm that the cleanup objectives are being met.

This "picket fence" of monitoring wells inside the Prohibition Zone boundary will alert Gelman and EGLE if the plume is at risk of expanding, well before any such expansion could reach the Prohibition Zone's northern boundary and in time for Gelman to take necessary action to prevent expansion beyond the boundary from occurring. *See* Section II.B.1.b.5, below.

(4) Downgradient Investigation

The Downgradient Investigation is an ongoing and iterative process designed to monitor the plume as it migrates east within the Prohibition Zone to the Huron River to ensure that the plume vents to the river within the Prohibition Zone boundaries at safe levels (very likely below even the generic GSI criterion of 280 ppb). Gelman's Proposed Fourth Amended Consent Judgment describes in detail the next phase of the investigation, which includes Gelman's installation of seven new monitoring wells (geology dependent) at three key locations in the general vicinity of West Park. 4th CJ § V.A.5.f; Attachment 1, Brode Technical Report, pp 23-24.[20] This phase of the investigation will provide a much better understanding of the fate of any groundwater contamination present in the shallower zones in the West Park area. The data from these wells will also continue to refine the understanding of the plume's pathway as it migrates east within the Prohibition Zone and the effect the Allen Drain may be having on the migration pathway of the plume.

[20] Typically, the number of wells and well locations are included in a work plan submitted to EGLE for review and approval rather than in the Consent Judgment itself, to allow the Parties to readily adjust the approved work plan as needed to accommodate new facts/data. Here, and in the case of the additional plume delineation wells Gelman and EGLE have agreed to insert these details in the Consent Judgment, but that practice should not be repeated because it inhibits the ability of the Parties to adjust the investigations in response to new data.

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In parallel, and independent of the Consent Judgment process, Gelman is investigating whether (and if so, the degree to which) the plume is infiltrating into the Allen Drain. Gelman has proposed a monitoring and sampling work plan for this investigation to EGLE and the County Water Resources Commissioner (**Exh** 12). This investigation is being conducted independent of the Consent Judgment process because the legal requirements associated with such potential infiltration arise primarily under Part 31 of NREPA, not Part 201.[21] Under Part 201, the water within the Allen Drain is not surface water. MCL 324.20120e(23)(g)(iii). Consequently, the GSI compliance point under Part 201—as well as for the proposed "Groundwater-Surface Water Interface" Consent Judgment objective—is not where the plume leaks into the drain, but rather the where Allen Drain discharges to the Huron River. MCL 324.20120e(19)(b)(iv).[22] Under Gelman's Proposed Fourth Amended Consent Judgment, Gelman will ensure that the 1,4-dioxane discharges to the Huron River at safe levels, whether the plume reaches the river by venting from the groundwater or via the Allen Drain. There is no legal basis for requiring Gelman to investigate or achieve GSI compliance within the Drain itself.

(5) Contingency Planning Trigger Process and Response Actions

In response to community demands for greater contingency planning, Gelman and EGLE developed the detailed and protective contingency structure that includes contingency planning and a multi-stage monitoring and response activity process for the Eastern Area. 4th Amended CJ

[21] As a result, EGLE's Water Division is supervising the Allen Creek investigation rather than the Remediation and Redevelopment Division that oversees Gelman's work under the Consent Judgment.

[22] A mixing zone-based GSI criterion would also be available to demonstrate GSI compliance at the Allen Drain outfall. MCL 324.20120e(19)(b)(ii).

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§ V.A.5.a-d. This structure will help ensure that the plume does not expand beyond the Prohibition Zone boundary and that no unacceptable exposures to the plume occur.

The initial phase of the Eastern Area trigger process is Gelman's preparation of a "Municipal Water Connection Contingency Plan" ("MWCCP"). The MWCCP will identify the steps necessary to bring municipal water to the few areas near the Prohibition Zone where private water supply wells are in use and determine the time required for each step. 4th Amended CJ §§ III.L. and V.A.2.j.

The Contingency Planning process built into the Gelman's Proposed Fourth Amended Consent Judgment is intended to detect *and prevent* expansion of the plume well before it reaches the edge of the Prohibition Zone, let alone any drinking water wells. The nine new monitoring wells that will be installed up to 1,200 feet south of the expanded Prohibition Zone's northern boundary, along with the existing nine monitoring wells, will provide an "early warning" line of wells (referred to as "PZ Sentinel Wells"). The PZ Sentinel wells provide a "picket fence" of monitoring wells located on the northern boundary of existing Prohibition Zone (i.e., the one based on 85 ppb), well inside of the new Prohibition Zone Boundary. If monitoring of the PZ Sentinel Wells indicates that the applicable trigger has been exceeded in any PZ Sentinel Well, Gelman will install additional well clusters along the expanded Prohibition Zone boundary (referred to as "PZ Boundary Wells") and undertake a series of additional response activities to evaluate whether there is a reasonable likelihood that the plume could migrate beyond the expanded Prohibition Zone boundary. 4th Amended CJ § V.A.5.a.1. If such a possibility exists, Gelman will undertake additional response activities, including developing a "Remedial Contingency Plan" that identifies potential response actions that could be implemented to prevent prohibited expansion before it reaches the Prohibition Zone boundary. 4th Amended CJ § V.A.5.a.ii.. In parallel, Gelman will

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also initiate the portion of the MWCCP that would need to be implemented to ensure that municipal water could be extended to properties utilizing private water supply wells before any unacceptable exposure occurs. 4th Amended CJ § V.A.5.a.ii(C).

Additional response actions are triggered if 4.6 ppb is confirmed to be present in any Prohibition Zone Boundary wells that have been installed, before the plume above 7.2 ppb ever reaches the expanded Prohibition Zone boundary. 4th Amended CJ § V.A.5.b. These steps include residential well sampling (and the provision of bottled water to any property serviced by a well with concentrations above 3.0 ppb), 4th Amended CJ § V.A.5.b.i; V.A.5.d, further implementation of the MWCCP to address any impact to residential well sources, 4th Amended CJ § V.A.5.b.ii, and implementation of the previously developed Remedial Contingency Plan to prevent the plume from ever reaching the Prohibition Zone boundary, 4th Amended CJ § V.A.5.b.iii. In the unlikely event Gelman is unable to halt the plume expansion and 7.2 ppb concentrations reach a PZ Boundary well, Gelman will be required to implement the remaining steps necessary to provide municipal water to potentially impacted properties, connect them if required by EGLE or requested by the property owner, and continue implement the response actions needed to pull the plume back within the Prohibition Zone boundary unless the strictly circumscribed conditions for expanding the Prohibition Zone exist. 4th Amended CJ § V.A.5.c. Gelman refers the Court to the flowcharts attached as Attachment 3, Brode Technical Report, which provide additional detail regarding the Trigger and Contingency Planning process incorporated into Gelman's Proposed Fourth Amended Consent Judgment.

As Gelman, EGLE, and Intervenors' negotiating teams agreed, the trigger concentrations and monitoring locations provide ample time to implement the necessary response actions to prevent prohibited expansion of the plume well before it could breach the Prohibition Zone

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boundary or threatened any drinking water wells. However, based on statements made by Intervenors' elected officials, it is likely that Intervenors will seek both to reduce the trigger levels and, possibly require Gelman to use a laboratory analytical method that has a lower detection limit than the 1.0 ppb detection limit provided by the USEPA-approved analytical method Gelman and the State use in their labs. Neither of these steps is legally required or appropriate.

There are no data that suggest that groundwater is flowing in a direction that could carry the plume through "advective flow" toward the Prohibition Zone boundary or any drinking water wells located beyond the boundary. Rather, if the plume is going to expand, it will be through the comparatively slow processes of diffusion and dispersion. Brode Technical Report, pp 19-20. The expansion that occurs because of these processes is slow and continued expansion is not inevitable. For instance, if a trigger concentration of 2.0 ppb had been chosen for the existing PZ Sentinel Wells located along the existing Prohibition Zone boundary in the Evergreen Subdivision area, the need to implement disruptive response activities would have been triggered years ago even though the concentrations present in those wells have reached equilibrium in the 2 ppb range, well below the 7.2 ppb cleanup standard (**Exh** 7). Thus the idea that a lower trigger concentration—let alone a sub-1.0 ppb detection limit—would provide *needed* earlier warning of prohibited plume expansion is misguided. Selecting lower trigger levels would only lead to unnecessary and disruptive response activities and, just as importantly, unnecessary concern in the community.

2. The Western Area

a) The Western Area Remedy Includes Active Pump-and-Treat Remediation as Necessary to Prevent Expansion of the Western Area Plume in Compliance with Part 201.

The Western Area's Part 201 compliance analysis is straight-forward. Gelman is actively remediating the aquifer west of Wagner Road by extracting and treating approximately 300 gpm of groundwater on a continuous basis from 7extraction wells on or near the Gelman Property and

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the two Wagner Road Wells. Gelman will soon begin operating TW-24 at a rate of 50 gpm to address an area of relatively high concentrations. Active, naturally occurring, remediation of the Western Area aquifer is also taking place in the Western Area as groundwater with low levels of 1,4-dioxane vents to Honey Creek well below the 280 ppb generic GSI criterion. In particular, a number of artesian wells/springs near Park Road safely vent approximately 60 gpm to the creek with concentrations in the 10 ppb range.[23] Gelman may not terminate active remediation in the Western Area unless it puts in place a reliable institutional control/restrictive covenants that effectively eliminates the drinking water exposure pathway with respect to the Western Area plume. Gelman's Proposed Fourth Amended Consent Judgment 4th Amended CJ §§ V.B.1; V.B.3.a. Thus, Gelman's Proposed Fourth Amended Consent Judgment satisfies the non-expansion and active remediation requirements of R 299.3(5) and (6), respectively.

The Western Area Non-Expansion cleanup objective requires Gelman to actively remediate the groundwater contamination as necessary to prevent the Western Area plume from expanding. In reality, the Western Area plume boundary has been stable for decades, due to several factors. First and foremost is Gelman's extensive active remediation of the aquifer. Second, either as a result of these efforts or based on how the portion of the plume in the Park Road/Little Lake area was formed, there is no continuing source of contaminant from the Gelman Property to recharge this area of the plume. Consequently, contaminant concentrations in this portion of the plume—which were always several orders of magnitude lower than those initially observed onsite—have steadily decayed throughout the 30 years of monitoring without any expansion of the plume boundary. Gelman's 2015 investigation and continued monitoring of those

[23] The 1992 Consent Judgment expressly provided that these artesian wells could be included as part of an approvable remediation plan.

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monitoring wells confirm that the leading edge of the plume in this area has not migrated past the main body of Honey Creek, into which the remaining low levels of 1,4-dioxane vent.

Closer to the Gelman Property, although the groundwater contamination historically spread in several directions in the shallowest aquifer, it also migrated downward to the intermediate and deeper aquifers. The groundwater flow direction in these deeper aquifers is uniformly to the east. Consequently, the plume boundaries in the onsite area have reached equilibrium and ceased flowing in any other direction than into the Eastern Area where the Prohibition Zone eliminates the drinking water pathway.

b) Gelman's Proposed Fourth Amended Consent Judgment Includes Significant Additional Response Activities to Ensure the Western Area Objectives are met.

In addition to the above response actions, Gelman will install new monitoring wells at six new locations in the portion of the site west of Wagner Road, in Scio Township. 4th Amended CJ § V.B.3.b. At most of these locations, Gelman will install three "nested" wells at shallow, intermediate, and deep depths. Gelman and EGLE will use the data from these wells to identify a new compliance well network consisting of monitoring wells around the perimeter of the plume, between the plume boundary and any drinking water wells. 4th Amended CJ § V.B.3.c. The new wells and the compliance well network are designed to allow Gelman and EGLE to ensure that the plume, as defined by the new more restrictive 7.2 ppb criterion, is not expanding in any direction so that it will not threaten any drinking water wells. If prohibited expansion does occur, the compliance well network will provide Gelman and EGLE with sufficient notice to implement any response actions needed to prevent the plume from threatening any drinking water wells.

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III. The Global Settlement Rejected by Intervenors Included Response Activities That Go Beyond What is Legally or Scientifically Required Because That Settlement Included Consideration That is Not Within the Court's Power to Order.

Foremost among the reasons Gelman opposed Intervenors' intervention into this decades-old State environmental enforcement action was the concern that Intervenors' often conflicting demands would ultimately prevent entry of a Consent Judgment—like the one Gelman had already negotiated with EGLE and was ready to enter into in 2017. Despite this concern, Gelman negotiated in good faith with the Intervenors over the course of nearly four years to accommodate their many and conflicting demands. The global settlement reached through these negotiations and the extensive remedial efforts to which Gelman committed in order to achieve it are incontrovertible evidence of Gelman's good faith. Unfortunately, Gelman's original concerns were fully realized when the Intervenors' elected officials were unable to rise above local politics and, bowing to a small band of outspoken opponents of any State-led cleanup, rejected the global settlement their negotiating team of technical experts and legal counsel recommended and instead petitioned the Governor to seek a federal takeover of the Site.[24]

This Court responded to the Intervenors' repudiation of its well-intended, if ill-conceived, effort to include Intervenors in the negotiating process by improperly scheduling this evidentiary hearing. Seizing on this opportunity, Intervenors seek to use against Gelman its prior good faith offers and the lengths it was willing to go to achieve a lasting global settlement. Gelman expects that Intervenors will take the position that the proposed Fourth Amended Consent Judgment they rejected should nevertheless serve as the *baseline* to which additional response activities—including activities Intervenors previously agreed were not necessary—should be added. Indeed,

[24] This is precisely the predictable delay-causing consequence of giving local groups control over remedial decisions that both State and federal environmental laws avoid by precluding such local challenges—the very laws that this Court overlooked when it granted intervention.

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the Court may have had the same vision when it set this evidentiary hearing, assuming that its job as the self-appointed remedial fact-finder would consist solely of evaluating whether Intervenors' additional "asks" on top of the now-rejected proposed Fourth Amended Consent Judgment are warranted. But that is not the case.

The rejected Fourth Amended Consent Judgment included environmental response actions that go beyond what EGLE had previously agreed was necessary to provide a protective remedy, and beyond what is required by the plain terms of state law. As explained in more detail in Mr. Brode's Report, the Parklake extraction and the onsite "source control" measures included in the rejected settlement were never legally required, nor necessary to provide a protective remedy. Brode Technical Report, pp 30-35. Gelman agreed to such response actions because the prospect of a truly global settlement offered Gelman—and the community—much more than just an agreed-upon environmental remedy. Specifically, Gelman was willing to undertake the extensive environmental response actions specified in the now-rejected Fourth Amended Consent Judgment because the global settlement included additional consideration for Gelman's commitments.

This additional consideration was set forth in the separate Settlement Agreements and Releases with each of the LUGs. The Settlement Agreements provided, among other things, that the LUGs would dismiss their intervention, release their claims against Gelman (with limited exceptions), provide property access to key locations, and cooperate with Gelman's cleanup efforts going forward. The Settlement Agreements also provided Gelman with a degree of certainty that the LUGs would not, having agreed to the remedy set forth in the proposed Fourth Consent Judgment, turn around and seek a different, perhaps inconsistent, remedy from USEPA—i.e., that

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Intervenors would abide by the agreed-upon deal and not undercut the community's perception of the remedy's protectiveness by seeking a "better" solution elsewhere.[25]

These commitments from the LUGs were vitally important to Gelman. They provided certainty, offered the possibility of a resolution with the local community's political leaders, and included the kind of cooperative efforts to address the groundwater contamination that would foster community confidence in the cleanup's effectiveness. In short, Gelman was willing to commit to do far more than what was necessary to responsibly address the groundwater contamination in order to achieve the kind of holistic resolution Gelman believes this Court envisioned when it allowed the intervention.

At this stage in the proceedings, however, this Court cannot order the LUGs to enter into the Settlement Agreements or provide Gelman the consideration upon which the additional response activities included in the rejected Fourth Amended Consent Judgment were premised. Certainly, this Court cannot order Intervenors to abandon their pursuit of a USEPA takeover of the Site—the State has already bowed to Intervenors' political pressure and requested that USEPA proceed with the Superfund listing process (**Exh**. 13). Rather, at this point, if this evidentiary hearing proceeds (and Gelman maintains that it should not, for the reasons stated in Section I, above), the decision as to what is needed to provide a protective remedy that satisfies the relevant legal requirements must be based on science and the law.

[25] Many in the community have misinterpreted this last provision as indicating that Gelman is afraid of USEPA and that Gelman's alleged fear is a reason for seeking a federal takeover of the site. Rather, what Gelman seeks to avoid is implementing a remedy in the context of this State court litigation only to have another authority require a new remedy that is inconsistent with the one Gelman has already started implementing.

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Similarly, the fact that Gelman and EGLE agreed to provide certain "continuing rights" to Intervenors to allow them a limited role in future implementation of the remedy in exchange for the above-described consideration provides no basis for awarding Intervenors any such rights in this hearing. Intervenors cannot be awarded by this Court the rights of actual parties unless and until they file their complaints and successfully litigate their claims.

As set forth above in Section II, Gelman's Proposed Fourth Amended Consent Judgment provides for a protective remedy that fully complies with State law and is founded on ample scientific data. This Court can be confident of that conclusion because Gelman's proposal is essentially the same document Intervenors' technical experts and legal counsel recommended to their clients. The only substantive difference is the removal several of the remedial "add-ons" Gelman was willing to implement in order to achieve a global settlement that would benefit both Gelman and the community—the same add-ons that are not required by law and which were the subject to the most public criticism. Stated another way, the Court can rest assured that Gelman's Proposed Fourth Amended Consent Judgment will provide a fully protective remedy because it is a significantly enhanced version of what EGLE—the State agency designated by State Constitution and statute as the expert agency responsible for making such determinations—agreed was protective in 2017.

CONCLUSION

For almost 30 years, Gelman has implemented an environmental remedy that has protected this community from any unacceptable exposures to the 1,4-dioxane contamination in a manner consistent with State environmental laws. Gelman's Proposed Fourth Amended Consent Judgment continues to provide for such a protective remedy that fully satisfies the obligations and requirements of Michigan law. Anything beyond the obligations and response activities contained in Gelman's Proposed Fourth

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Amended Consent Judgment is not required by law and is not necessary to protect human health or the environment. The Court should allow Gelman and EGLE to continue implementing the remedial program in a manner consistent with Part 201 under a mutual, bilateral agreement.

Respectfully submitted,

ZAUSMER, P.C.

/s/ Michael L. Caldwell

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Dated: April 30, 2021

PROOF OF SERVICE

The undersigned certifies that a copy of the foregoing instrument was served upon all parties to the above cause to each of the attorneys of record herein at their respective addresses as directed on the pleadings on April 30, 2021 by:

☒ E-FILE ☐ US MAIL ☐ HAND DELIVERY ☐ UPS
☐ FEDERAL EXPRESS ☐ OTHER

/s/ Kathy Collings

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STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

ATTORNEY GENERAL FOR THE STATE OF MICHIGAN *ex rel.* MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY,

Plaintiffs,

-v-

File No. 88-34734-CE
Honorable Timothy P. Connors

GELMAN SCIENCES INC.,
a Michigan Corporation,

Defendant.

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FOURTH AMENDED AND RESTATED CONSENT JUDGMENT

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The Parties enter this Fourth Amended and Restated Consent Judgment ("Consent Judgment" or "Fourth Amended Consent Judgment") in recognition of, and with the intention of, furtherance of the public interest by (1) addressing environmental concerns raised in Plaintiffs' Complaint; (2) expediting Remedial Action at the Site; and (3) avoiding further litigation concerning matters covered by this Consent Judgment. Among other things, the Parties enter this Consent Judgment to reflect EGLE's revision of the generic state-wide residential and non-residential generic drinking water cleanup criteria for 1,4-dioxane in groundwater to 7.2 micrograms per liter ("ug/L") and 350 ug/L, respectively, and of the generic groundwater-surface water interface cleanup criterion for 1,4-dioxane in groundwater to 280 ug/L. The Parties agree to be bound by the terms of this Consent Judgment and stipulate to its entry by the Court.

The Parties recognize that this Consent Judgment is a compromise of disputed claims. By entering into this Consent Judgment, Defendant does not admit any of the allegations of the Complaint, does not admit any fault or liability under any statutory or common law, and does not waive any rights, claims, or defenses with respect to any person, including the State of Michigan, its agencies, and employees, except as otherwise provided herein. By entering into this Consent Judgment, Plaintiffs do not admit the validity or factual basis of any of the defenses asserted by Defendant, do not admit the validity of any factual or legal determinations previously made by the Court in this matter, and do not waive any rights with respect to any person, including Defendant, except as otherwise provided herein. The Parties agree, and the Court by entering this Consent Judgment finds, that the terms and conditions of the Consent Judgment are reasonable, adequately resolve the environmental issues covered by the Consent Judgment, and properly protect the public interest.

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NOW, THEREFORE, upon the consent of the Parties, by their attorneys, it is hereby ORDERED and ADJUDGED:

I. JURISDICTION

A. This Court has jurisdiction over the subject matter of this action. This Court also has personal jurisdiction over the Defendant.

B. This Court shall retain jurisdiction over the Parties and the subject matter of this action to enforce this Consent Judgment and to resolve disputes arising under the Consent Judgment.

II. PARTIES BOUND

This Consent Judgment applies to, is binding upon, and inures to the benefit of Plaintiffs, Defendant, and their successors and assigns.

III. DEFINITIONS

Whenever the terms listed below are used in this Consent Judgment or the Attachments that are appended hereto, the following definitions shall apply:

A. "Consent Judgment" or ""Fourth Amended Consent Judgment" shall mean this Fourth Amended and Restated Consent Judgment and all Attachments appended hereto. All Attachments to this Consent Judgment are incorporated herein and made enforceable parts of this Consent Judgment.

B. "Day" shall mean a calendar day unless expressly stated to be a working day. "Working Day" shall mean a day other than a Saturday, Sunday, or a State legal holiday. In computing any period of time under this Consent Judgment, where the last day would fall on a Saturday, Sunday, or State legal holiday, the period shall run until the end of the next working day.

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C. "Defendant" shall mean Gelman Sciences Inc.

D. "1,4-dioxane" shall mean 1,4-dioxane released to or migrating from the Gelman Property. This term as it is used in this Consent Judgment shall not include any 1,4-dioxane that Defendant establishes by a preponderance of the evidence to have originated from a release for which Defendant is not legally responsible, except to the extent that such 1,4-dioxane is commingled with 1,4-dioxane released to or migrating from the Gelman Property. Nothing in this Consent Judgment shall preclude Defendant's right to seek contribution or cost recovery from other parties responsible for such commingled 1,4-dioxane.

E. "Eastern Area" shall mean the part of the Site that is located east of Wagner Road, including the areas encompassed by the Prohibition Zone.

F. "EGLE" shall mean the Michigan Department of Environment, Great Lakes, and Energy, the successor to the Michigan Department of Environmental Quality, the Michigan Department of Natural Resources and Environment, the Michigan Department of Natural Resources, and the Water Resources Commission. Pursuant to Executive Order 2019-06, effective April 22, 2019, the Michigan Department of Environmental Quality was renamed the Michigan Department of Environment, Great Lakes, and Energy.

G. "Evergreen Subdivision Area" shall mean the residential subdivision generally located north of I-94 and between Wagner and Maple Roads, bounded on the west by Rose Street, on the north by Dexter Road, and on the south and east by Valley Drive.

H. "Gelman" shall mean Gelman Sciences Inc.

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I. "Gelman Property" shall mean the real property described in Attachment A, where Defendant formerly operated a manufacturing facility in Scio Township, Michigan. The Defendant sold portions of the property and retains one parcel only for purposes of operating a water treatment system (the "Wagner Road Treatment Facility").

J. "Generic GSI Criterion" shall mean the generic groundwater-surface water interface ("GSI") cleanup criterion for 1,4-dioxane of 280 ug/L established pursuant to MCL 324.20120e(1)(a).

K. "Groundwater Contamination" shall mean the 1,4-dioxane in the groundwater at a concentration in excess of 7.2 ug/L, as determined by the analytical method(s) described in Attachment B to this Consent Judgment, subject to review and approval by EGLE.

L. "Municipal Water Connection Contingency Plan" or "MWCCP" shall mean a contingency plan developed to identify the steps necessary to connect properties that rely on a private drinking water well to municipal water in the event those wells are threatened by 1,4-dioxane concentrations in excess of the applicable drinking water cleanup criterion and the estimated time necessary to implement each step of the water connection process.

M. "Part 201" shall mean Part 201 of the Natural Resources and Environmental Protection Act, MCL 324.20101, et seq.

N. "Parties" shall mean Plaintiffs and Defendant.

O. "Plaintiffs" shall mean the Attorney General of the State of Michigan ex rel. EGLE.

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P. “Prohibition Zone” or “PZ” shall mean the area that is subject to the institutional control established by the Prohibition Zone Order and this Consent Judgment. A map depicting the Prohibition Zone established by this Fourth Amended Consent Judgment is attached as Attachment C.

Q. “Prohibition Zone Order” shall collectively mean the Court’s Order Prohibiting Groundwater Use, dated May 17, 2005, which established a judicial institutional control, and the March 8, 2011 Stipulated Order Amending Previous Remediation Orders, which incorporated the Prohibition Zone Order into this Consent Judgment and applied the institutional control to the Expanded Prohibition Zone, as defined in the Third Amendment to Consent Judgment.

R. “PZ Boundary Wells” shall mean those wells on or near the boundary of the Prohibition Zone and designated in Section V.A.3.b herein, whose purpose is to detect movement of 1,4-dioxane near the Prohibition Zone boundary.

S. “Remedial Action” or “Remediation” shall mean removal, treatment, and proper disposal of Groundwater and Soil Contamination, land use or resource restrictions, and institutional controls, pursuant to the terms and conditions of this Consent Judgment and work plans approved by EGLE under this Consent Judgment.

T. “Response Activity” or “Response Activities” shall have the same meaning as that term is defined in Part 201, MCL 324.20101(vv).

U. “Sentinel Wells” shall mean those wells designated in Section V.A.3.a herein, whose purpose is to detect movement of 1,4-dioxane toward the Prohibition Zone boundary.

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V. “Site” shall mean the Gelman Property and other areas affected by the migration of 1,4-dioxane emanating from the Gelman Property.

W. “Soil Contamination” or “Soil Contaminant” shall mean 1,4-dioxane in soil at a concentration in excess of 500 micrograms per kilogram (“ug/kg”), as determined by the analytical method(s) described in Attachment D or another higher concentration limit derived by means consistent with Mich Admin Code R 299.18 or MCL 324.20120a.

X. “Verification Process” shall mean the process through which Defendant shall test for and verify concentrations of 1,4-dioxane in excess of the applicable threshold at the relevant monitoring and drinking water wells, using the sampling and analytical method(s) described in Attachment B to this Consent Judgment. Specifically, Defendant shall sample the wells on a quarterly basis unless an alternative schedule is agreed upon with EGLE. Groundwater samples will be analyzed for 1,4-dioxane, either by Defendant’s laboratory or a third-party laboratory retained by Defendant. In the event that 1,4-dioxane concentrations in groundwater sampled from any well exceed the applicable threshold, Defendant shall notify EGLE by phone or electronic mail within 48 hours of completion of the data verification and validation specified in the Quality Assurance Project Plan (“QAPP”) described in Section V.E. Defendant will resample the same well within five days after the data verification and validation of the original result or at a time agreed upon with EGLE, if EGLE opts to take split samples. If a second sample analyzed by Defendant’s laboratory or a third-party laboratory retained by Defendant has contaminant concentrations exceeding the applicable threshold, the exceedance will be considered verified and Defendant shall undertake the required Response Activities.

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In the event that EGLE opts to take split samples, Defendant shall also collect an additional split sample for potential analysis within the applicable holding time by a mutually agreed-upon third-party laboratory at Defendant's expense. If the results from one sample, but not both, confirm a verified exceedance, the third sample analyzed by the mutually agreed-upon third-party laboratory, using the sampling and analytical method(s) described in Attachment B to this Consent Judgment, shall serve as the relevant result for verification purposes.

Y. "Western Area" shall mean that part of the Site located west of Wagner Road.

IV. IMPLEMENTATION OF REMEDIAL ACTION BY DEFENDANT

Defendant shall implement the Remedial Action to address Groundwater and Soil Contamination at, and emanating from, the Gelman Property in accordance with (1) the terms and conditions of this Consent Judgment; and (2) work plans approved by EGLE pursuant to this Consent Judgment. Notwithstanding any requirements set forth in this Consent Judgment obligating Defendant to operate remedial systems on a continuous basis, at a minimum rate, or until certain circumstances occur, Defendant may temporarily reduce or shut-down such remedial systems for reasonably necessary maintenance according to EGLE-approved operation and maintenance plans.

V. GROUNDWATER REMEDIATION

Defendant shall design, install, operate, and maintain the systems described below to satisfy the objectives described below. Defendant also shall implement a monitoring program to verify the effectiveness of these systems.

A. Eastern Area

1. Objectives. The remedial objectives of the Eastern Area ("Eastern Area

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Objectives") shall be the following:

a. Prohibition Zone Containment Objective. Defendant shall prevent Groundwater Contamination, regardless of the aquifer designation or the depth of the groundwater or Groundwater Contamination, from migrating beyond the boundaries of the Prohibition Zone as may be amended pursuant to Section V.A.2.f. Compliance with the Prohibition Zone Containment Objective shall be determined as provided in Section V.A.4.b, below.

b. Groundwater-Surface Water Interface Objective. Defendant shall prevent 1,4-dioxane from venting into surface waters in the Eastern Area at concentrations above the Generic GSI Cleanup Criterion, except in compliance with Part 201, including MCL 324.20120e ("Groundwater-Surface Water Interface Objective" for the Eastern Area).

2. Prohibition Zone Institutional Control. Pursuant to MCL 324.20121(8) and the Prohibition Zone Order, the following land and resource use restrictions shall apply to the Prohibition Zone depicted on the map attached hereto as Attachment C:

a. The installation by any person of a new water supply well in the Prohibition Zone for drinking, irrigation, commercial, or industrial use is prohibited.

b. The Washtenaw County Health Officer or any other entity authorized to issue well construction permits shall not issue a well construction permit for any well in the Prohibition Zone.

c. The consumption or use by any person of groundwater from the Prohibition Zone is prohibited.

d. The prohibitions listed in Subsections V.A.2.a–c do not apply to the installation and use of:

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i. Groundwater extraction and monitoring wells as part of Response Activities approved by EGLE or otherwise authorized under Parts 201 or 213 of the Natural Resources and Environmental Protection Act ("NREPA"), or other legal authority;

ii. Dewatering wells for lawful construction or maintenance activities, provided that appropriate measures are taken to prevent unacceptable human or environmental exposures to hazardous substances and comply with MCL 324.20107a;

iii. Wells supplying heat pump systems that either operate in a closed loop system or if not, are demonstrated to operate in a manner sufficient to prevent unacceptable human or environmental exposures to hazardous substances and comply with MCL 324.20107a;

iv. Emergency measures necessary to protect public health, safety, welfare or the environment;

v. Any existing water supply well that has been demonstrated, on a case-by-case basis and with the written approval of EGLE, to draw water from a formation that is not likely to become contaminated with 1,4-dioxane emanating from the Gelman Property. Such wells shall be monitored for 1,4-dioxane by Defendant at a frequency determined by EGLE; and

vi. The City of Ann Arbor's Northwest Supply Well, provided that the City of Ann Arbor operates the Northwest Supply Well in a manner that does not prevent its municipal water supply system from complying with all applicable state and federal laws and regulations.

e. Attachment E (consisting of the map depicting the Prohibition Zone

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and the above list of prohibitions/exceptions) shall be published and maintained in the same manner as a zoning ordinance at Defendant's sole expense, which may be accomplished by the City of Ann Arbor maintaining a hyperlink on its public webpage that includes the City of Ann Arbor zoning maps, or another appropriate webpage, that directs the visitor to the portion of EGLE's Gelman Sciences website that identifies the extent of the Prohibition Zone and the Summary of Restrictions. EGLE-approved legal notice of the Prohibition Zone expansion reflected in Attachment F shall be provided at Defendant's sole expense.

f. The Prohibition Zone Institutional Control shall remain in effect in this form until such time as it is modified through amendment of this Consent Judgment, with a minimum of 30 days' prior notice to all Parties. The Defendant or EGLE may move to amend this Consent Judgment to modify the boundaries of the Prohibition Zone to reflect material changes in the boundaries or fate and transport of the Groundwater Contamination as determined by future hydrogeological investigations or EGLE-approved monitoring of the fate and transport of the Groundwater Contamination. The dispute resolution procedures of Section XVI shall not apply to such motion. Rather, the Prohibition Zone boundary may not be expanded unless the moving Party demonstrates by clear and convincing evidence that there are compelling reasons that the proposed expansion is needed to prevent an unacceptable risk to human health. The above-described showing shall not apply to a motion if the Prohibition Zone expansion being sought arises from or is related to: (1) inclusion of the Triangle Property under the following subsection; (2) the incorporation of a more restrictive definition of Groundwater Contamination (i.e., a criterion less than 7.2 ug/L) into this Consent Judgment; or (3) expansion under V.A.6.c up to and including back to the boundary established by this Fourth Amended Consent Judgment.

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g. Future Inclusion of Triangle Property in the Prohibition Zone. The triangular piece of property located along Dexter Road/M-14 ("Triangle Property"), depicted in Attachment C, will be included in the Prohibition Zone if the data obtained from monitoring wells MW-121s and MW-121d and other nearby wells, including any water supply well installed on the property, as validated by the Verification Process, indicate that the Groundwater Contamination has migrated to the Triangle Property.

h. Well Identification. To identify any wells newly included in the Prohibition Zone as a result of this modification or any future modification to the Prohibition Zone, pursuant to an EGLE-approved schedule, Defendant shall implement a well identification plan for the affected area that is consistent with the Expanded Prohibition Zone Well Identification Work Plan approved by EGLE on February 4, 2011.

i. Plugging of Private Water Wells. Defendant shall plug and replace any private drinking water wells identified in any areas newly included in the Prohibition Zone by connecting those properties to the municipal water supply. Unless otherwise approved by EGLE, Defendant shall also properly plug non-drinking water wells in any areas newly included in the Prohibition Zone.

j. Municipal Water Connection Contingency Plan ("MWCCP"). Defendant shall develop a MWCCP addressing the potential provision of municipal water to properties using private drinking water wells in the Calvin Street, Wagner Road, and Lakeview Avenue areas. The MWCCP will be developed according to a schedule to be approved by EGLE.

3. <u>Monitoring and Extraction Well Installation and Operation</u>. Defendant shall install the following additional wells in the Eastern Area according to a schedule approved

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by EGLE and subject to access and receipt of any required approvals pursuant to Section VII.D:

a. Sentinel Well Installation. Defendant shall install the following three monitoring well clusters to monitor movement of 1,4-dioxane south of the northern Prohibition Zone boundary, in addition to MW-120, MW-123, and MW-129 that are already in place (collectively referred to herein as "Sentinel Wells"):

i. Residential area in the general vicinity of Ravenwood and Barber Avenues (Location "A" on map attached as Attachment G);
ii. Residential area in the general vicinity of Sequoia Parkway and Archwood Avenues between Delwood and Center (Location "B" on map attached as Attachment G); and
iii. Residential area in the general vicinity of Maple Road and North Circle Drive (Location "C" on the map attached as Attachment G).

b. PZ Boundary Well Installation. Defendant shall install the following two monitoring well clusters to monitor the movement of 1,4-dioxane near the PZ Boundary (collectively referred to herein as "PZ Boundary Wells"):

i. Residential, commercial, and vacant area east of South Wagner Road, north of West Liberty Road, west of Lakeview Avenue, and south of Second Sister Lake (Location "D" on map attached as Attachment G); and
ii. Residential area south/southeast of the MW-112 cluster (Location "E" on map attached as Attachment G).

c. Sentinel and PZ Boundary Well Installation and Sampling. Defendant shall install the new well clusters according to a schedule to be approved by EGLE. Each new Sentinel or PZ Boundary Well cluster will include two to three monitoring wells, and the determination of the number of wells shall be based on EGLE's and the Defendant's evaluation of the geologic conditions present at each location, consistent with past practice. The frequency of sampling these monitoring wells and the analytical methodology for sample analysis will be

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included in the Eastern Area System Monitoring Plan, as amended.

d. Drilling Techniques. Borings for new wells installed pursuant to Section V.A.3 shall be drilled to bedrock unless a different depth is approved by EGLE or if conditions make such installation impracticable. EGLE reserves the right to require alternate drilling techniques to reach bedrock if standard methods are not able to do so. If the Defendant believes that drilling one or more of these wells to bedrock is not practical due to the geologic conditions encountered and/or that such conditions do not warrant the alternative drilling technique required by EGLE, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The wells shall be installed using Defendant's current vertical profiling techniques, which are designed to minimize the amount of water introduced during drilling, unless EGLE agrees to alternate techniques. Any material excavated as the result of well installation shall be properly characterized and disposed of or transferred to an appropriate facility for preservation and future scientific investigation, at Defendant's discretion.

e. Installation of Additional Groundwater Extraction Well. Defendant shall install an additional groundwater extraction well (the "Rose Well") and associated infrastructure in the general area bounded by Rose Street and Pinewood Street as designated on Attachment G or convert former injection well IW-2 to a groundwater extraction well, or both. The decision to install the Rose Well or to convert IW-2 to an extraction well (or to do both) and exact location of the Rose Well if installed will be based on an evaluation of relevant geologic conditions, water quality, and other relevant factors, including access.

f. Eastern Area Groundwater Extraction.

i. The Defendant shall operate the Evergreen Subdivision Area

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extraction wells, LB-4 and either the Rose Well or IW-2, or both (including EGLE-approved replacement well(s)) (collectively, the "Evergreen Wells"), and TW-19 and TW-23 (or EGLE-approved replacement well(s)) (the "Maple Road Wells"), at a combined minimum purge rate of approximately 200 gallons per minute ("gpm") or the maximum capacity of the existing deep transmission pipeline, whichever is less provided Defendant properly maintains the pipeline, in order to reduce the mass of 1,4-dioxane migrating through the Evergreen Subdivision Area and the mass of 1,4-dioxane migrating east of Maple Road, until such time as the Eastern Area Objectives will be met at a reduced extraction rate or without the need to operate these extraction wells. In the event the maximum capacity of the existing deep transmission pipeline is ever reduced to below 180 gpm, Defendant shall repair and/or reconfigure the pipeline and related infrastructure, or take other action, including potentially replacing the pipeline or treating and disposing of some portion of the extracted groundwater at a different location, as needed to once again achieve a capacity of 190 – 200 gpm. Defendant shall have the discretion to adjust the individual well purge rates in order to optimize mass removal and compliance with the Eastern Area Objectives, provided that it shall operate the Evergreen Wells at a combined minimum purge rate of approximately 100 gpm, until such time as the Eastern Area Objectives will be met at a reduced extraction rate without the need to operate these wells. Before significantly reducing extraction below the minimum purge rates described above or permanently terminating extraction from either the Evergreen Wells or the Maple Road Wells, Defendant shall consult with EGLE and provide a written analysis, together with the data that supports its conclusion that the Eastern Area Objectives can be met at a reduced extraction rate or without the need to operate these extraction wells. EGLE will review the analysis and data and provide a written response to Defendant within 56 days after

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receiving Defendant's written analysis and data. If Defendant disagrees with the EGLE's conclusion, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The Defendant shall not significantly reduce or terminate extraction from the Evergreen Wells or the Maple Road Wells during the 56-day review period or while Defendant is disputing EGLE's conclusion.

4. Verification Monitoring. Defendant shall amend its Eastern Area System Monitoring Plan dated December 22, 2011 to include the monitoring wells installed under Section V.A.3 within 60 days of their installation. The Eastern Area System Monitoring Plan, as amended (hereinafter the "Verification Plan"), shall be sufficient to meet the objectives of this Section.

a. Objectives of Verification Plan. The Verification Plan shall include the collection of data sufficient to measure the effectiveness of the Remediation and to: (i) ensure that any potential migration of Groundwater Contamination outside of the Prohibition Zone is detected before such migration occurs and with sufficient time to allow Defendant to maintain compliance with the Prohibition Zone Containment Objective; (ii) verify that the Groundwater-Surface Water Interface Objective is satisfied; (iii) track the migration of the Groundwater Contamination to determine the need for additional investigation and monitoring points to meet the objectives in Section V.A.1, including the determination of the fate and transport of Groundwater Contamination when and if it reaches the Allen Creek Drain (including its branches) and the portion of the Huron River that is the easternmost extent of the Prohibition Zone; and (iv) evaluate potential changes in groundwater flow resulting from adjustments in extraction rates at different extraction well locations. The Verification Plan shall be continued until terminated pursuant to Section V.D.

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b. Compliance Determination. The Verification Plan shall include the following steps for verifying sampling results and confirming compliance or noncompliance with the Eastern Area Objectives.

i. Verification Process for Sentinel Wells. Defendant shall conduct the Verification Process as defined in Section III.X for each Sentinel Well to verify any exceedance of 7.2 ug/L. A verified detection above 7.2 ug/L will be considered a "Verified Sentinel Well Exceedance" and Defendant shall take the Response Activities set forth in Section V.A.5.a.

ii. Verification Process for PZ Boundary Wells. Defendant shall conduct the Verification Process as defined in Section III.X for each PZ Boundary Well to verify any exceedance of 4.6 ug/L and/or 7.2 ug/L. A verified detection above 4.6 ug/L will be considered a "Verified PZ Boundary Well Exceedance" and Defendant shall take the Response Activities set forth in Section V.5.b. A verified detection above 7.2 ug/L will be considered a "Confirmed PZ Boundary Well Noncompliance" and Defendant shall take the Response Activities set forth in Section V.5.c.

5. <u>Eastern Area Response Activities</u>. Defendant shall take the following Response Activities:

a. Verified Sentinel Well Exceedance. In the event of a Verified Sentinel Well Exceedance, Defendant shall sample that Sentinel Well monthly. If the concentrations of 1,4-dioxane are less than 7.2 ug/L in samples from any two successive monthly sampling events, Defendant shall return to sampling that Sentinel Well quarterly. If, however, the

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concentrations of 1,4-dioxane exceed 7.2 ug/L in samples collected from the same Sentinel Well in any three successive monthly sampling events, Defendant shall take the following actions:

i. If involving a Sentinel Well in the north, installation of up to two additional well clusters near the Prohibition Zone boundary (the location of which shall be determined based on the location of the initial exceedance). If more than one Sentinel Well in the north exceeds the trigger level, Defendant and EGLE will mutually agree on the number of PZ Boundary Wells to be installed. Defendant shall sample the new PZ Boundary Wells monthly until Defendant completes the hydrogeological assessment described in Section V.A.5.a.ii below.

ii. Completion of a focused hydrogeological assessment of the applicable area that analyzes the likelihood that 1,4-dioxane at levels above 7.2 ug/L will migrate outside the Prohibition Zone. The assessment shall also opine on the mechanism causing the exceedances and the potential risk of impact to private drinking water wells. Defendant shall provide this assessment to EGLE within 60 days after installation of the new PZ Boundary Well(s). If the focused hydrogeological assessment determines that there is a low potential for the Groundwater Contamination to migrate beyond the Prohibition Zone boundary, normal quarterly monitoring of the Sentinel Well and applicable PZ Boundary Wells will resume. If the focused hydrogeological assessment determines that there is a reasonable likelihood for 1,4-dioxane greater than 7.2 ug/L to migrate beyond the Prohibition Zone boundary, the Defendant shall initiate the following Response Activities:

(A) Defendant shall continue to monitor the affected Sentinel Well(s) and the Prohibition Zone Boundary Wells on a monthly basis.

(B) If the Verified Sentinel Well Exceedance occurs in a

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Sentinel Well to be installed near the northern boundary of the Prohibition Zone, Defendant shall develop a "Remedial Contingency Plan" that identifies the Response Activities that could be implemented to prevent Groundwater Contamination from migrating beyond the Prohibition Zone Boundary. The Remedial Contingency Plan may identify expansion of the Prohibition Zone as an option, subject to Section V.A.2.f. Defendant shall submit the Remedial Contingency Plan to EGLE within 45 days after the focused hydrogeological assessment is completed.

(C) Defendant will review the Municipal Water Connection Contingency Plan, if applicable, and initiate preliminary activities related to provision of municipal water to potentially impacted private drinking water wells. The amount of work to be completed will be based on the anticipated time frame for water extension and the projected time of migration to potential receptors.

b. Verified PZ Boundary Well Exceedance. In the event of a Verified PZ Boundary Well Exceedance, Defendant shall sample that PZ Boundary Well monthly. If the concentrations of 1,4-dioxane are less than 4.6 ug/L in samples from any two successive monthly sampling events, Defendant shall return to sampling that PZ Boundary Well quarterly. If, however, the concentrations of 1,4-dioxane exceed 4.6 ug/L in samples collected from the same PZ Boundary Well in any three successive monthly sampling events, Defendant shall take the following actions:

i. Defendant, in consultation with EGLE, shall sample select private drinking water wells in the immediate vicinity of the impacted PZ Boundary Well.

ii. Defendant will review the Municipal Water Connection Contingency Plan, and initiate further activities related to potential provision of municipal water

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to potentially impacted private drinking water wells as appropriate. The amount of work to be completed will be based on the anticipated time frames for water extension and the projected time of migration to potential receptors.

iii. Subject to Section V.A.2.f, Defendant shall implement the Remedial Contingency Plan as necessary to prevent contaminant levels above 7.2 ug/L from migrating beyond the Prohibition Zone Boundary.

c. Confirmed PZ Boundary Well Noncompliance. In the event of a Confirmed PZ Boundary Well Noncompliance, Defendant shall sample that PZ Boundary Well monthly. If the concentrations of 1,4-dioxane are less than 7.2 ug/L in samples from any two successive monthly sampling events, Defendant shall return to sampling that PZ Boundary Well quarterly. If, however, the concentrations of 1,4-dioxane exceed 7.2 ug/L in samples collected from the same PZ Boundary Well in any four successive monthly sampling events, Defendant shall take the following actions:

i. Defendant shall sample any active drinking water wells in the immediate vicinity of the impacted PZ Boundary Well on a monthly basis.

ii. Defendant will review the Municipal Water Connection Contingency Plan and implement the remaining activities necessary to provide municipal water to properties serviced by private drinking water wells potentially impacted by 1,4-dioxane concentrations above the applicable drinking water cleanup criterion.

iii. Defendant shall connect any such properties to municipal water on a case-by-case basis as determined by EGLE or if requested by the property owner.

iv. Subject to Section V.A.2.f, Defendant shall undertake

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Response Actions as necessary to reduce concentrations in the affected PZ Boundary Well(s) to less than 7.2 ug/L.

d. Bottled Water. At any time, Defendant shall supply the occupants of any property with a threatened drinking water well with bottled water if, prior to connection to municipal water, 1,4-dioxane concentrations in the drinking water well servicing the property exceed 3.0 ug/L. This obligation shall terminate if either (i) the 1,4-dioxane concentration in the well drops below 3.0 ug/L during two consecutive sampling events or (ii) the property is connected to an alternative water supply.

e. Triangle Property. If a drinking water well is installed on the Triangle Property in the future, Defendant shall take the necessary steps to obtain permission to sample the well on a schedule approved by EGLE. Defendant shall monitor such well(s) on EGLE-approved schedule unless or until that property is included in the Prohibition Zone, at which time, any water well(s) shall be addressed as part of the well identification process described in Section V.A.2.h.

f. Downgradient Investigation. The Defendant shall continue to implement its Downgradient Investigation Work Plan as approved by EGLE on February 4, 2005, as may be amended, to track the Groundwater Contamination as it migrates to ensure any potential migration of Groundwater Contamination outside of the Prohibition Zone is detected before such migration occurs with sufficient time to allow Defendant to maintain compliance with the Prohibition Zone Containment Objective and to ensure compliance with the Groundwater-Surface Water Interface Objective. Defendant shall, as the next phase of this iterative investigation process investigate the area depicted on the map attached as Attachment G, including the installation of

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monitoring wells at the following locations subject to access and receipt of any required approvals pursuant to Section VII.D:

i. A monitoring well nest in the residential area in the general vicinity of intersection of Washington and 7th Streets (Location "F" on Attachment G);

ii. A shallow well in the residential area in the general vicinity of current monitoring well nest MW-98 (Location "G" on Attachment G); and

iii. A monitoring well nest in the residential area in the general vicinity of Brierwood and Linwood Streets (Location "H" on Attachment G).

The data from these wells will be used to guide additional downgradient investigations as necessary to ensure compliance with the Eastern Area Objectives.

6. Prohibition Zone Boundary Review.

a. Five years after entry of this Fourth Amended Consent Judgment and then every five years thereafter, Defendant and EGLE shall confer and determine whether the boundary of the Prohibition Zone can be contracted without either: (i) posing a current or future risk to the public health and welfare, including maintaining an adequate distance between the Groundwater Contamination and the Prohibition Zone boundary; or (ii) requiring Defendant to undertake additional Response Activities to contain the Groundwater Contamination within the contracted Prohibition Zone boundary beyond those Response Activities otherwise required immediately before the proposed contraction. This determination will be based on consideration of the totality of all data from existing Eastern Area monitoring wells.

b. If EGLE and Defendant jointly agree that the Prohibition Zone boundary may be contracted under these conditions, the Parties shall move to amend Attachments C and E of this Consent Judgment for the sole purpose of establishing a revised boundary for the

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Prohibition Zone. If only one Party concludes that the Prohibition Zone boundary may be contracted under these conditions, that Party may move to amend Attachments C and E of this Consent Judgment for the sole purpose of establishing a revised boundary for the Prohibition Zone, but must demonstrate by clear and convincing evidence that the above conditions are satisfied. The non-moving Party may oppose or otherwise respond to such motion and the showing required under Section XVI shall not apply to the Court's resolution of the motion.

c. If the Prohibition Zone boundary is contracted under Section V.A.6 and the Parties, either jointly or independently, subsequently determine that based on the totality of the data, the Prohibition Zone boundary should be expanded up to and including back to the boundary established by this Fourth Amended Consent Judgment in order to protect the public health and welfare, the Party(ies) may move to amend Attachments C and E of this Consent Judgment for the sole purpose of establishing a revised boundary for the Prohibition Zone. Neither Section XVI nor the showing required under Section V.A.2.f shall apply to the Court's resolution of the motion, provided that the expansion sought does not extend beyond the boundary established by this Fourth Amended Consent Judgment.

d. To the extent the Prohibition Zone boundary is contracted under Section V.A.6.a, Defendant shall not be required to undertake Response Activities to contain the Groundwater Contamination within the contracted boundary beyond those Response Activities required immediately before the Prohibition Zone was contracted.

7. Operation and Maintenance. Subject to Sections V.A.3.f, V.A.9, and reasonably necessary maintenance according to EGLE-approved operation and maintenance plans, Defendant shall operate and maintain the Eastern Area System as necessary to meet the Prohibition

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Zone Containment Objective until Defendant is authorized to terminate extraction well operations pursuant to Section V.C.1.

8. Treatment and Disposal. Groundwater extracted by the extraction well(s) in the Eastern Area System shall be treated (as necessary depending on the disposal method(s) utilized) with ozone/hydrogen peroxide or ultraviolet light and oxidizing agent(s), or such other method approved by EGLE to reduce 1,4-dioxane concentrations to the required level and disposed of using methods approved by EGLE, including, but not limited to, the following options:

a. Groundwater Discharge. The purged groundwater shall be treated to reduce 1,4-dioxane concentrations to the level required by EGLE, and discharged to groundwater at locations approved by EGLE in compliance with a permit or exemption authorizing such discharge.

b. Sanitary Sewer Discharge. Use of the sanitary sewer leading to the Ann Arbor Wastewater Treatment Plant is conditioned upon approval of the City of Ann Arbor. If discharge is made to the sanitary sewer, the Evergreen and Maple Road Wells shall be operated and monitored in compliance with the terms and conditions of an Industrial User's Permit from the City of Ann Arbor, and any subsequent written amendment of that permit made by the City of Ann Arbor. The terms and conditions of any such permit and any subsequent amendment shall be directly enforceable by EGLE against Defendant as requirements of this Consent Judgment.

c. Storm Sewer Discharge. Use of the storm drain or sewer is conditioned upon issuance of an NPDES permit and approval of the appropriate regulatory authority(ies). Discharge to the Huron River via a storm water system shall be in accordance with the relevant NPDES permit and conditions required by the relevant regulatory authority(ies). If a

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storm drain or sewer is to be used for disposal of purged groundwater, Defendant shall submit to EGLE and the appropriate local regulatory authority(ies) for their review and approval, a protocol under which the purge system shall be temporarily shut down: (i) for maintenance of the storm drain or sewer and (ii) during storm events to assure that the storm water system retains adequate capacity to handle run-off created during such events. Defendant shall not be permitted or be under any obligation under this subsection to discharge purged groundwater to the storm drain or sewer unless the protocol for temporary shutdown is approved by all necessary authorities. Following approval of the protocol, the purge system shall be operated in accordance with the approved protocol.

d. Existing or Additional/Replacement Pipeline to Wagner Road Treatment Facility.

i. The existing deep transmission pipeline, an additional pipeline, or a pipeline replacing the existing deep transmission pipeline may be used to convey purged groundwater from the existing Evergreen Area infrastructure to the Wagner Road Treatment Facility where the purged groundwater shall be treated to reduce 1,4-dioxane concentrations to the level required by NPDES Permit No. MI-0048453, as amended or reissued.

ii. Installation of an additional pipeline or a replacement pipeline from the existing Evergreen Area to the Wagner Road Treatment Facility is conditioned upon approval of such installation by EGLE. If the pipeline is proposed to be installed on public property, the pipeline installation is conditioned upon approval of such installation by the appropriate local authority(ies), if required by statute or ordinance, or by Order of the Court pursuant to the authority under MCL 324.20135a. Defendant shall design and install the pipeline

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in compliance with all state requirements and install the pipeline with monitoring devices to detect any leaks. If leaks are detected, the system will automatically shut down and notify an operator of the condition. In the event that any leakage is detected, Defendant shall take any measures necessary to repair any leaks and perform any remediation that may be necessary. To reduce the possibility of accidental damage to the pipeline during any future construction, Defendant shall participate in the notification system provided by MISS DIG Systems, Inc., or its successor ("MISS DIG"), and shall comply with the provisions of MCL 460.721, *et seq.,* as may be amended and with the regulations promulgated thereunder. Defendant shall properly mark its facilities upon notice from MISS DIG.

e. Existing, Replacement, or Additional Pipeline from Maple Road Extraction Well(s). Defendant may operate the existing pipeline or install and operate a replacement pipeline or an additional pipeline from the Maple Road Extraction Well(s) to the existing Evergreen area infrastructure to convey groundwater extracted from the Maple Road Extraction Wells to the Wagner Road Treatment Facility, where the purged groundwater shall be treated to reduce 1,4-dioxane concentrations to the level required by NPDES Permit No. MI-0048453, as amended or reissued. Installation and operation of an additional or replacement pipeline from the Maple Road area to Evergreen area is conditioned upon approval of such installation and operation by EGLE. If the pipeline is proposed to be installed on public property, the pipeline installation is conditioned upon approval of such installation by the appropriate local authorities, if required by statute or ordinance, or Order of the Court pursuant to the authority under MCL 324.20135a. Defendant shall design any such pipeline in compliance with all state requirements and install it with monitoring devices to detect any leaks. In the event any leakage

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is detected, Defendant shall take any measures necessary to repair any leaks and perform any remediation that may be necessary. To reduce the possibility of accidental damage to the pipeline, Defendant shall participate in the notification system provided by MISS DIG and shall comply with the provisions of MCL 460.721, *et seq*., as may be amended, and with the regulations promulgated thereunder. Defendant shall properly mark its facilities upon notice from MISS DIG.

f. Pipeline from Rose Well. Installation and operation of a proposed pipeline from the Rose Well to the existing Evergreen area infrastructure is conditioned upon approval of such installation and operation by EGLE. If the pipeline is proposed to be installed on public property, the pipeline installation is conditioned upon approval of such installation by the appropriate local authorities, if required by statute or ordinance, or Order of the Court pursuant to the authority under MCL 324.20135a. Defendant shall design and install any such pipeline in compliance with all state requirements and install it with monitoring devices to detect any leaks. In the event any leakage is detected, Defendant shall take any measures necessary to repair any leaks and perform any remediation that may be necessary. To reduce the possibility of accidental damage to the pipeline, Defendant shall participate in the notification system provided by MISS DIG and shall comply with the provisions of MCL 460.721, *et seq*., as may be amended, and with the regulations promulgated thereunder. Defendant shall properly mark its facilities upon notice from MISS DIG. Defendant may operate such pipeline to, among other things, convey groundwater extracted from the Rose Well to the existing Evergreen Area infrastructure and then to the Wagner Road Treatment Facility, where the purged groundwater shall be treated to reduce 1,4-dioxane concentrations to the level required by NPDES Permit No. MI-0048453, as amended or reissued.

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9. Wagner Road Extraction. The extraction wells currently or in the future located just west of Wagner Road (the "Wagner Road Wells") shall be considered part of the Eastern Area System even though they are located west of Wagner Road. The Defendant shall initially operate the Wagner Road Wells at a combined 200 gpm extraction rate. The Defendant shall continue to operate the Wagner Road Wells in order to reduce the migration of 1,4-dioxane east of Wagner Road at this rate until such time as it determines that the Eastern Area Objectives will be met with a lower combined extraction rate or without the need to operate these wells or that reduction of the Wagner Road extraction rate would enhance 1,4-dioxane mass removal the Rose Well/IW-2 and Defendant's efforts to reduce the mass of 1,4-dioxane migrating east of Maple Road and/or through the Evergreen Subdivision Area. Before significantly reducing or terminating extraction from the Wagner Road Wells, Defendant shall consult with EGLE and provide a written analysis, together with the data that supports its conclusion that the above-objectives can be met at a reduced extraction rate or without the need to operate these extraction wells. EGLE will review the analysis and data and provide a written response to Defendants within 56 days after receiving Defendant's written analysis and data. If Defendant disagrees with EGLE's conclusion, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The Defendant shall not significantly reduce or terminate the Wagner Road extraction during the 56-day review period or while Defendant is disputing EGLE's conclusion.

10. Options Array for Transmission Line Failure/Inadequate Capacity. The Defendant has provided EGLE with documentation regarding the life expectancy of the deep transmission line and an Options Array (attached as Attachment H). The Options Array describes the various options that may be available if the deep transmission line fails or the 200 gpm capacity

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of the existing deep transmission line that transports groundwater from the Eastern Area System to the treatment system located on the Gelman Property proves to be insufficient to meet the Prohibition Zone Containment Objective.

B. Western Area

1. Western Area Non-Expansion Cleanup Objective. The Defendant shall prevent the horizontal extent of the Groundwater Contamination in the Western Area, regardless of the depth (as established under Section V.B.3.b and c), from expanding. Compliance with this objective shall be determined as set forth in Section V.B.4, below. Continued migration of Groundwater Contamination into the Prohibition Zone, as may be modified, shall not be considered expansion and is allowed. A change in the horizontal extent of Groundwater Contamination resulting solely from the Court's application of a new cleanup criterion shall not constitute expansion. Nothing in this Section prohibits EGLE from seeking additional response activities pursuant to Section XVIII.E of this Consent Judgment. Compliance with the Non-Expansion Cleanup Objective shall be established and verified by the network of monitoring wells in the Western Area to be selected and/or installed by the Defendant as provided in Sections V.B.3.b and c, below ("Western Area Compliance Well Network") and the Compliance Process set forth in Section V.B.4 ("Western Area Compliance Process"). There is no independent mass removal requirement or a requirement that Defendant operate any particular Western Area extraction well(s) at any particular rate beyond what is necessary to prevent the prohibited expansion, provided that Defendant's ability to terminate all groundwater extraction in the Western Area is subject to Section V.C.1.c and the establishment of property use restrictions as required by Section V.B.3.a. If prohibited expansion occurs, as determined by the Western Area Compliance

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Well Network and the Western Area Compliance Process, Defendant shall undertake additional response activities to return the Groundwater Contamination to the boundary established by the Western Area Compliance Well Network (such response activities may include groundwater extraction at particular locations).

As part of the Third Amendment to Consent Judgment, EGLE agreed to modify the remedial objective for the Western Area as provided herein to a no expansion performance objective in reliance on Defendant's agreement to comply with a no expansion performance objective for the Western Area. To ensure compliance with this objective, Defendant acknowledges that in addition to taking further response action to return the horizontal extent of Groundwater Contamination to the boundary established by the Compliance Well Network, Defendant shall be subject to stipulated penalties for violation of the objective as provided in Section XVII. Nothing in this Section shall limit Defendant's ability to contest the assessment of such stipulated penalties as provided in this Consent Judgment.

2. Western Area Groundwater-Surface Water Interface Objective.

a. Defendant shall prevent 1,4-dioxane from venting into surface waters in the Western Area at concentrations above the Generic GSI Cleanup Criterion, except in compliance with Part 201, including MCL 324.20120e ("Groundwater-Surface Water Interface Objective" for the Western Area).

b. GSI Investigation Work Plan. Within 90 days of entry of this Consent Judgment, Defendant shall submit to EGLE for its review and approval a work plan for investigation of the groundwater-surface water interface in the Western Area and a schedule for implementing the work plan. Defendant's work plan shall include:

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i. An evaluation of the Western Area and identification of any areas where the GSI pathway is relevant, i.e., any areas where 1,4-dioxane in groundwater is reasonably expected to vent to surface water in concentrations that exceed the Generic GSI Criterion based on evaluation of the factors listed in MCL 324.20120e(3); and

ii. A description of the Response Activities Defendant will take to determine whether 1,4-dioxane in groundwater is venting to surface water in any such areas in concentrations that exceed the Generic GSI Criterion.

c. GSI Response Activity Work Plan. With respect to any areas where the above-described GSI investigation demonstrates that 1,4-dioxane in groundwater is venting to surface water in any such areas in concentrations that exceed the Generic GSI Criterion, Defendant shall submit for EGLE review and approval a work plan and a schedule for implementing the work plan that describes the Response Activities, including any evaluations under MCL 324.20120e, Defendant will undertake to ensure compliance with Groundwater-Surface Water Interface Objective within a reasonable timeframe.

d. Compliance with Groundwater-Surface Water Interface Objective. Defendant shall undertake such Response Activities and/or evaluations as necessary to achieve compliance with the Groundwater-Surface Water Interface Objective. It shall not be a violation of this Consent Judgment nor shall Defendant be subject to stipulated penalties unless and until Defendant fails to achieve compliance with the Groundwater-Surface Water Interface Objective within a reasonable timeframe established by EGLE and then only from that point forward. EGLE's determination of a reasonable timeframe for compliance with the Groundwater-Surface Water Interface Objective is subject to dispute resolution under Section XVI.

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3. Western Area Response Activities. Defendant shall implement the following response activities:

a. Groundwater Extraction. The Western Area Response Activities shall include the operation of groundwater extraction wells as necessary to meet the objectives described in Section V.B.1 and 2, including operation of the Marshy Area groundwater extraction system described in Defendant's May 5, 2000 Final Design and Effectiveness Monitoring Plan, as subsequently modified and approved by EGLE. Purged groundwater from the Western Area shall be treated with ozone/hydrogen peroxide or ultraviolet light and oxidizing agent(s), or such other method approved by EGLE to reduce 1,4-dioxane concentrations to the level required by NPDES Permit No. MI-0048453, as amended or reissued. Discharge to the Honey Creek tributary shall be in accordance with NPDES Permit No. MI-0048453, as amended or reissued. The Defendant shall have property use restrictions that are sufficient to prevent unacceptable exposures in place for any properties affected by Soil Contamination or Groundwater Contamination before completely terminating extraction in the Western Area.

b. Western Area Delineation Investigation. Defendant shall install the following additional groundwater monitoring wells pursuant to a schedule approved by EGLE and subject to the accessibility of the locations and obtaining access and any required approvals under Section VII.D at the approximate locations described below and on the map attached as Attachment G to address gaps in the current definition of the Groundwater Contamination and to further define the horizontal extent of Groundwater Contamination in the Western Area:

i. Commercial area north of Jackson Road (across from April Drive) and south of US-Highway I-94, near MW-40s&d. (Deep well only) (Location "I" on Attachment G);

ii. Commercial area north of Jackson Road (across from Nancy

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Drive) and south of US-Highway I-94, east of MW-40s&d and west of the MW-133 cluster (Location "J" on Attachment G);

iii. Residential area west of West Delhi, north of Jackson Road and south of US-Highway I-94 (Location "K" on Attachment G);

iv. Residential area southwest of the MW-141 cluster in the vicinity of Kilkenny and Birkdale (Location "L" on Attachment G);

v. Residential area along Myrtle between Jackson Road and Park Road (Shallow Well only) (Location "M" on Attachment G); and

vi. Residential and vacant area within approximately 250 feet of Honey Creek southwest of Dexter Road (Location "N" on Attachment G).

This investigation may be amended by agreement of EGLE and the Defendant to reflect data obtained during the investigation. Defendant shall promptly provide the data/results from the investigation to EGLE so that EGLE receives them prior to Defendant's submission of the Compliance Monitoring Plan described in Subsection V.B.3.c, below. Based on the data obtained from the wells described above, Defendant may propose to install additional monitoring wells to potentially serve as Compliance Wells rather than one or more of the wells identified above. EGLE reserves the right to request the installation of additional borings/monitoring wells, if the totality of the data indicate that the horizontal extent of Groundwater Contamination has not been completely defined.

c. Compliance Well Network and Compliance Monitoring Plan. Within 30 days of completing the investigation described in Subsection V.B.3.b, above, Defendant shall amend its Western Area Monitoring Plan dated April 18, 2011, including Defendant's analysis of the data obtained during the investigation for review and approval by EGLE, to identify the network of compliance wells that will be used to confirm compliance with the Western Area Non-Expansion Cleanup Objective (hereinafter referred to as the "Compliance Monitoring Plan"). The Compliance Monitoring Plan shall include the collection of data from a compliance well

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network sufficient to verify the effectiveness of the Western Area System in meeting the Western Area Non-Expansion Cleanup Objective. The locations and/or number of the Compliance Wells for the Compliance Monitoring Plan will be determined based on the data obtained from the investigation Defendant shall conduct pursuant to Section V.B.3.b, and shall be made up of existing monitoring wells. EGLE shall approve the Compliance Monitoring Plan, submit to Defendant changes in the Compliance Monitoring Plan that would result in approval, or deny the Compliance Monitoring Plan within 35 days of receiving the Compliance Monitoring Plan. Defendant shall either implement the EGLE-approved Compliance Monitoring Plan, including any changes required by EGLE, or initiate dispute resolution pursuant to Section XVI of this Consent Judgment. Defendant shall implement the EGLE- (or Court)-approved Compliance Monitoring Plan to verify the effectiveness of the Western Area System in meeting the Western Area Non-Expansion Cleanup Objective. Defendant shall continue to implement the current EGLE-approved monitoring plan(s) until EGLE approves the Compliance Monitoring Plan required by this Section. The monitoring program shall be continued until terminated pursuant to Section V.D.

d. Municipal Water Connection Contingency Plan ("MWCCP"). Defendant shall develop a MWCCP addressing the potential provision of township water to properties using private drinking water wells on Elizabeth Road. The MWCCP will be developed according to a schedule to be approved by EGLE.

4. Compliance Determination for Non-Expansion Objective. The Compliance Monitoring Plan shall include the following steps for verifying sampling results and confirming compliance or noncompliance with the Western Area Non-Expansion Cleanup Objective.

a. Monitoring Frequency/Analytical Method. Defendant will sample

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groundwater from the Compliance Wells on a quarterly basis unless an alternative schedule is agreed upon on with EGLE. Groundwater samples will be submitted to a laboratory owned, operated or contracted by Defendant for 1,4-dioxane analysis.

b. Verification Process. Defendant shall conduct the Verification Process as defined in Section III.X for each Compliance Well to verify any exceedance of 7.2 ug/L. A verified detection above 7.2 ug/L will be considered a "Verified Compliance Well Exceedance." If a second sample does not exceed 7.2 ug/L, monitoring of the well will increase to monthly until the pattern of exceedances is broken by two successive sampling events below 7.2 ug/L. At that point, a quarterly monitoring frequency will resume.

c. Response Activities. In the event of a Verified Compliance Well Exceedance, Defendant shall take the following Response Activities:

i. Sample selected nearby private drinking water wells. Defendant shall sample select private drinking water wells unless otherwise the Parties otherwise agree. Prior to sampling the selected wells, Defendant shall submit a list of the wells to be sampled and other sampling details to EGLE for approval. In selecting wells to be sampled, Defendant shall consider data collected from monitoring and private drinking water wells within 1,000 feet of the Compliance Well(s) that exceeded 7.2 ug/L, groundwater flow, hydrogeology and well depth. EGLE shall respond within seven days after receipt of Defendant's list of select private drinking water wells and shall either approve the list or propose alternate or additional wells to be sampled.

ii. If a Verified Compliance Well Exceedance occurs in the same Compliance Well in any two successive monthly sampling events, Defendant shall take the

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following Response Activities:

(A) Continue to sample the previously selected private drinking water well(s) on a monthly basis unless otherwise agreed upon with EGLE.

(B) Conduct focused hydrogeological investigation to determine whether the Verified Compliance Well Exceedance is a temporary fluctuation or evidence of plume expansion. The investigation shall include the measurement of groundwater levels in relevant monitoring wells in the vicinity of the Compliance Well with the Verified Compliance Well Exceedance. Defendant shall report its findings to EGLE within 30 days of completing the hydrogeological investigation.

(C) Conduct Statistical Analysis. During the eight month period after the second consecutive Verified Compliance Well Exceedance, Defendant shall complete a statistical analysis of the data using a Mann-Kendall Trend Test or other statistical technique approved by EGLE.

(D) Interim Measures Feasibility Study. During the eight month period after the second consecutive Verified Compliance Well Exceedance, Defendant shall evaluate affirmative measures to control expansion of the Groundwater Contamination as necessary to reduce the concentration of 1,4-dioxane in the relevant Compliance Well to below 7.2 ug/L, including adjustments in groundwater extraction rates, the installation of additional groundwater extraction wells or other remedial technologies. Defendant shall submit to EGLE a feasibility study within 240 days of the Verified Compliance Well Exceedance. The feasibility study shall include an evaluation of the feasibility and effectiveness of all applicable measures to control expansion of the Groundwater Contamination as necessary to reduce the concentration of

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1,4-dioxane in the relevant Compliance Well to below 7.2 ug/L in light of the geology and current understanding of the fate and transport of the Groundwater Contamination.

iii. If, after conducting the focused hydrogeological investigation and statistical analysis, the totality of the data evidences a reasonable likelihood that the Western Area Non-Expansion Cleanup Objective is not being met, Defendant shall evaluate and, subject to EGLE approval, implement one or more of the potential response activities identified in the feasibility study, or other response activities, as necessary to achieve compliance with the Western Area Non-Expansion Cleanup Objective. Nothing in this Section shall prevent Defendant from implementing response activities as necessary to achieve the Western Area Non-Expansion Cleanup Objective at an earlier time.

d. Stipulated Penalties/Exacerbation. Defendant shall not be subject to stipulated penalties until concentrations in at least four consecutive monthly samples from a given Compliance Well exceed 7.2 ug/L, at which point Defendant shall be subject to stipulated penalties for violation of the Western Area Non-Expansion Cleanup Objective as provided in Section XVII, provided, however, that Defendant shall not be subject to stipulated penalties with respect to prohibited expansion of the horizontal extent of the Groundwater Contamination if Defendant can demonstrate by a preponderance of the evidence that the migration of the Groundwater Contamination is caused in whole or in part by the actions of an unrelated third party that have contributed to or exacerbated the Groundwater Contamination. In such event, although Defendant is not subject to stipulated penalties, Defendant shall remain responsible for mitigating the migration of the Groundwater Contamination. Nothing in this Consent Judgment shall preclude Defendant from seeking contribution or cost recovery from other parties responsible for or

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contributing to exacerbation of the Groundwater Contamination.

e. Private Drinking Water Well Response Activities. If, after conducting the focused hydrogeological investigation and statistical analysis, the totality of the data evidences a reasonable likelihood that 1,4-dioxane will be present at concentrations above 7.2 ug/L in a residential drinking water well and/or at concentrations above 350 ug/L in an active non-residential drinking water well, Defendant shall evaluate and, if appropriate, implement response activities, including, without limitation, the following:

i. Sampling of at risk drinking water well(s) on a monthly basis;

ii. Implementation of affirmative interim measures to mitigate the expansion of 1,4-dioxane at concentrations above the applicable drinking water standard toward the drinking water well(s) as determined in the feasibility study described in Section V.B.4.c.ii.(D);

iii. Evaluation of land use restrictions and/or institutional controls to eliminate drinking water exposures to 1,4-dioxane in the groundwater at concentrations above the applicable drinking water standard; and

iv. Evaluation of water supply alternatives including, but not limited to, providing bottled water, a township water connection, installation of a new drinking water well completed in an uncontaminated portion of the subsurface, and point-of-use treatment systems.

v. If at any time 1,4-dioxane is detected in an active private drinking water well above 3.0 ug/L, Defendant shall promptly at its expense, offer the occupants

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of the property the option of receiving bottled water and shall sample the well monthly. These obligations shall terminate if either (i) the 1,4-dioxane concentration in the well drops below 3.0 ug/L during two consecutive sampling events or (ii) the property is connected to a permanent alternative water supply. Furthermore, Defendant shall work with EGLE and municipal authorities to evaluate long-term and economically reasonable water supply options.

vi. If 1,4-dioxane is detected at concentrations above 7.2 ug/L in an active residential drinking water well and/or at concentrations above 350 ug/L in an active non-residential drinking water well, Defendant shall conduct the Verification Process as defined in Section III.X for each such private drinking water well. If the detection above 7.2 ug/L is verified, Defendant shall monitor each such private drinking water well on a monthly basis if not already doing so and shall continue monthly monitoring until the well is no longer considered at risk under Section V.B.4.e.i. If 1,4-dioxane is detected at concentrations above 7.2 ug/L in four consecutive monthly samples or any seven monthly samples in any 12 month period, Defendant shall provide at its expense a long-term alternative water supply to the property serviced by the affected well. Such long-term alternative water supply may be in the form of a township water connection, installation of a new drinking water well completed in an uncontaminated portion of the subsurface, or a point-of-use treatment system, or other long-term drinking water supply option approved by EGLE. Defendant shall also provide at its expense bottled water to the property owner until the property is serviced by a long-term alternative water supply.

5. Groundwater Contamination Delineation. Additional delineation of the extent of Groundwater Contamination, including within the plume boundary, and/or characterization of source areas shall not be required except as provided in Section V.B.3.c. EGLE

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reserves the right to petition the Court to require additional work if there are findings that EGLE determines warrant additional Groundwater Contamination delineation.

C. Termination of Groundwater Extraction Systems

1. Defendant may only terminate the Groundwater Extraction Systems listed below as provided below:

a. Termination Criteria for Evergreen Wells/Maple Road Wells/Wagner Road Wells. Except as otherwise provided pursuant to Section V.C.2, Defendant may only reduce (below the stated minimum purge rates) or terminate operation of the Evergreen Wells/Maple Road Wells as provided in Section V.A.3.f.i. and of the Wagner Road Wells as provided in Section V.A.8.

b. Termination Criteria for Western Area. Except as otherwise provided pursuant to Section V.C.2, and subject to Section V.B.1., Defendant shall not terminate all groundwater extraction in the Western Area until all of the following are established:

i. Defendant can establish to EGLE's satisfaction that groundwater extraction is no longer necessary to prevent the expansion of Groundwater Contamination prohibited under Section V.B.1;

ii. Defendant's demonstration shall also establish that groundwater extraction is no longer necessary to satisfy the Groundwater-Surface Water Interface Objective under Section V.B.2; and

iii. Defendant has the land use or resource use restrictions described in Section V.B.3.a in place.

Defendant's request to terminate extraction in the Western Area must be made in writing

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for review and approval pursuant to Section X of this Consent Judgment. The request must include all supporting documentation demonstrating compliance with the termination criteria. Defendant may initiate dispute resolution pursuant to Section XVI of this Consent Judgment if EGLE does not approve the Defendant's request/demonstration. Defendant may terminate Western Area groundwater extraction upon: (i) receipt of notice of approval from EGLE; or (ii) receipt of notice of a final decision approving termination pursuant to dispute resolution procedures of Section XVI of this Consent Judgment.

2. Modification of Termination Criteria/Cleanup Criteria. The termination criteria provided in Section V.C.1. and/or the definition of "Groundwater Contamination" or "Soil Contamination" may be modified as follows:

a. After entry of this Fourth Amended Consent Judgment, Defendant may propose to EGLE that the termination criteria be modified based upon either or both of the following:

i. a change in legally applicable or relevant and appropriate regulatory criteria since the entry of this Fourth Amended Consent Judgment; for purposes for this Subsection, "regulatory criteria" shall mean any promulgated standard criterion or limitation under federal or state environmental law specifically applicable to 1,4-dioxane; or

ii. scientific evidence newly released since the date of the United States Environmental Protection Agency's IRIS risk assessment for 1,4-dioxane (August 11, 2010), which, in combination with the existing scientific evidence, establishes that different termination criteria/definitions for 1,4-dioxane are appropriate and will assure protection of public health, safety, welfare, the environment, and natural resources.

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b. Defendant shall submit any such proposal in writing, together with supporting documentation, to EGLE for review.

c. If the Defendant and EGLE agree to a proposed modification, the agreement shall be made by written Stipulation filed with the Court pursuant to Section XXIV of this Consent Judgment.

d. If EGLE disapproves the proposed modification, Defendant may invoke the dispute resolution procedures contained in Section XVI of this Consent Judgment. Alternatively, if EGLE disapproves a proposed modification, Defendant may seek to have the dispute resolved pursuant to Subsection V.C.3.

3. If the Defendant invokes the procedures of this Subsection, Defendant and EGLE shall prepare a list of the items of difference to be submitted to a scientific advisory panel for review and recommendations. The scientific advisory panel shall be comprised of three persons with scientific expertise in the discipline(s) relevant to the items of difference. No member of the panel may be a person who has been employed or retained by either Party, except persons compensated solely for providing peer review of the Hartung Report, in connection with the subject of this litigation.

a. If this procedure is invoked, each Party shall, within 14 days, select one member of the panel. Those two members of the panel shall select the third member. Defendant shall, within 28 days after this procedure is invoked, establish a fund of at least $10,000.00, from which each member of the panel shall be paid reasonable compensation for their services, including actual and necessary expenses. If EGLE and Defendant do not agree concerning the qualifications, eligibility, or compensation of panel members, they may invoke the

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dispute resolution procedures contained in Section XVI of this Consent Judgment.

b. Within a reasonable period of time after selection of all panel members, the panel shall confer and establish a schedule for acceptance of submissions from EGLE and the Defendant completing review and making recommendations on the items of difference.

c. The scientific advisory panel shall make its recommendations concerning resolution of the items of difference to EGLE and the Defendant. If both EGLE and Defendant accept those recommendations, the termination criteria shall be modified in accordance with such recommendations. If EGLE and the Defendant disagree with the recommendations, EGLE's proposed resolution of the dispute shall be final unless Defendant invokes the procedures for judicial dispute resolution as provided in Section XVI of this Consent Judgment. The recommendation of the scientific advisory panel and any related documents shall be submitted to the Court as part of the record to be considered by the Court in resolving the dispute.

D. Post-Termination Monitoring

1. Eastern Area

a. Prohibition Zone Containment Objective. Except as otherwise provided pursuant to Section V.C.2, Defendant shall continue to monitor the Groundwater Contamination as it migrates within the Prohibition Zone until all approved monitoring wells are below 7.2 ug/L or such other applicable criterion for 1,4-dioxane for six consecutive months, or Defendant can establish to EGLE's satisfaction that continued monitoring is not necessary to satisfy the Prohibition Zone Containment Objective. Defendant's request to terminate monitoring must be made in writing for review and approval pursuant to Section X of this Consent Judgment.

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Defendant may initiate dispute resolution pursuant to Section XVI of this Consent Judgment if EGLE does not approve its termination request.

b. Groundwater-Surface Water Interface Objective. Except as provided in Section V.D.1.a, for Prohibition Zone monitoring wells, post-termination monitoring is required for Eastern Area wells for a minimum of ten years after purging is terminated under Section V.C.1.b. with cessation subject to EGLE approval. Defendant's request to terminate monitoring must be made in writing for review and approval pursuant to Section X of this Consent Judgment. Defendant may initiate dispute resolution pursuant to Section XVI of this Consent Judgment if EGLE does not approve its termination request.

2. Western Area. Post-termination monitoring will be required for a minimum of ten years after termination of extraction with cessation subject to EGLE approval. Except as otherwise provided pursuant to Section V.C.2, Defendant shall continue to monitor the groundwater in accordance with approved monitoring plan(s), to verify that it remains in compliance with the Non-Expansion Cleanup Objective set forth in Section V.B.1 and the Groundwater-Surface Water Interface Objective set forth in Section V.B.2. If any exceedance is detected, Defendant shall immediately notify EGLE and take whatever steps are necessary to comply with the requirements of Section V.B.1, or V.B.2, as applicable.

E. Quality Assurance Project Plan (QAPP). Defendant previously voluntarily submitted to EGLE for review and approval a QAPP, which is intended to describe the quality control, quality assurance, sampling protocol, and chain of custody procedures that will be used in carrying out the tasks required by this Consent Judgment. EGLE shall review, and Defendant shall revise accordingly, the QAPP to ensure that it is in general accordance with the United States

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Environmental Protection Agency's ("U.S. EPA" or "EPA") "Guidance for Quality Assurance Project Plans," EPA QA/G-5, December 2002; and American National Standard ANSI/ASQC E4-2004, "Quality Systems For Environmental Data And Technology Programs – Requirements With Guidance For Use."

VI. GELMAN PROPERTY RESPONSE ACTIVITIES

A. Gelman Property Objectives. The objectives for the Gelman Property shall be to prevent the migration of 1,4-dioxane from contaminated soils on the Gelman Property into any aquifer at concentrations or locations that cause non-compliance with the Western Area objectives set forth in Sections V.B.1 and V.B.2.

B. Response Activities.

1. Remedial Systems. Defendant shall design and implement remedial systems at the Gelman Property as necessary to achieve the Gelman Property Objectives.

2. Monitoring. Defendant shall implement an EGLE-approved Compliance Monitoring Plan to verify that the Gelman Property Soil Contamination does not cause or contribute to non-compliance with the Western Area objectives set forth in Sections V.B.1 and V.B.2, and to verify the effectiveness of any implemented remedial system.

VII. COMPLIANCE WITH OTHER LAWS AND PERMITS

A. Defendant shall undertake all activities pursuant to this Consent Judgment in accordance with the requirements of all applicable laws, regulations, and permits.

B. Defendant shall apply for all permits necessary for implementation of this Consent Judgment including, without limitation, surface water discharge permit(s) and air discharge permit(s).

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C. Defendant shall include in all contracts entered into by the Defendant for Remedial Action required under this Consent Judgment (and shall require that any contractor include in all subcontracts), a provision stating that such contractors and subcontractors, including their agents and employees, shall perform all activities required by such contracts or subcontracts in compliance with and all applicable laws, regulations, and permits. Defendant shall provide a copy of relevant approved work plans to any such contractor or subcontractor.

D. The Plaintiffs agree to provide reasonable cooperation and assistance to the Defendant in obtaining necessary approvals and permits for Remedial Action. Plaintiffs shall not unreasonably withhold or delay any required approvals or permits for Defendant's performance of Remedial Action. Plaintiffs expressly acknowledge that one or more of the following permits and approvals may be a necessary prerequisite for one or more of the Response Activities set forth in this Consent Judgment:

1. Renewal of NPDES Permit No. MI-0048453 with respect to the discharge of treated groundwater to the unnamed tributary of Honey Creek.

2. An Air Permit for discharges of contaminants to the atmosphere for vapor extraction systems, if such systems are part of the remedial design.

3. A Wetlands Permit if necessary for construction of the Marshy Area system or the construction of facilities as part of the Western Systems;

4. An Industrial User's Permit to be issued by the City of Ann Arbor for use of the sewer to dispose of treated or untreated purged groundwater from the Evergreen and/or Maple Road Wells. Plaintiffs have no objection to receipt by the Ann Arbor Wastewater Treatment Plant of the purged groundwater extracted pursuant to the terms and conditions of this Consent

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Judgment, and acknowledge that receipt of the purged groundwater would not necessitate any change in current and proposed residual management programs of the Ann Arbor Wastewater Treatment Plant.

5. Permit(s) or permit exemptions to be issued by EGLE to authorize the reinjection of purged and treated groundwater in the Eastern Area and Western Area.

6. Surface water discharge permit(s) for discharge into surface waters in the area of Little Lake, if necessary.

7. Approval of the City of Ann Arbor and the Washtenaw County Drain Commissioner to use storm drains or sewers for the remedial programs.

8. Washtenaw County permits as necessary for the installation of extraction wells, monitoring wells, and borings.

VIII. SAMPLING AND ANALYSIS

Defendant shall make available to EGLE the results of all sampling, tests, and/or other data generated in the performance or monitoring of any requirement under this Consent Judgment. Sampling data generated consistent with this Consent Judgment shall be admissible in evidence in any proceeding related to enforcement of this Consent Judgment without waiver by any Party of any objection as to weight or relevance. EGLE and/or their authorized representatives, at their discretion, may take split or duplicate samples and observe the sampling event. EGLE shall make available to Defendant the results of all sampling, tests, and/or other data generated in the performance or monitoring of any requirement under this Consent Judgment. Defendant will provide EGLE with reasonable notice of changes in the schedule of data collection activities included in the progress reports submitted pursuant to Section XII.

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IX. ACCESS

A. From the effective date of this Consent Judgment, EGLE, its authorized employees, agents, representatives, contractors, and consultants, upon presentation of proper identification, shall have the right at all reasonable times to enter the Site and any property to which access is required for the implementation of this Consent Judgment, to the extent access to the property is owned, controlled by, or available to the Defendant, for the purpose of conducting any activity authorized by this Consent Judgment, including, but not limited to:

1. Monitoring of the Remedial Action or any other activities taking place pursuant to this Consent Judgment on the property;
2. Verification of any data or information submitted to EGLE;
3. Conduct of investigations related to 1,4-dioxane concentrations at the Site;
4. Collection of samples;
5. Assessment of the need for, or planning and implementing of, Response Activities at the Site; and
6. Inspection and copying of non-privileged documents including records, operating logs, contracts, or other documents required to assess Defendant's compliance with this Consent Judgment.

All Parties with access to the Site or other property pursuant to this Section shall comply with all applicable health and safety laws and regulations.

B. To the extent that the Site or any other area where Remedial Action is to be performed by the Defendant under this Consent Judgment is owned or controlled by persons other than the Defendant, Defendant shall use its best efforts to secure from such persons access for

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Defendant, EGLE, and their authorized employees, agents, representatives, contractors, and consultants. Defendant shall provide EGLE with a copy of each access agreement secured pursuant to this Section. For purposes of this Section, "best efforts" includes, but is not limited to, seeking judicial assistance to secure such access pursuant to MCL 324.20135a.

X. APPROVALS OF SUBMISSIONS

Upon receipt of any plan, report, or other item that is required to be submitted for approval pursuant to this Consent Judgment, as soon as practicable, but in no event later than 56 days after receipt of such submission, EGLE will: (1) approve the submission or (2) submit to Defendant changes in the submission that would result in approval of the submission. EGLE will (1) approve a feasibility study or plan that proposes a risk based cleanup or a remedy that requires public comment, or (2) submit to Defendant changes in such submittal that would result in approval in the time provided under Part 201. If EGLE does not respond within 56 days, Defendant may submit the matter to dispute resolution pursuant to Section XVI. Upon receipt of a notice of approval or changes from EGLE, Defendant shall proceed to take any action required by the plan, report, or other item, as approved or as may be modified to address the deficiencies identified by EGLE. If Defendant does not accept the changes proposed by EGLE, Defendant may submit the matter to dispute resolution pursuant to Section XVI.

XI. PROJECT COORDINATORS

A. Plaintiffs designate Daniel Hamel as EGLE's Project Coordinator. Defendant designates Lawrence Gelb as Defendant's Project Coordinator. Defendant's Project Coordinator shall have primary responsibility for implementation of the Remedial Action at the Site. EGLE's Project Coordinator will be the primary designated representative for Plaintiffs with respect to

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implementation of the Remedial Action at the Site. All communication between Defendant and EGLE, including all documents, reports, approvals, other submissions, and correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Judgment, shall be directed through the Project Coordinators. If any Party changes its designated Project Coordinator, that Party shall provide the name, address, email address and telephone number of the successor in writing to the other Party seven days prior to the date on which the change is to be effective. This Section does not relieve Defendant from other reporting obligations under the law.

B. EGLE may designate other authorized representatives, employees, contractors, and consultants to observe and monitor the progress of any activity undertaken pursuant to this Consent Judgment. EGLE's Project Coordinator shall provide Defendant's Project Coordinator with the names, addresses, telephone numbers, positions, and responsibilities of any person designated pursuant to this Section.

XII. PROGRESS REPORTS

Defendant shall provide to EGLE written quarterly progress reports that shall: (1) describe the actions which have been taken toward achieving compliance with this Consent Judgment during the previous three months; (2) describe data collection and activities scheduled for the next three months; and (3) include all results of sampling and tests and other data received by Defendant, its consultants, engineers, or agents during the previous three months relating to Remedial Action performed pursuant to this Consent Judgment. Defendant shall submit the first quarterly report to EGLE within 120 days after entry of this Consent Judgment, and by the 30th day of the month following each quarterly period thereafter, as feasible, until termination of this

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Consent Judgment as provided in Section XXV.

XIII. RESTRICTIONS ON ALIENATION

A. Defendant shall not sell, lease, or alienate the Gelman Property until: (1) it places an EGLE-approved land use or resource use restrictions on the affected portion(s) of the Gelman Property; and (2) any purchaser, lessee, or grantee provides to EGLE its written agreement providing that the purchaser, lessee, or grantee will not interfere with any term or condition of this Consent Judgment. Notwithstanding any purchase, lease, or grant, Defendant shall remain obligated to comply with all terms and conditions of this Consent Judgment.

B. Any deed, title, or other instrument of conveyance regarding the Gelman Property shall contain a notice that Defendant's Property is the subject of this Consent Judgment, setting forth the caption of the case, the case number, and the court having jurisdiction herein.

XIV. FORCE MAJEURE

Any delay attributable to a Force Majeure shall not be deemed a violation of Defendant's obligations under this Consent Judgment.

A. "Force Majeure" is defined as an occurrence or nonoccurrence arising from causes beyond the control of Defendant or of any entity controlled by the Defendant performing Remedial Action, such as Defendant's employees, contractors, and subcontractors. Such occurrence or nonoccurrence includes, but is not limited to: (1) an Act of God; (2) untimely review of permit applications or submissions; (3) acts or omissions of third parties for which Defendant is not responsible; (4) insolvency of any vendor, contractor, or subcontractor retained by Defendant as part of implementation of this Consent Judgment; and (5) delay in obtaining necessary access agreements under Section IX that could not have been avoided or overcome by due diligence.

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"Force Majeure" does not include unanticipated or increased costs, changed financial circumstances, or nonattainment of the treatment and termination standards set forth in Sections V and VI.

B. When circumstances occur that Defendant believes constitute Force Majeure, Defendant shall notify EGLE by telephone of the circumstances within 48 hours after Defendant first believes those circumstances to apply. Within 14 working days after Defendant first believes those circumstances to apply, Defendant shall supply to EGLE, in writing, an explanation of the cause(s) of any actual or expected delay, the anticipated duration of the delay, the measures taken and the measures to be taken by Defendant to avoid, minimize, or overcome the delay, and the timetable for implementation of such measures. Failure of Defendant to comply with the written notice provisions of this Section shall constitute a waiver of Defendant's right to assert a claim of Force Majeure with respect to the circumstances in question.

C. A determination by EGLE that an event does not constitute Force Majeure, that a delay was not caused by Force Majeure, or that the period of delay was not necessary to compensate for Force Majeure may be subject to dispute resolution under Section XVI of this Consent Judgment.

D. EGLE shall respond, in writing, to any request by Defendant for a Force Majeure extension within 30 days of receipt of the Defendant's request. If EGLE does not respond within that time period, Defendant's request shall be deemed granted. If EGLE agrees that a delay is or was caused by Force Majeure, Defendant's delays shall be excused, stipulated penalties shall not accrue, and EGLE shall provide Defendant such additional time as may be necessary to compensate for the Force Majeure event.

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E. Delay in achievement of any obligation established by this Consent Judgment shall not automatically justify or excuse delay in achievement of any subsequent obligation unless the subsequent obligation automatically follows from the delayed obligation.

XV. REVOCATION OR MODIFICATION OF LICENSES OR PERMITS

Any delay attributable to the revocation or modification of licenses or permits obtained by Defendant to implement remediation actions as set forth in this Consent Judgment shall not be deemed a violation of Defendant's obligations under this Consent Judgment, provided that such revocation or modification arises from causes beyond the control of Defendant or of any entity controlled by the Defendant performing Remedial Action, such as Defendant's employees, contractors, and subcontractors.

A. Licenses or permits that may need to be obtained or modified by Defendant to implement the Remedial Actions are those specified in Section VII.D. and licenses, easements, and other agreements for access to property or rights of way on property necessary for the installation of remedial systems required by this Consent Judgment.

B. A revocation or modification of a license or permit within the meaning of this Section means withdrawal of permission, denial of permission, a limitation or a change in license or permit conditions that delays the implementation of all or part of a remedial system. Revocation or modification due to Defendant's violation of a license or permit (or any conditions of a license or permit) shall not constitute a revocation or modification covered by this Section.

C. When circumstances occur that Defendant believes constitute revocation or modification of a license or permit, Defendant shall notify EGLE by telephone of the circumstances within 48 hours after Defendant first believes those circumstances to apply. Within

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14 working days after Defendant first believes those circumstances to apply, Defendant shall supply to EGLE, in writing, an explanation of the cause(s) of any actual or expected delay, the anticipated duration of the delay, the measures taken and the measures to be taken by Defendant to avoid, minimize, or overcome the delay, and the timetable for implementation of such measures. Failure of Defendant to comply with the written notice provisions of this Section shall constitute a waiver of Defendant's right to assert a claim of revocation or modification of a license or permit with respect to the circumstances in question.

D. A determination by EGLE that an event does not constitute revocation or modification of a license or permit, that a delay was not caused by revocation or modification of a license or permit, or that the period of delay was not necessary to compensate for revocation or modification of a license or permit may be subject to dispute resolution under Section XVI of this Consent Judgment.

E. EGLE shall respond, in writing, to any request by Defendant for a revocation or modification of a license or permit extension within 30 days of receipt of the Defendant's request. If EGLE does not respond within that time period, Defendant's request shall be deemed granted. If EGLE agrees that a delay is or was caused by revocation or modification of a license or permit, Defendant's delays shall be excused, stipulated penalties shall not accrue, and EGLE shall provide Defendant such additional time as may be necessary to compensate for the revocation or modification of a license or permit.

F. Delay in achievement of any obligation established by this Consent Judgment shall not automatically justify or excuse delay in achievement of any subsequent obligation unless the subsequent obligation automatically follows from the delayed obligation.

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XVI. DISPUTE RESOLUTION

A. The dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under this Consent Judgment and shall apply to all provisions of this Consent Judgment except for disputes related to Prohibition Zone boundary modification under Sections V.A.2.f and V.A.6, whether or not particular provisions of this Consent Judgment in question make reference to the dispute resolution provisions of this Section. Any dispute that arises under this Consent Judgment initially shall be the subject of informal negotiations between the Parties. The period of negotiations shall not exceed ten working days from the date of written notice by EGLE or the Defendant that a dispute has arisen. This period may be extended or shortened by agreement of EGLE or the Defendant.

B. Immediately upon expiration of the informal negotiation period (or sooner if upon agreement of the parties), EGLE shall provide to Defendant a written statement setting forth EGLE's proposed resolution of the dispute. Such resolution shall be final unless, within 15 days after receipt of EGLE's proposed resolution (clearly identified as such under this Section), Defendant files a petition for resolution with the Washtenaw County Circuit Court setting forth the matter in dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Judgment.

C. Within ten days of the filing of the petition, EGLE may file a response to the petition, and unless a dispute arises from the alleged failure of EGLE to timely make a decision, EGLE will submit to the Court all documents containing information related to the matters in dispute, including documents provided to EGLE by Defendant. In the event of a dispute arising

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from the alleged failure of EGLE to timely make a decision, within ten days of filing of the petition, each party shall submit to the Court correspondence, reports, affidavits, maps, diagrams, and other documents setting forth facts pertaining to the matters in dispute. Those documents and this Consent Judgment shall comprise the record upon which the Court shall resolve the dispute. Additional evidence may be taken by the Court on its own motion or at the request of either party if the Court finds that the record is incomplete or inadequate. Review of the petition shall be conducted by the Court and shall be confined to the record. The review shall be independent of any factual or legal conclusions made by the Court prior to the date of entry of this Consent Judgment.

D. The Court shall uphold the decision of EGLE on the issue in dispute unless the Court determines that the decision is any of the following:

1. Inconsistent with this Consent Judgment;
2. Not supported by competent, material, and substantial evidence on the whole record;
3. Arbitrary, capricious, or clearly an abuse or unwarranted exercise of discretion; or
4. Affected by other substantial and material error of law.

E. The filing of a petition for resolution of a dispute shall not by itself extend or postpone any obligation of Defendant under this Consent Judgment, provided, however, that payment of stipulated penalties with respect to the disputed matter shall be stayed pending resolution of the dispute. Notwithstanding the stay of payment, stipulated penalties shall accrue as provided in Section XVII. Stipulated penalties that have accrued with respect to the matter in

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dispute shall not be assessed by the Court and shall be dissolved if Defendant prevails on the matter. The Court may also direct that stipulated penalties shall not be assessed and paid as provided in Section XVII upon a determination that there was a substantial basis for Defendant's position on the disputed matter.

XVII. STIPULATED PENALTIES

A. Except as otherwise provided, if Defendant fails or refuses to comply with any term or condition in Sections IV, V, VI, VII, or VIII, or with any plan, requirement, or schedule established pursuant to those Sections, then Defendant shall pay stipulated penalties in the following amounts for each working day for every failure or refusal to comply or conform:

Period of Delay	Penalty Per Violation Per Day
1st through 15th Day	$ 1,000
15th through 30th Day	$ 1,500
Beyond 30 Days	$ 2,000

B. Except as otherwise provided if Defendant fails or refuses to comply with any other term or condition of this Consent Judgment, Defendant shall pay to EGLE stipulated penalties of $500.00 per working day for each and every failure to comply.

C. If Defendant is in violation of this Consent Judgment, Defendant shall notify EGLE of any violation no later than five working days after first becoming aware of such violation, and shall describe the violation.

D. Stipulated penalties shall begin to accrue upon the next day after performance was due or other failure or refusal to comply occurred. Penalties shall continue to accrue until the final day of correction of the noncompliance. Separate penalties shall accrue for each separate failure or refusal to comply with the terms and conditions of this Consent Judgment. Penalties may be

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waived in whole or in part by EGLE or may be dissolved by the Court pursuant to Section XVII.

E. Stipulated penalties shall be paid no later than 14 working days after receipt by Defendant of a written demand from EGLE. Defendant shall make payment by transmitting a check in the amount due, payable to the "State of Michigan," addressed to the Revenue Control Unit; Finance Section, Administration Division; Michigan Department of Environment, Great Lakes, and Energy; P.O. Box 30657; Lansing, MI 48909-8157. The check shall be transmitted via Courier to the Revenue Control Unit; Finance Section, Administration Division; Michigan Department of Environment, Great Lakes, and Energy; Constitution Hall, 5th Floor South Tower; 525 West Allegan Street; Lansing, MI 48933-2125. To ensure proper credit, Defendant shall include the settlement ID - ERD1902 on the payment.

F. Plaintiffs agree that, in the event that an act or omission of Defendant constitutes a violation of this Consent Judgment subject to stipulated penalties and a violation of other applicable law, Plaintiffs will not impose upon Defendant for that violation both the stipulated penalties provided under this Consent Judgment and the civil penalties permitted under other applicable laws. EGLE reserves the right to pursue any other remedy or remedies to which they may be entitled under this Consent Judgment or any applicable law for any failure or refusal of the Defendant to comply with the requirements of this Consent Judgment.

XVIII. PLAINTIFFS' COVENANT NOT TO SUE AND RESERVATION OF RIGHTS

A. Except as otherwise provided in this Consent Judgment, Plaintiffs covenant not to sue or take administrative action for Covered Matters against Defendant, its officers, employees, agents, directors, and any persons acting on its behalf or under its control.

B. "Covered Matters" shall mean any and all claims available to Plaintiffs under

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federal and state law arising out of the subject matter of the Plaintiffs' Complaint with respect to the following:

1. Claims for injunctive relief to address soil, groundwater, and surface water contamination at or emanating from the Gelman Property;

2. Claims for civil penalties and costs;

3. Claims for natural resource damages;

4. Claims for reimbursement of response costs incurred prior to entry of this Consent Judgment or incurred by Plaintiffs for provision of alternative water supplies in the Evergreen Subdivision; and

5. Claims for reimbursement of costs incurred by Plaintiffs for overseeing the implementation of this Consent Judgment.

C. "Covered Matters" does not include:

1. Claims based upon a failure by Defendant to comply with the requirements of this Consent Judgment;

2. Liability for violations of federal or state law which occur during implementation of the Remedial Action; and

3. Liability arising from the disposal, treatment, or handling of any hazardous substance removed from the Site.

D. With respect to liability for alleged past violations of law, this covenant not to sue shall take effect on the effective date of this Consent Judgment. With respect to future liability for performance of response activities required to be performed under this Consent Judgment, the covenant not to sue shall take effect upon issuance by EGLE of the Certificate of Completion in

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accordance with Section XXV.

E. Notwithstanding any other provision in this Consent Judgment: (1) EGLE reserves the right to institute proceedings in this action or in a new action seeking to require Defendant to perform any additional response activity at the Site; and (2) EGLE reserves the right to institute proceedings in this action or in a new action seeking to reimburse EGLE for response costs incurred by the State of Michigan relating to the Site. EGLE's rights in Sections XVIII.E.1 and E.2 apply if the following conditions are met:

1. For proceedings prior to EGLE's certification of completion of the Remedial Action concerning the Site,

a. (i) conditions at the Site, previously unknown to EGLE, are discovered after entry of this Consent Judgment, (ii) new information previously unknown to EGLE is received after entry of this Consent Judgment, or (iii) EGLE adopts one or more new, more restrictive cleanup criteria for 1,4-dioxane pursuant to Part 201 after entry of this Consent Judgment; and

b. these previously unknown conditions, new information, and/or change in criteria indicate that the Remedial Action is not protective of the public health, safety, welfare, and the environment; and

2. For proceedings subsequent to EGLE's certification of completion of the Remedial Action concerning the Site,

a. (i) conditions at the Site, previously unknown to EGLE, are discovered after certification of completion by EGLE, (ii) new information previously unknown to EGLE is received after certification of completion by EGLE, or (iii) EGLE adopts one or more

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new, more restrictive cleanup criteria for 1,4-dioxane pursuant to Part 201, after certification of completion by EGLE; and

b. these previously unknown conditions, new information, and/or change in criteria indicate that the Remedial Action is not protective of the public health, safety, welfare, and the environment.

If EGLE adopts one or more new, more restrictive, cleanup criteria, EGLE's rights in Sections XVIII.E.1 and E.2 shall also be subject to Defendant's right to seek another site-specific criterion(ia) that is protective of public health, safety, welfare, and the environment and/or to argue that EGLE has not made the demonstration(s) required under this Section.

F. Nothing in this Consent Judgment shall in any manner restrict or limit the nature or scope of Response Activities that may be taken by EGLE in fulfilling its responsibilities under federal and state law, and this Consent Judgment does not release, waive, limit, or impair in any manner the claims, rights, remedies, or defenses of EGLE against a person or entity not a party to this Consent Judgment.

G. Except as expressly provided in this Consent Judgment, EGLE reserves all other rights and defenses that they may have, and this Consent Judgment is without prejudice, and shall not be construed to waive, estop, or otherwise diminish EGLE's right to seek other relief with respect to all matters other than Covered Matters.

XIX. DEFENDANT'S COVENANT NOT TO SUE AND RESERVATION OF RIGHTS

A. Defendant hereby covenants not to sue and agrees not to assert any claim or cause of action against EGLE or any other agency of the State of Michigan with respect to environmental contamination at the Site or response activities relating to the Site arising from this Consent

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Judgment.

B. Notwithstanding any other provision in this Consent Judgment, for matters that are not Covered Matters as defined in Section XVIII.B, or in the event that Plaintiffs institute proceedings as allowed under Section XVIII.E., Defendant reserves all other rights, defenses, or counterclaims that it may have with respect to such matters and this Consent Judgment is without prejudice, and shall not be construed to waive, estop, or otherwise diminish Defendant's right to seek other relief and to assert any other rights and defenses with respect to such other matters.

C. Nothing in this Consent Judgment shall in any way impair Defendant's rights, claims, or defenses with respect to any person not a party to this Consent Judgment.

XX. INDEMNIFICATION, INSURANCE, AND FINANCIAL ASSURANCE

A. Defendant shall indemnify and save and hold harmless the State of Michigan and its departments, agencies, officials, agents, employees, contractors, and representatives from any and all claims or causes of action arising from, or on account of, acts or omissions of Defendant, its officers, employees, agents, and any persons acting on its behalf or under its control in carrying out Remedial Action pursuant to this Consent Judgment. EGLE shall not be held out as a party to any contract entered into by or on behalf of Defendant in carrying out activities pursuant to this Consent Judgment. Neither the Defendant nor any contractor shall be considered an agent of EGLE. Defendant shall not indemnify or save and hold harmless Plaintiffs from their own negligence pursuant to this Section.

B. Prior to commencing any Remedial Action on the Gelman Property, Defendant shall secure, and shall maintain for the duration of the Remedial Action, comprehensive general liability insurance with limits of $1,000,000.00, combined single limit, naming as an additional

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insured the State of Michigan. If Defendant demonstrates by evidence satisfactory to EGLE that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then with respect to that contractor or subcontractor, Defendant need provide only that portion, if any, of the insurance described above that is not maintained by the contractor or subcontractor.

C. Financial Assurance

1. Defendant shall be responsible for providing and maintaining financial assurance in a mechanism approved by EGLE in an amount sufficient to cover the estimated cost to assure performance of the response activities required to meet the remedial objectives of this Consent Judgment including, but not limited to, investigation, monitoring, operation and maintenance, and other costs (collectively referred to as "Long-Term Remedial Action Costs"). Defendant shall continuously maintain a financial assurance mechanism ("FAM") until EGLE's Remediation and Redevelopment Division ("RRD") Chief or his or her authorized representative notifies it in writing that it is no longer required to maintain a FAM.

2. The Letter of Credit provided in Attachment K is the initial FAM approved by EGLE. Defendant shall be responsible for providing and maintaining financial assurance in a mechanism acceptable to EGLE to assure the performance of the Long Term Remedial Action Costs required by Defendant's selected remedial action.

3. The FAM shall remain in an amount sufficient to cover Long Term Remedial Action Costs for a 30-year period. Unless Defendant opts to use and satisfies the Financial Test or Financial Test/Corporate Guarantee as provided in Section XX.C.8, the FAM shall remain in a form that allows EGLE to immediately contract for the response activities for

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which financial assurance is required in the event Defendant fails to implement the required tasks, subject to Defendant's rights under Sections XIV and XVI.

4. Within 120 days of the Effective Date of this Fourth Amended Consent Judgment, Defendant shall provide EGLE with an estimate of the amount of funds necessary to assure Long Term Remedial Action Costs for the following 30-year period based upon an annual estimate of costs for the response activities required by this Fourth Amended Consent Judgment as if they were to be conducted by a person under contract to EGLE (the "Updated Long Term Remedial Action Cost Estimate"). The Updated Long Term Remedial Action Cost Estimate shall include all assumptions and calculations used in preparing the cost estimate and shall be signed by an authorized representative of Defendant who shall confirm the validity of the data. Defendant may only use a present worth analysis if an interest accruing FAM is selected. Within 60 days after Defendant's submittal of the Updated Long Term Remedial Action Cost Estimate, Defendant shall capitalize or revise the FAM in a manner acceptable to EGLE to address Long Term Remedial Action Costs unless otherwise notified by EGLE. If EGLE disagrees with the conclusions of the Updated Long Term Remedial Action Cost Estimate, Defendant shall capitalize the FAM to a level acceptable to EGLE within 30 days of EGLE notification, subject to Dispute Resolution under Section XVI.

5. Sixty days prior to the 5-year anniversary of the Effective Date of this Fourth Amended Consent Judgment and each subsequent 5-year anniversary, Defendant shall provide to EGLE a report containing the actual Long Term Remedial Action Costs for the previous 5-year period and an estimate of the amount of funds necessary to assure Long Term Remedial Action Costs for the following 30-year period given the financial trends in existence at the time of

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preparation of the report ("Long Term Remedial Action Cost Report"). The cost estimate shall be based upon an annual estimate of maximum costs for the response activities required by this Fourth Amended Consent Judgment as if they were to be conducted by a person under contract to EGLE, provided that, if Defendant is using the Financial Test or Corporate Guarantee/Financial Test under Section XX.C.8, below, Defendant may use an estimate on its internal costs to satisfy the Financial Test. The Long Term Remedial Action Cost Report shall also include all assumptions and calculations used in preparing the necessary cost estimate and shall be signed by an authorized representative of Defendant who shall confirm the validity of the data. Defendant may only use a present worth analysis if an interest accruing FAM is selected.

6. Within 60 days after Defendant's submittal of the Long Term Remedial Action Cost Report to EGLE, Defendant shall capitalize or revise the FAM in a manner acceptable to EGLE to address Long Term Remedial Action Costs consistent with the conclusions of the Long Term Remedial Action Cost Report unless otherwise notified by EGLE. If EGLE disagrees with the conclusions of the Long Term Remedial Action Cost Report, Defendant shall capitalize the FAM to a level acceptable to EGLE within 30 days of EGLE notification, subject to dispute resolution under Section XVI. If, at any time, EGLE determines that the FAM does not secure sufficient funds to address Long Term Remedial Action Costs, Defendant shall capitalize the FAM or provide an alternate FAM to secure any additional costs within 30 days of request by EGLE, subject to dispute resolution under Section XVI.

7. If, pursuant to the Long Term Remedial Action Cost Report, Defendant can demonstrate that the FAM provides funds in excess of those needed for Long Term Remedial Action Costs, Defendant may request a modification in the amount. Any requested FAM

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modifications must be accompanied by a demonstration that the proposed FAM provides adequate funds to address future Long Term Remedial Action Costs. Upon EGLE approval of the request, Defendant may modify the FAM as approved by EGLE. Modifications to the FAM pursuant to this Section shall be approved by EGLE RRD Chief or his or her authorized representative, subject to dispute resolution under Section XVI.

8. If Defendant chooses to use the Financial Test or Corporate Guarantee/Financial Test attached as Attachment L (hereinafter, the term "Financial Test" refers to both an independent financial test or a financial test utilized in conjunction with a corporate guarantee), Defendant shall, within 90 days after the end of Defendant's next fiscal year and the end of each succeeding fiscal year, submit to EGLE the necessary forms and supporting documents to demonstrate to the satisfaction of EGLE that Defendant can continue to meet the Financial Test requirements. If Defendant can no longer meet the financial test requirements, Defendant shall submit a proposal for an alternate FAM to satisfy its financial obligations with respect to this Consent Judgment.

9. If the Financial Test is being used as the FAM, EGLE, based on a reasonable belief that Defendant may no longer meet the requirements for the Financial Test, may require reports of financial condition at any time from Defendant, and/or require Defendant to submit updated Financial Test information to determine whether it meets the Financial Test criteria. Defendant shall provide, with reasonable promptness to EGLE, any other data and information that may reasonably be expected to materially adversely affect Defendant's ability to meet the Financial Test requirements. If EGLE finds that Defendant no longer meets the Financial Test requirements, Defendant shall, within 30 days after notification from EGLE, submit a proposal for

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an alternate FAM to satisfy its financial obligations with respect to this Consent Judgment, subject to dispute resolution under Section XVI.

10. If the Financial Test/Corporate Guarantee is used as the FAM, Defendant shall comply with the terms of the Corporate Guarantee. The Corporate Guarantee shall remain in place until Long-Term Remedial Action Costs are no longer required or Defendant establishes an alternate FAM acceptable to EGLE.

11. If Defendant wishes to change the type of FAM or establish a new FAM, Defendant shall submit a request to EGLE for approval. Upon EGLE approval of the request, Defendant may change the type of FAM or establish the new FAM as approved by EGLE. Modifications to the FAM pursuant to this Section shall be approved by EGLE RRD Chief or his or her authorized representative, subject to dispute resolution under Section XVI.

12. If Defendant dissolves or otherwise ceases to conduct business and fails to make arrangements acceptable to EGLE for the continued implementation of all activities required by this Consent Judgment, all rights under this Consent Judgment regarding the FAM shall immediately and automatically vest in EGLE in accordance with the FAM.

XXI. RECORD RETENTION

Defendant, Plaintiffs, and their representatives, consultants, and contractors shall preserve and retain, during the pendency of this Consent Judgment and for a period of ten years after its termination, all records, sampling or test results, charts, and other documents that are maintained or generated pursuant to any requirement of this Consent Judgment, including, but not limited to, documents reflecting the results of any sampling or tests or other data or information generated or acquired by Plaintiffs or Defendant, or on their behalf, with respect to the implementation of this

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Consent Judgment. After the ten-year period of document retention, the Defendant and its successors shall notify EGLE, in writing, at least 90 days prior to the destruction of such documents or records, and upon request, the Defendant and/or its successor shall relinquish custody of all records and documents to EGLE.

XXII. ACCESS TO INFORMATION

Upon request, EGLE and Defendant shall provide to each other copies of or access to all non-privileged documents and information within their possession and/or control or that of their employees, contractors, agents, or representatives, relating to activities at the Site or to the implementation of this Consent Judgment, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Remedial Action. Upon request, Defendant shall also make available to EGLE, their employees, contractors, agents, or representatives with knowledge or relevant facts concerning the performance of the Remedial Action. The Plaintiffs shall treat as confidential all documents provided to Plaintiffs by the Defendant marked "confidential" or "proprietary."

XXIII. NOTICES

Whenever under the terms of this Consent Judgment notice is required to be given or a report, sampling data, analysis, or other document is required to be forwarded by one Party to the other, such notice or document shall be directed to the following individuals at the specified addresses or at such other address as may subsequently be designated in writing:

For Plaintiffs:

Daniel Hamel
Project Coordinator

For Defendants:

Lawrence Gelb
Gelman Sciences Inc.

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Michigan Department
of Environment, Great
Lakes, and Energy,
Remediation and Redevelopment
Division
301 East Louis Glick Highway
Jackson, MI 49201

642 South Wagner Road
Ann Arbor, MI 48106

and

Michael L. Caldwell
Zausmer, P.C.
32255 Northwestern Hwy., Ste. 225
Farmington Hills, MI 48334

Any party may substitute for those designated to receive such notices by providing prior written notice to the other parties.

XXIV. MODIFICATION

This Consent Judgment may not be modified unless such modification is in writing, signed by the Plaintiffs and the Defendant, and approved and entered by the Court. Remedial Plans, work plans, or other submissions made pursuant to this Consent Judgment may be modified by mutual agreement of the Defendant and EGLE.

XXV. CERTIFICATION AND TERMINATION

A. When Defendant determines that it has completed all Remedial Action required by this Consent Judgment, Defendant shall submit to EGLE a Notification of Completion and a draft final report. The draft final report must summarize all Remedial Action performed under this Consent Judgment and the performance levels achieved. The draft final report shall include or refer to any supporting documentation.

B. Upon receipt of the Notification of Completion, EGLE will review the Notification of Completion and the accompanying draft final report, any supporting documentation, and the actual Remedial Action performed pursuant to this Consent Judgment. After conducting this

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review, and not later than three months after receipt of the Notification of Completion, EGLE shall issue a Certificate of Completion upon a determination by EGLE that Defendant has completed satisfactorily all requirements of this Consent Decree, including, but not limited to, completion of all Remedial Action, achievement of all termination and treatment standards required by this Consent Judgment, compliance with all terms and conditions of this Consent Judgment, and payment of any and all stipulated penalties owed to EGLE. If EGLE does not respond to the Notification of Completion within three months after receipt of the Notification of Completion, Defendant may submit the matter to dispute resolution pursuant to Section XVI. This Consent Judgment shall terminate upon motion and order of this Court after issuance of the Certificate of Completion. Upon issuance, the Certificate of Completion may be recorded.

XXVI. EFFECTIVE DATE

The effective date of this Consent Judgment shall be the date upon which this Consent Judgment is entered by the Court.

XXVII. SEVERABILITY

The provisions of this Consent Judgment shall be severable. Should any provision be declared by a court of competent jurisdiction to be inconsistent with federal or state law, and therefore unenforceable, the remaining provisions of this Consent Judgment shall remain in full force and effect.

XXVIII. SIGNATORIES

Each undersigned representatives of a Party to this Consent Judgment certifies that he or she is fully authorized by the Party to enter into this Consent Judgment and to legally bind such Party to the respective terms and conditions of this Consent Judgment.

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STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

ATTORNEY GENERAL FOR THE STATE OF MICHIGAN *ex rel.* MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY,

Plaintiffs,

-v-

File No. 88-34734-CE
Honorable Timothy P. Connors

GELMAN SCIENCES INC.,
a Michigan Corporation,

Defendant.

Brian J. Negele (P41846)
Michigan Department of Attorney General
525 W. Ottawa St.
PO Box 30212
Lansing, MI 48909-7712
Telephone: (517) 335-7664
Attorney for the State of Michigan

Michael L. Caldwell (P40554)
Zausmer, P.C.
32255 Northwestern Hwy.
Suite 225
Farmington Hills, MI 48334
Telephone: (248) 851-4111
Attorney for Defendant

FOURTH AMENDED AND RESTATED CONSENT JUDGMENT

The Parties enter this Fourth Amended and Restated Consent Judgment ("Consent Judgment" or "Fourth Amended Consent Judgment") in recognition of, and with the intention of, furtherance of the public interest by (1) addressing environmental concerns raised in Plaintiffs' Complaint; (2) expediting Remedial Action at the Site; and (3) avoiding further litigation concerning matters covered by this Consent Judgment. Among other things, the Parties enter this Consent Judgment to reflect EGLE's revision of the generic state-wide residential and non-residential generic drinking water cleanup criteria for 1,4-dioxane in groundwater to 7.2 micrograms per liter ("ug/L") and 350 ug/L, respectively, and of the generic groundwater-surface

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water interface cleanup criterion for 1,4-dioxane in groundwater to 280 ug/L. The Parties agree to be bound by the terms of this Consent Judgment and stipulate to its entry by the Court.

The Parties recognize that this Consent Judgment is a compromise of disputed claims. By entering into this Consent Judgment, Defendant does not admit any of the allegations of the Complaint, does not admit any fault or liability under any statutory or common law, and does not waive any rights, claims, or defenses with respect to any person, including the State of Michigan, its agencies, and employees, except as otherwise provided herein. By entering into this Consent Judgment, Plaintiffs do not admit the validity or factual basis of any of the defenses asserted by Defendant, do not admit the validity of any factual or legal determinations previously made by the Court in this matter, and do not waive any rights with respect to any person, including Defendant, except as otherwise provided herein. The Parties agree, and the Court by entering this Consent Judgment finds, that the terms and conditions of the Consent Judgment are reasonable, adequately resolve the environmental issues covered by the Consent Judgment, and properly protect the public interest.

NOW, THEREFORE, upon the consent of the Parties, by their attorneys, it is hereby ORDERED and ADJUDGED:

I. JURISDICTION

A. This Court has jurisdiction over the subject matter of this action. This Court also has personal jurisdiction over the Defendant.

B. This Court shall retain jurisdiction over the Parties and the subject matter of this action to enforce this Consent Judgment and to resolve disputes arising under the Consent Judgment.

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II. PARTIES BOUND

This Consent Judgment applies to, is binding upon, and inures to the benefit of Plaintiffs, Defendant, and their successors and assigns.

III. DEFINITIONS

Whenever the terms listed below are used in this Consent Judgment or the Attachments that are appended hereto, the following definitions shall apply:

A. “Consent Judgment” or ““Fourth Amended Consent Judgment” shall mean this Fourth Amended and Restated Consent Judgment and all Attachments appended hereto. All Attachments to this Consent Judgment are incorporated herein and made enforceable parts of this Consent Judgment.

B. “Day” shall mean a calendar day unless expressly stated to be a working day. “Working Day” shall mean a day other than a Saturday, Sunday, or a State legal holiday. In computing any period of time under this Consent Judgment, where the last day would fall on a Saturday, Sunday, or State legal holiday, the period shall run until the end of the next working day.

C. “Defendant” shall mean Gelman Sciences Inc.

D. “1,4-dioxane” shall mean 1,4-dioxane released to or migrating from the Gelman Property. This term as it is used in this Consent Judgment shall not include any 1,4-dioxane that Defendant establishes by a preponderance of the evidence to have originated from a release for which Defendant is not legally responsible, except to the extent that such 1,4-dioxane is commingled with 1,4-dioxane released to or migrating from the Gelman Property. Nothing in this Consent Judgment shall preclude Defendant’s right to seek contribution or cost recovery

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from other parties responsible for such commingled 1,4-dioxane.

E. “Eastern Area” shall mean the part of the Site that is located east of Wagner Road, including the areas encompassed by the Prohibition Zone.

F. “EGLE” shall mean the Michigan Department of Environment, Great Lakes, and Energy, the successor to the Michigan Department of Environmental Quality, the Michigan Department of Natural Resources and Environment, the Michigan Department of Natural Resources, and the Water Resources Commission. Pursuant to Executive Order 2019-06, effective April 22, 2019, the Michigan Department of Environmental Quality was renamed the Michigan Department of Environment, Great Lakes, and Energy.

G. “Evergreen Subdivision Area” shall mean the residential subdivision generally located north of I-94 and between Wagner and Maple Roads, bounded on the west by Rose Street, on the north by Dexter Road, and on the south and east by Valley Drive.

H. “Gelman” shall mean Gelman Sciences Inc.

I. “Gelman Property” shall mean the real property described in Attachment A, where Defendant formerly operated a manufacturing facility in Scio Township, Michigan. The Defendant sold portions of the property and retains one parcel only for purposes of operating a water treatment system (the “Wagner Road Treatment Facility”).

J. “Generic GSI Criterion” shall mean the generic groundwater-surface water interface (“GSI”) cleanup criterion for 1,4-dioxane of 280 ug/L established pursuant to MCL 324.20120e(1)(a).

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K. “Groundwater Contamination” shall mean the 1,4-dioxane in the groundwater at a concentration in excess of 7.2 ug/L, as determined by the analytical method(s) described in Attachment B to this Consent Judgment, subject to review and approval by EGLE.

L. “Municipal Water Connection Contingency Plan” or “MWCCP” shall mean a contingency plan developed to identify the steps necessary to connect properties that rely on a private drinking water well to municipal water in the event those wells are threatened by 1,4-dioxane concentrations in excess of the applicable drinking water cleanup criterion and the estimated time necessary to implement each step of the water connection process.

M. “Part 201” shall mean Part 201 of the Natural Resources and Environmental Protection Act, MCL 324.20101, *et seq*.

N. “Parties” shall mean Plaintiffs and Defendant.

O. “Plaintiffs” shall mean the Attorney General of the State of Michigan *ex rel.* EGLE.

P. “Prohibition Zone” or “PZ” shall mean the area that is subject to the institutional control established by the Prohibition Zone Order and this Consent Judgment. A map depicting the Prohibition Zone established by this Fourth Amended Consent Judgment is attached as Attachment C.

Q. “Prohibition Zone Order” shall collectively mean the Court’s Order Prohibiting Groundwater Use, dated May 17, 2005, which established a judicial institutional control, and the March 8, 2011 Stipulated Order Amending Previous Remediation Orders, which incorporated the Prohibition Zone Order into this Consent Judgment and applied the institutional control to the Expanded Prohibition Zone, as defined in the Third Amendment to Consent Judgment.

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R. “PZ Boundary Wells” shall mean those wells on or near the boundary of the Prohibition Zone and designated in Section V.A.3.b herein, whose purpose is to detect movement of 1,4-dioxane near the Prohibition Zone boundary.

S. “Remedial Action” or “Remediation” shall mean removal, treatment, and proper disposal of Groundwater and Soil Contamination, land use or resource restrictions, and institutional controls, pursuant to the terms and conditions of this Consent Judgment and work plans approved by EGLE under this Consent Judgment.

T. “Response Activity” or “Response Activities” shall have the same meaning as that term is defined in Part 201, MCL 324.20101(vv).

U. “Sentinel Wells” shall mean those wells designated in Section V.A.3.a herein, whose purpose is to detect movement of 1,4-dioxane toward the Prohibition Zone boundary.

V. “Site” shall mean the Gelman Property and other areas affected by the migration of 1,4-dioxane emanating from the Gelman Property.

W. “Soil Contamination” or “Soil Contaminant” shall mean 1,4-dioxane in soil at a concentration in excess of 500 micrograms per kilogram (“ug/kg”), as determined by the analytical method(s) described in Attachment D or another higher concentration limit derived by means consistent with Mich Admin Code R 299.18 or MCL 324.20120a.

X. “Verification Process” shall mean the process through which Defendant shall test for and verify concentrations of 1,4-dioxane in excess of the applicable threshold at the relevant monitoring and drinking water wells, using the sampling and analytical method(s) described in Attachment B to this Consent Judgment. Specifically, Defendant shall sample the wells on a quarterly basis unless an alternative schedule is agreed upon with EGLE. Groundwater samples

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will be analyzed for 1,4-dioxane, either by Defendant's laboratory or a third-party laboratory retained by Defendant. In the event that 1,4-dioxane concentrations in groundwater sampled from any well exceed the applicable threshold, Defendant shall notify EGLE by phone or electronic mail within 48 hours of completion of the data verification and validation specified in the Quality Assurance Project Plan ("QAPP") described in Section V.E. Defendant will resample the same well within five days after the data verification and validation of the original result or at a time agreed upon with EGLE, if EGLE opts to take split samples. If a second sample analyzed by Defendant's laboratory or a third-party laboratory retained by Defendant has contaminant concentrations exceeding the applicable threshold, the exceedance will be considered verified and Defendant shall undertake the required Response Activities.

In the event that EGLE opts to take split samples, Defendant shall also collect an additional split sample for potential analysis within the applicable holding time by a mutually agreed-upon third-party laboratory at Defendant's expense. If the results from one sample, but not both, confirm a verified exceedance, the third sample analyzed by the mutually agreed-upon third-party laboratory, using the sampling and analytical method(s) described in Attachment B to this Consent Judgment, shall serve as the relevant result for verification purposes.

Y. "Western Area" shall mean that part of the Site located west of Wagner Road.

IV. IMPLEMENTATION OF REMEDIAL ACTION BY DEFENDANT

Defendant shall implement the Remedial Action to address Groundwater and Soil Contamination at, and emanating from, the Gelman Property in accordance with (1) the terms and conditions of this Consent Judgment; and (2) work plans approved by EGLE pursuant to this Consent Judgment. Notwithstanding any requirements set forth in this Consent Judgment

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obligating Defendant to operate remedial systems on a continuous basis, at a minimum rate, or until certain circumstances occur, Defendant may temporarily reduce or shut-down such remedial systems for reasonably necessary maintenance according to EGLE-approved operation and maintenance plans.

V. GROUNDWATER REMEDIATION

Defendant shall design, install, operate, and maintain the systems described below to satisfy the objectives described below. Defendant also shall implement a monitoring program to verify the effectiveness of these systems.

A. Eastern Area

1. Objectives. The remedial objectives of the Eastern Area ("Eastern Area Objectives") shall be the following:

a. Prohibition Zone Containment Objective. Defendant shall prevent Groundwater Contamination, regardless of the aquifer designation or the depth of the groundwater or Groundwater Contamination, from migrating beyond the boundaries of the Prohibition Zone as may be amended pursuant to Section V.A.2.f. Compliance with the Prohibition Zone Containment Objective shall be determined as provided in Section V.A.4.b, below.

b. Groundwater-Surface Water Interface Objective. Defendant shall prevent 1,4-dioxane from venting into surface waters in the Eastern Area at concentrations above the Generic GSI Cleanup Criterion, except in compliance with Part 201, including MCL 324.20120e ("Groundwater-Surface Water Interface Objective" for the Eastern Area).

2. Prohibition Zone Institutional Control. Pursuant to MCL 324.20121(8)

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and the Prohibition Zone Order, the following land and resource use restrictions shall apply to the Prohibition Zone depicted on the map attached hereto as Attachment C:

a. The installation by any person of a new water supply well in the Prohibition Zone for drinking, irrigation, commercial, or industrial use is prohibited.

b. The Washtenaw County Health Officer or any other entity authorized to issue well construction permits shall not issue a well construction permit for any well in the Prohibition Zone.

c. The consumption or use by any person of groundwater from the Prohibition Zone is prohibited.

d. The prohibitions listed in Subsections V.A.2.a–c do not apply to the installation and use of:

i. Groundwater extraction and monitoring wells as part of Response Activities approved by EGLE or otherwise authorized under Parts 201 or 213 of the Natural Resources and Environmental Protection Act ("NREPA"), or other legal authority;

ii. Dewatering wells for lawful construction or maintenance activities, provided that appropriate measures are taken to prevent unacceptable human or environmental exposures to hazardous substances and comply with MCL 324.20107a;

iii. Wells supplying heat pump systems that either operate in a closed loop system or if not, are demonstrated to operate in a manner sufficient to prevent unacceptable human or environmental exposures to hazardous substances and comply with MCL 324.20107a;

iv. Emergency measures necessary to protect public health,

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safety, welfare or the environment;

v. Any existing water supply well that has been demonstrated, on a case-by-case basis and with the written approval of EGLE, to draw water from a formation that is not likely to become contaminated with 1,4-dioxane emanating from the Gelman Property. Such wells shall be monitored for 1,4-dioxane by Defendant at a frequency determined by EGLE; and

vi. The City of Ann Arbor's Northwest Supply Well, provided that the City of Ann Arbor operates the Northwest Supply Well in a manner that does not prevent its municipal water supply system from complying with all applicable state and federal laws and regulations.

e. Attachment E (consisting of the map depicting the Prohibition Zone and the above list of prohibitions/exceptions) shall be published and maintained in the same manner as a zoning ordinance at Defendant's sole expense, which may be accomplished by the City of Ann Arbor maintaining a hyperlink on its public webpage that includes the City of Ann Arbor zoning maps, or another appropriate webpage, that directs the visitor to the portion of EGLE's Gelman Sciences website that identifies the extent of the Prohibition Zone and the Summary of Restrictions. EGLE-approved legal notice of the Prohibition Zone expansion reflected in Attachment F shall be provided at Defendant's sole expense.

f. The Prohibition Zone Institutional Control shall remain in effect in this form until such time as it is modified through amendment of this Consent Judgment, with a minimum of 30 days' prior notice to all Parties. The Defendant or EGLE may move to amend this Consent Judgment to modify the boundaries of the Prohibition Zone to reflect material

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changes in the boundaries or fate and transport of the Groundwater Contamination as determined by future hydrogeological investigations or EGLE-approved monitoring of the fate and transport of the Groundwater Contamination. The dispute resolution procedures of Section XVI shall not apply to such motion. Rather, the Prohibition Zone boundary may not be expanded unless the moving Party demonstrates by clear and convincing evidence that there are compelling reasons that the proposed expansion is needed to prevent an unacceptable risk to human health. The above-described showing shall not apply to a motion if the Prohibition Zone expansion being sought arises from or is related to: (1) inclusion of the Triangle Property under the following subsection; (2) the incorporation of a more restrictive definition of Groundwater Contamination (i.e., a criterion less than 7.2 ug/L) into this Consent Judgment; or (3) expansion under V.A.6.c up to and including back to the boundary established by this Fourth Amended Consent Judgment.

Commented [1]: Gelman Comment: Gelman is willing to offer the Prohibition Zone boundary expansion language contained in the August 2020 proposed version.

g. Future Inclusion of Triangle Property in the Prohibition Zone. The triangular piece of property located along Dexter Road/M-14 ("Triangle Property"), depicted in Attachment C, will be included in the Prohibition Zone if the data obtained from monitoring wells MW-121s and MW-121d and other nearby wells, including any water supply well installed on the property, as validated by the Verification Process, indicate that the Groundwater Contamination has migrated to the Triangle Property.

h. Well Identification. To identify any wells newly included in the Prohibition Zone as a result of this modification or any future modification to the Prohibition Zone, pursuant to an EGLE-approved schedule, Defendant shall implement a well identification plan for the affected area that is consistent with the Expanded Prohibition Zone Well

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Identification Work Plan approved by EGLE on February 4, 2011.

i. Plugging of Private Water Wells. Defendant shall plug and replace any private drinking water wells identified in any areas newly included in the Prohibition Zone by connecting those properties to the municipal water supply. Unless otherwise approved by EGLE, Defendant shall also properly plug non-drinking water wells in any areas newly included in the Prohibition Zone.

j. Municipal Water Connection Contingency Plan ("MWCCP"). Defendant shall develop a MWCCP addressing the potential provision of municipal water to properties using private drinking water wells in the Calvin Street, Wagner Road, and Lakeview Avenue areas. The MWCCP will be developed according to a schedule to be approved by EGLE.

3. Monitoring and Extraction Well Installation and Operation. Defendant shall install the following additional wells in the Eastern Area according to a schedule approved by EGLE and subject to access and receipt of any required approvals pursuant to Section VII.D:

a. Sentinel Well Installation. Defendant shall install the following three monitoring well clusters to monitor movement of 1,4-dioxane south of the northern Prohibition Zone boundary, in addition to MW-120, MW-123, and MW-129 that are already in place (collectively referred to herein as "Sentinel Wells"):

i. Residential area in the general vicinity of Ravenwood and Barber Avenues (Location "A" on map attached as Attachment G);
ii. Residential area in the general vicinity of Sequoia Parkway and Archwood Avenues between Delwood and Center (Location "B" on map attached as Attachment G); and
iii. Residential area in the general vicinity of Maple Road and North Circle Drive (Location "C" on the map attached as

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Attachment G).

Commented [2]: Gelman Comment: Gelman agrees to offer the additional Sentinel Well location contained in the August 2020 proposed version.

b. PZ Boundary Well Installation. Defendant shall install the following two monitoring well clusters to monitor the movement of 1,4-dioxane near the PZ Boundary (collectively referred to herein as "PZ Boundary Wells"):

i. Residential, commercial, and vacant area east of South Wagner Road, north of West Liberty Road, west of Lakeview Avenue, and south of Second Sister Lake (Location "D" on map attached as Attachment G); and
ii. Residential area south/southeast of the MW-112 cluster (Location "E" on map attached as Attachment G).

c. Sentinel and PZ Boundary Well Installation and Sampling. Defendant shall install the new well clusters according to a schedule to be approved by EGLE. Each new Sentinel or PZ Boundary Well cluster will include two to three monitoring wells, and the determination of the number of wells shall be based on EGLE's and the Defendant's evaluation of the geologic conditions present at each location, consistent with past practice. The frequency of sampling these monitoring wells and the analytical methodology for sample analysis will be included in the Eastern Area System Monitoring Plan, as amended.

d. Drilling Techniques. Borings for new wells installed pursuant to Section V.A.3 shall be drilled to bedrock unless a different depth is approved by EGLE or if conditions make such installation impracticable. EGLE reserves the right to require alternate drilling techniques to reach bedrock if standard methods are not able to do so. If the Defendant believes that drilling one or more of these wells to bedrock is not practical due to the geologic conditions encountered and/or that such conditions do not warrant the alternative drilling technique required by EGLE, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The wells shall be installed using Defendant's current vertical profiling

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techniques, which are designed to minimize the amount of water introduced during drilling, unless EGLE agrees to alternate techniques. Any material excavated as the result of well installation shall be properly characterized and disposed of or transferred to an appropriate facility for preservation and future scientific investigation, at Defendant's discretion.

e. Installation of Additional Groundwater Extraction ~~Wells.~~

~~i.~~ Well. Defendant shall install an additional groundwater extraction well (the "Rose Well") and associated infrastructure in the general area bounded by Rose Street and Pinewood Street as designated on Attachment G or convert former injection well IW-2 to a groundwater extraction well, or both. The decision to install the Rose Well or to convert IW-2 to an extraction well (or to do both) and exact location of the Rose Well if installed will be based on an evaluation of relevant geologic conditions, water quality, and other relevant factors, including access.

~~ii. Subject to V.A.3.g., below, Defendant shall install an additional groundwater extraction well (the "Parklake Well") and associated infrastructure in the parcel owned by the City of Ann Arbor bounded by Parklake Avenue and Jackson Road as designated on Attachment G (the "City of Ann Arbor-owned parcel"). The exact location of the Parklake Well within the City of Ann Arbor-owned parcel will be based on an evaluation of relevant geologic conditions, water quality, and other relevant factors, including access. Terms of access to the City of Ann Arbor-owned parcel shall be governed by an access or license agreement between Defendant and the City of Ann Arbor and Defendant's obligation to install and operate the Parklake Well shall be conditioned on negotiation of a mutually acceptable agreement with the City of Ann Arbor.~~

Commented [3]: Gelman Comment: Gelman is no longer offering the Parklake Well. 1,4-dioxane concentrations in the Parklake area have been on a general decline, reducing the effectiveness of this proposed remedial action. *See* Brode Technical Report at 30-34. Further, as the text indicates, the site for this well was to be provided to Gelman by the City of Ann Arbor and there were other requirements to be negotiated among the parties. With the rejection of the 4th Amended Consent Judgment and related settlement package, those preconditions can no longer be achieved.

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f. Eastern Area Groundwater Extraction.

i. The Defendant shall operate the Evergreen Subdivision Area extraction wells, LB-4 and either the Rose Well or IW-2, or both (including EGLE-approved replacement well(s)) (collectively, the "Evergreen Wells"), and TW-19 and TW-23 (or EGLE-approved replacement well(s)) (the "Maple Road Wells"), at a combined minimum purge rate of approximately 200 gallons per minute ("gpm") or the maximum capacity of the existing deep transmission pipeline, whichever is less provided Defendant properly maintains the pipeline, in order to reduce the mass of 1,4-dioxane migrating through the Evergreen Subdivision Area and the mass of 1,4-dioxane migrating east of Maple Road, until such time as the Eastern Area Objectives will be met at a reduced extraction rate or without the need to operate these extraction wells. In the event the maximum capacity of the existing deep transmission pipeline is ever reduced to below 180 gpm, Defendant shall repair and/or reconfigure the pipeline and related infrastructure, or take other action, including potentially replacing the pipeline or treating and disposing of some portion of the extracted groundwater at a different location, as needed to once again achieve a capacity of 190 – 200 gpm. Defendant shall have the discretion to adjust the individual well purge rates in order to optimize mass removal and compliance with the Eastern Area Objectives, provided that it shall operate the Evergreen Wells at a combined minimum purge rate of approximately 100 gpm, until such time as the Eastern Area Objectives will be met at a reduced extraction rate without the need to operate these wells. Before significantly reducing extraction below the minimum purge rates described above or permanently terminating extraction from either the Evergreen Wells or the Maple Road Wells, Defendant shall consult with EGLE and provide a written analysis, together with the data that

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supports its conclusion that the Eastern Area Objectives can be met at a reduced extraction rate or without the need to operate these extraction wells. EGLE will review the analysis and data and provide a written response to Defendant within 56 days after receiving Defendant's written analysis and data. If Defendant disagrees with the EGLE's conclusion, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The Defendant shall not significantly reduce or terminate extraction from the Evergreen Wells or the Maple Road Wells during the 56-day review period or while Defendant is disputing EGLE's conclusion.

~~ii. Defendant shall operate the Parklake Well, at a purge rate of approximately 200 gpm, subject to the yield of the aquifer in that area and discharge volume restrictions imposed in connection with the method of water disposal including discharge restrictions during wet weather events, in order to reduce the mass of 1,4-dioxane migrating from that area. Purged groundwater from the Parklake Well shall be treated with ozone/hydrogen peroxide or ultraviolet light and oxidizing agents at the City of Ann Arbor-owned parcel. Defendant shall operate this extraction and treatment system until the 1,4-dioxane concentration in the groundwater extracted from the Parklake Well has been reduced below 500 ug/L. Once concentrations have been reduced below 500 ug/L, Defendant shall cycle the Parklake Well off and on for several periods of time approved by EGLE to demonstrate that significant concentration rebound is not occurring. Defendant shall not permanently terminate extraction and treatment of water from the Parklake Well before the second anniversary of the date extraction was commenced. Before significantly reducing or terminating extraction from the Parklake Well (beyond the discharge volume restrictions/variations arising from the approved discharge option/above-described cycling), Defendant shall consult with EGLE and provide a~~

Commented [4]: Gelman Comment: Gelman is no longer offering the Parklake Well. 1,4-dioxane concentrations in the Parklake area have been on a general decline, reducing the effectiveness of this proposed remedial action. See above. *See also* Brode Technical Report at 30-34.

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~~written analysis, together with the data that supports its conclusion that the foregoing conditions have been satisfied. EGLE will review the analysis and data and provide a written response to Defendant within 56 days after receiving Defendant's written analysis and data. If Defendant disagrees with EGLE's conclusion, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The Defendant shall not significantly reduce or terminate extraction from the Parklake Well during the 56-day review period or while Defendant is disputing EGLE's conclusion.~~

~~g. Prerequisites for Parklake Well. Notwithstanding anything else in this Consent Judgment, Defendant shall not be obligated to install and operate the Parklake Well unless and until EGLE issues Defendant an NPDES permit with effluent limitations, discharge limits (other than volume) and other conditions no more restrictive than those included in Defendant's NPDES Permit No. MI-0048453 dated October 1, 2014 ("2014 NPDES Permit") that authorizes discharge of groundwater extracted by the Parklake Well to First Sister Lake following treatment with ozone/hydrogen peroxide technology .~~

4. Verification Monitoring. Defendant shall amend its Eastern Area System Monitoring Plan dated December 22, 2011 to include the monitoring wells installed under Section V.A.3 within 60 days of their installation. The Eastern Area System Monitoring Plan, as amended (hereinafter the "Verification Plan"), shall be sufficient to meet the objectives of this Section.

a. Objectives of Verification Plan. The Verification Plan shall include the collection of data sufficient to measure the effectiveness of the Remediation and to: (i) ensure that any potential migration of Groundwater Contamination outside of the Prohibition

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Zone is detected before such migration occurs and with sufficient time to allow Defendant to maintain compliance with the Prohibition Zone Containment Objective; (ii) verify that the Groundwater-Surface Water Interface Objective is satisfied; (iii) track the migration of the Groundwater Contamination to determine the need for additional investigation and monitoring points to meet the objectives in Section V.A.1, including the determination of the fate and transport of Groundwater Contamination when and if it reaches the Allen Creek Drain (including its branches) and the portion of the Huron River that is the easternmost extent of the Prohibition Zone; and (iv) evaluate potential changes in groundwater flow resulting from adjustments in extraction rates at different extraction well locations. The Verification Plan shall be continued until terminated pursuant to Section V.D.

b. Compliance Determination. The Verification Plan shall include the following steps for verifying sampling results and confirming compliance or noncompliance with the Eastern Area Objectives.

i. Verification Process for Sentinel Wells. Defendant shall conduct the Verification Process as defined in Section III.X for each Sentinel Well to verify any exceedance of 7.2 ug/L. A verified detection above 7.2 ug/L will be considered a "Verified Sentinel Well Exceedance" and Defendant shall take the Response Activities set forth in Section V.A.5.a.

ii. Verification Process for PZ Boundary Wells. Defendant shall conduct the Verification Process as defined in Section III.X for each PZ Boundary Well to verify any exceedance of 4.6 ug/L and/or 7.2 ug/L. A verified detection above 4.6 ug/L will be considered a "Verified PZ Boundary Well Exceedance" and Defendant shall take the Response

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Activities set forth in Section V.5.b. A verified detection above 7.2 ug/L will be considered a "Confirmed PZ Boundary Well Noncompliance" and Defendant shall take the Response Activities set forth in Section V.5.c.

5. Eastern Area Response Activities. Defendant shall take the following Response Activities:

a. Verified Sentinel Well Exceedance. In the event of a Verified Sentinel Well Exceedance, Defendant shall sample that Sentinel Well monthly. If the concentrations of 1,4-dioxane are less than 7.2 ug/L in samples from any two successive monthly sampling events, Defendant shall return to sampling that Sentinel Well quarterly. If, however, the concentrations of 1,4-dioxane exceed 7.2 ug/L in samples collected from the same Sentinel Well in any three successive monthly sampling events, Defendant shall take the following actions:

i. If involving a Sentinel Well in the north, installation of up to two additional well clusters near the Prohibition Zone boundary (the location of which shall be determined based on the location of the initial exceedance). If more than one Sentinel Well in the north exceeds the trigger level, Defendant and EGLE will mutually agree on the number of PZ Boundary Wells to be installed. Defendant shall sample the new PZ Boundary Wells monthly until Defendant completes the hydrogeological assessment described in Section V.A.5.a.ii below.

ii. Completion of a focused hydrogeological assessment of the applicable area that analyzes the likelihood that 1,4-dioxane at levels above 7.2 ug/L will migrate outside the Prohibition Zone. The assessment shall also opine on the mechanism causing the

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exceedances and the potential risk of impact to private drinking water wells. Defendant shall provide this assessment to EGLE within 60 days after installation of the new PZ Boundary Well(s). If the focused hydrogeological assessment determines that there is a low potential for the Groundwater Contamination to migrate beyond the Prohibition Zone boundary, normal quarterly monitoring of the Sentinel Well and applicable PZ Boundary Wells will resume. If the focused hydrogeological assessment determines that there is a reasonable likelihood for 1,4-dioxane greater than 7.2 ug/L to migrate beyond the Prohibition Zone boundary, the Defendant shall initiate the following Response Activities:

(A) Defendant shall continue to monitor the affected Sentinel Well(s) and the Prohibition Zone Boundary Wells on a monthly basis.

(B) If the Verified Sentinel Well Exceedance occurs in a Sentinel Well to be installed near the northern boundary of the Prohibition Zone, Defendant shall develop a "Remedial Contingency Plan" that identifies the Response Activities that could be implemented to prevent Groundwater Contamination from migrating beyond the Prohibition Zone Boundary. The Remedial Contingency Plan may identify expansion of the Prohibition Zone as an option, subject to Section V.A.2.f. Defendant shall submit the Remedial Contingency Plan to EGLE within 45 days after the focused hydrogeological assessment is completed.

(C) Defendant will review the Municipal Water Connection Contingency Plan, if applicable, and initiate preliminary activities related to provision of municipal water to potentially impacted private drinking water wells. The amount of work to be completed will be based on the anticipated time frame for water extension and the projected time of migration to potential receptors.

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b. Verified PZ Boundary Well Exceedance. In the event of a Verified PZ Boundary Well Exceedance, Defendant shall sample that PZ Boundary Well monthly. If the concentrations of 1,4-dioxane are less than 4.6 ug/L in samples from any two successive monthly sampling events, Defendant shall return to sampling that PZ Boundary Well quarterly. If, however, the concentrations of 1,4-dioxane exceed 4.6 ug/L in samples collected from the same PZ Boundary Well in any three successive monthly sampling events, Defendant shall take the following actions:

i. Defendant, in consultation with EGLE, shall sample select private drinking water wells in the immediate vicinity of the impacted PZ Boundary Well.

ii. Defendant will review the Municipal Water Connection Contingency Plan, and initiate further activities related to potential provision of municipal water to potentially impacted private drinking water wells as appropriate. The amount of work to be completed will be based on the anticipated time frames for water extension and the projected time of migration to potential receptors.

iii. Subject to Section V.A.2.f, Defendant shall implement the Remedial Contingency Plan as necessary to prevent contaminant levels above 7.2 ug/L from migrating beyond the Prohibition Zone Boundary.

c. Confirmed PZ Boundary Well Noncompliance. In the event of a Confirmed PZ Boundary Well Noncompliance, Defendant shall sample that PZ Boundary Well monthly. If the concentrations of 1,4-dioxane are less than 7.2 ug/L in samples from any two successive monthly sampling events, Defendant shall return to sampling that PZ Boundary Well quarterly. If, however, the concentrations of 1,4-dioxane exceed 7.2 ug/L in samples collected

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from the same PZ Boundary Well in any four successive monthly sampling events, Defendant shall take the following actions:

i. Defendant shall sample any active drinking water wells in the immediate vicinity of the impacted PZ Boundary Well on a monthly basis.

ii. Defendant will review the Municipal Water Connection Contingency Plan and implement the remaining activities necessary to provide municipal water to properties serviced by private drinking water wells potentially impacted by 1,4-dioxane concentrations above the applicable drinking water cleanup criterion.

iii. Defendant shall connect any such properties to municipal water on a case-by-case basis as determined by EGLE or if requested by the property owner.

iv. Subject to Section V.A.2.f, Defendant shall undertake Response Actions as necessary to reduce concentrations in the affected PZ Boundary Well(s) to less than 7.2 ug/L.

d. Bottled Water. At any time, Defendant shall supply the occupants of any property with a threatened drinking water well with bottled water if, prior to connection to municipal water, 1,4-dioxane concentrations in the drinking water well servicing the property exceed 3.0 ug/L. This obligation shall terminate if either (i) the 1,4-dioxane concentration in the well drops below 3.0 ug/L during two consecutive sampling events or (ii) the property is connected to an alternative water supply.

e. Triangle Property. If a drinking water well is installed on the Triangle Property in the future, Defendant shall take the necessary steps to obtain permission to sample the well on a schedule approved by EGLE. Defendant shall monitor such well(s) on

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EGLE-approved schedule unless or until that property is included in the Prohibition Zone, at which time, any water well(s) shall be addressed as part of the well identification process described in Section V.A.2.h.

f. Downgradient Investigation. The Defendant shall continue to implement its Downgradient Investigation Work Plan as approved by EGLE on February 4, 2005, as may be amended, to track the Groundwater Contamination as it migrates to ensure any potential migration of Groundwater Contamination outside of the Prohibition Zone is detected before such migration occurs with sufficient time to allow Defendant to maintain compliance with the Prohibition Zone Containment Objective and to ensure compliance with the Groundwater-Surface Water Interface Objective. Defendant shall, as the next phase of this iterative investigation process investigate the area depicted on the map attached as Attachment G, including the installation of monitoring wells at the following locations subject to access and receipt of any required approvals pursuant to Section VII.D:

i. A monitoring well nest in the residential area in the general vicinity of intersection of Washington and 7th Streets (Location "F" on Attachment G);

ii. A shallow well in the residential area in the general vicinity of current monitoring well nest MW-98 (Location "G" on Attachment G); and

iii. A monitoring well nest in the residential area in the general vicinity of Brierwood and Linwood Streets (Location "H" on Attachment G).

The data from these wells will be used to guide additional downgradient investigations as necessary to ensure compliance with the Eastern Area Objectives.

6. Prohibition Zone Boundary Review.

a. Five years after entry of this Fourth Amended Consent Judgment and then every five years thereafter, Defendant and EGLE shall confer and determine whether

Commented [5]: Gelman Comment: Gelman agrees to offer this additional detail for the downgradient investigation in the West Park area contained in the August 2020 proposed version.

Commented [6]: Gelman Comment: Gelman agrees to this process for the Prohibition Zone boundary review as between Gelman and EGLE contained in the August 2020 proposed version.

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the boundary of the Prohibition Zone can be contracted without either: (i) posing a current or future risk to the public health and welfare, including maintaining an adequate distance between the Groundwater Contamination and the Prohibition Zone boundary; or (ii) requiring Defendant to undertake additional Response Activities to contain the Groundwater Contamination within the contracted Prohibition Zone boundary beyond those Response Activities otherwise required immediately before the proposed contraction. This determination will be based on consideration of the totality of all data from existing Eastern Area monitoring wells.

b. If EGLE and Defendant jointly agree that the Prohibition Zone boundary may be contracted under these conditions, the Parties shall move to amend Attachments C and E of this Consent Judgment for the sole purpose of establishing a revised boundary for the Prohibition Zone. If only one Party concludes that the Prohibition Zone boundary may be contracted under these conditions, that Party may move to amend Attachments C and E of this Consent Judgment for the sole purpose of establishing a revised boundary for the Prohibition Zone, but must demonstrate by clear and convincing evidence that the above conditions are satisfied. The non-moving Party may oppose or otherwise respond to such motion and the showing required under Section XVI shall not apply to the Court's resolution of the motion.

c. If the Prohibition Zone boundary is contracted under Section V.A.6 and the Parties, either jointly or independently, subsequently determine that based on the totality of the data, the Prohibition Zone boundary should be expanded up to and including back to the boundary established by this Fourth Amended Consent Judgment in order to protect the public health and welfare, the Party(ies) may move to amend Attachments C and E of this

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Consent Judgment for the sole purpose of establishing a revised boundary for the Prohibition Zone. Neither Section XVI nor the showing required under Section V.A.2.f shall apply to the Court's resolution of the motion, provided that the expansion sought does not extend beyond the boundary established by this Fourth Amended Consent Judgment.

d. To the extent the Prohibition Zone boundary is contracted under Section V.A.6.a, Defendant shall not be required to undertake Response Activities to contain the Groundwater Contamination within the contracted boundary beyond those Response Activities required immediately before the Prohibition Zone was contracted.

7. Operation and Maintenance. Subject to Sections V.A.3.f, V.A.9, and reasonably necessary maintenance according to EGLE-approved operation and maintenance plans, Defendant shall operate and maintain the Eastern Area System as necessary to meet the Prohibition Zone Containment Objective until Defendant is authorized to terminate extraction well operations pursuant to Section V.C.1.

8. Treatment and Disposal. Groundwater extracted by the extraction well(s) in the Eastern Area System shall be treated (as necessary depending on the disposal method(s) utilized) with ozone/hydrogen peroxide or ultraviolet light and oxidizing agent(s), or such other method approved by EGLE to reduce 1,4-dioxane concentrations to the required level and disposed of using methods approved by EGLE, including, but not limited to, the following options:

a. Groundwater Discharge. The purged groundwater shall be treated to reduce 1,4-dioxane concentrations to the level required by EGLE, and discharged to groundwater at locations approved by EGLE in compliance with a permit or exemption

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authorizing such discharge.

b. Sanitary Sewer Discharge. Use of the sanitary sewer leading to the Ann Arbor Wastewater Treatment Plant is conditioned upon approval of the City of Ann Arbor. If discharge is made to the sanitary sewer, the Evergreen and Maple Road Wells shall be operated and monitored in compliance with the terms and conditions of an Industrial User's Permit from the City of Ann Arbor, and any subsequent written amendment of that permit made by the City of Ann Arbor. The terms and conditions of any such permit and any subsequent amendment shall be directly enforceable by EGLE against Defendant as requirements of this Consent Judgment.

c. Storm Sewer Discharge. Use of the storm drain or sewer is conditioned upon issuance of an NPDES permit and approval of the appropriate regulatory authority(ies). Discharge to the Huron River via a storm water system shall be in accordance with the relevant NPDES permit and conditions required by the relevant regulatory authority(ies). If a storm drain or sewer is to be used for disposal of purged groundwater, Defendant shall submit to EGLE and the appropriate local regulatory authority(ies) for their review and approval, a protocol under which the purge system shall be temporarily shut down: (i) for maintenance of the storm drain or sewer and (ii) during storm events to assure that the storm water system retains adequate capacity to handle run-off created during such events. Defendant shall not be permitted or be under any obligation under this subsection to discharge purged groundwater to the storm drain or sewer unless the protocol for temporary shutdown is approved by all necessary authorities. Following approval of the protocol, the purge system shall be operated in accordance with the approved protocol.

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d. Existing or Additional/Replacement Pipeline to Wagner Road Treatment Facility.

i. The existing deep transmission pipeline, an additional pipeline, or a pipeline replacing the existing deep transmission pipeline may be used to convey purged groundwater from the existing Evergreen Area infrastructure to the Wagner Road Treatment Facility where the purged groundwater shall be treated to reduce 1,4-dioxane concentrations to the level required by NPDES Permit No. MI-0048453, as amended or reissued.

ii. Installation of an additional pipeline or a replacement pipeline from the existing Evergreen Area to the Wagner Road Treatment Facility is conditioned upon approval of such installation by EGLE. If the pipeline is proposed to be installed on public property, the pipeline installation is conditioned upon approval of such installation by the appropriate local authority(ies), if required by statute or ordinance, or by Order of the Court pursuant to the authority under MCL 324.20135a. Defendant shall design and install the pipeline in compliance with all state requirements and install the pipeline with monitoring devices to detect any leaks. If leaks are detected, the system will automatically shut down and notify an operator of the condition. In the event that any leakage is detected, Defendant shall take any measures necessary to repair any leaks and perform any remediation that may be necessary. To reduce the possibility of accidental damage to the pipeline during any future construction, Defendant shall participate in the notification system provided by MISS DIG Systems, Inc., or its successor ("MISS DIG"), and shall comply with the provisions of MCL 460.721, *et seq.,* as may be amended and with the regulations promulgated thereunder. Defendant shall properly mark its facilities upon notice from MISS DIG.

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e. Existing, Replacement, or Additional Pipeline from Maple Road Extraction Well(s). Defendant may operate the existing pipeline or install and operate a replacement pipeline or an additional pipeline from the Maple Road Extraction Well(s) to the existing Evergreen area infrastructure to convey groundwater extracted from the Maple Road Extraction Wells to the Wagner Road Treatment Facility, where the purged groundwater shall be treated to reduce 1,4-dioxane concentrations to the level required by NPDES Permit No. MI-0048453, as amended or reissued. Installation and operation of an additional or replacement pipeline from the Maple Road area to Evergreen area is conditioned upon approval of such installation and operation by EGLE. If the pipeline is proposed to be installed on public property, the pipeline installation is conditioned upon approval of such installation by the appropriate local authorities, if required by statute or ordinance, or Order of the Court pursuant to the authority under MCL 324.20135a. Defendant shall design any such pipeline in compliance with all state requirements and install it with monitoring devices to detect any leaks. In the event any leakage is detected, Defendant shall take any measures necessary to repair any leaks and perform any remediation that may be necessary. To reduce the possibility of accidental damage to the pipeline, Defendant shall participate in the notification system provided by MISS DIG and shall comply with the provisions of MCL 460.721, *et seq*., as may be amended, and with the regulations promulgated thereunder. Defendant shall properly mark its facilities upon notice from MISS DIG.

f. Pipeline from Rose Well. Installation and operation of a proposed pipeline from the Rose Well to the existing Evergreen area infrastructure is conditioned upon approval of such installation and operation by EGLE. If the pipeline is proposed to be installed

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on public property, the pipeline installation is conditioned upon approval of such installation by the appropriate local authorities, if required by statute or ordinance, or Order of the Court pursuant to the authority under MCL 324.20135a. Defendant shall design and install any such pipeline in compliance with all state requirements and install it with monitoring devices to detect any leaks. In the event any leakage is detected, Defendant shall take any measures necessary to repair any leaks and perform any remediation that may be necessary. To reduce the possibility of accidental damage to the pipeline, Defendant shall participate in the notification system provided by MISS DIG and shall comply with the provisions of MCL 460.721, *et seq*., as may be amended, and with the regulations promulgated thereunder. Defendant shall properly mark its facilities upon notice from MISS DIG. Defendant may operate such pipeline to, among other things, convey groundwater extracted from the Rose Well to the existing Evergreen Area infrastructure and then to the Wagner Road Treatment Facility, where the purged groundwater shall be treated to reduce 1,4-dioxane concentrations to the level required by NPDES Permit No. MI-0048453, as amended or reissued.

~~g. Surface Water Discharge to First Sister Lake. Groundwater extracted from the Parklake Well may be discharged to First Sister Lake, conditioned on EGLE's issuance of an NPDES permit with effluent limitations, discharge limits (other than volume), and other conditions no more restrictive than those included in Defendant's 2014 NPDES Permit that authorizes discharge of groundwater to First Sister Lake following treatment with ozone/hydrogen peroxide technology. Defendant shall submit a protocol to EGLE and the appropriate local authority(ies) for their review and approval, a protocol under which the Parklake Well shall be temporarily shut down during storm events or high water levels in First~~

Commented [7]: Gelman Comment: Gelman is no longer proposing the Parklake Well. 1,4-dioxane concentrations in the Parklake area have been on a general decline, reducing the effectiveness of this proposed remedial action. *See* Brode Technical Report at 30-34. Furthermore, there was significant community resistance in the public comments and meetings regarding the surface water discharge to First Sister Lake, which is a required element of the response action were this action to be implemented. *Id.* at 31.

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~~Sister Lake as necessary to avoid flooding. Defendant shall not be under any obligation to operate the Parklake Well unless the protocol for temporary shutdown is approved by all necessary authorities. Following approval of the protocol, Defendant shall operate the Parklake Well in accordance with the approved protocol.~~

9. Wagner Road Extraction. The extraction wells currently or in the future located just west of Wagner Road (the "Wagner Road Wells") shall be considered part of the Eastern Area System even though they are located west of Wagner Road. The Defendant shall initially operate the Wagner Road Wells at a combined 200 gpm extraction rate. The Defendant shall continue to operate the Wagner Road Wells in order to reduce the migration of 1,4-dioxane east of Wagner Road at this rate until such time as it determines that the Eastern Area Objectives will be met with a lower combined extraction rate or without the need to operate these wells or that reduction of the Wagner Road extraction rate would enhance 1,4-dioxane mass removal ~~from the Parklake Well and/or~~ the Rose Well/IW-2 and Defendant's efforts to reduce the mass of 1,4-dioxane migrating east of Maple Road and/or through the Evergreen Subdivision Area. Before significantly reducing or terminating extraction from the Wagner Road Wells, Defendant shall consult with EGLE and provide a written analysis, together with the data that supports its conclusion that the above-objectives can be met at a reduced extraction rate or without the need to operate these extraction wells. EGLE will review the analysis and data and provide a written response to Defendants within 56 days after receiving Defendant's written analysis and data. If Defendant disagrees with EGLE's conclusion, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The Defendant shall not significantly reduce or terminate the Wagner Road extraction during the 56-day review period or while Defendant is

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disputing EGLE's conclusion.

10. Options Array for Transmission Line Failure/Inadequate Capacity. The Defendant has provided EGLE with documentation regarding the life expectancy of the deep transmission line and an Options Array (attached as Attachment H). The Options Array describes the various options that may be available if the deep transmission line fails or the 200 gpm capacity of the existing deep transmission line that transports groundwater from the Eastern Area System to the treatment system located on the Gelman Property proves to be insufficient to meet the Prohibition Zone Containment Objective.

B. Western Area

1. Western Area Non-Expansion Cleanup Objective. The Defendant shall prevent the horizontal extent of the Groundwater Contamination in the Western Area, regardless of the depth (as established under Section V.B.3.b and c), from expanding. Compliance with this objective shall be determined as set forth in Section V.B.4, below. Continued migration of Groundwater Contamination into the Prohibition Zone, as may be modified, shall not be considered expansion and is allowed. A change in the horizontal extent of Groundwater Contamination resulting solely from the Court's application of a new cleanup criterion shall not constitute expansion. Nothing in this Section prohibits EGLE from seeking additional response activities pursuant to Section XVIII.E of this Consent Judgment. Compliance with the Non-Expansion Cleanup Objective shall be established and verified by the network of monitoring wells in the Western Area to be selected and/or installed by the Defendant as provided in Sections V.B.3.b and c, below ("Western Area Compliance Well Network") and the Compliance Process set forth in Section V.B.4 ("Western Area Compliance Process"). ~~Except as provided in~~

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~~Section VI.C.1, there~~There is no independent mass removal requirement or a requirement that Defendant operate any particular Western Area extraction well(s) at any particular rate beyond what is necessary to prevent the prohibited expansion, provided that Defendant's ability to terminate all groundwater extraction in the Western Area is subject to Section V.C.1.c and the establishment of property use restrictions as required by Section V.B.3.a. If prohibited expansion occurs, as determined by the Western Area Compliance Well Network and the Western Area Compliance Process, Defendant shall undertake additional response activities to return the Groundwater Contamination to the boundary established by the Western Area Compliance Well Network (such response activities may include groundwater extraction at particular locations).

Commented [8]: Gelman Comment: Gelman had previously offered onsite groundwater extraction at an additional rate of 75 gpm. Gelman is no longer making this proposal for the reasons articulated below and in its Legal Brief and Technical Report.

As part of the Third Amendment to Consent Judgment, EGLE agreed to modify the remedial objective for the Western Area as provided herein to a no expansion performance objective in reliance on Defendant's agreement to comply with a no expansion performance objective for the Western Area. To ensure compliance with this objective, Defendant acknowledges that in addition to taking further response action to return the horizontal extent of Groundwater Contamination to the boundary established by the Compliance Well Network, Defendant shall be subject to stipulated penalties for violation of the objective as provided in Section XVII. Nothing in this Section shall limit Defendant's ability to contest the assessment of such stipulated penalties as provided in this Consent Judgment.

2. Western Area Groundwater-Surface Water Interface Objective.

a. Defendant shall prevent 1,4-dioxane from venting into surface waters in the Western Area at concentrations above the Generic GSI Cleanup Criterion, except in

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compliance with Part 201, including MCL 324.20120e ("Groundwater-Surface Water Interface Objective" for the Western Area).

b. GSI Investigation Work Plan. Within 90 days of entry of this Consent Judgment, Defendant shall submit to EGLE for its review and approval a work plan for investigation of the groundwater-surface water interface in the Western Area and a schedule for implementing the work plan. Defendant's work plan shall include:

i. An evaluation of the Western Area and identification of any areas where the GSI pathway is relevant, i.e., any areas where 1,4-dioxane in groundwater is reasonably expected to vent to surface water in concentrations that exceed the Generic GSI Criterion based on evaluation of the factors listed in MCL 324.20120e(3); and

ii. A description of the Response Activities Defendant will take to determine whether 1,4-dioxane in groundwater is venting to surface water in any such areas in concentrations that exceed the Generic GSI Criterion.

c. GSI Response Activity Work Plan. With respect to any areas where the above-described GSI investigation demonstrates that 1,4-dioxane in groundwater is venting to surface water in any such areas in concentrations that exceed the Generic GSI Criterion, Defendant shall submit for EGLE review and approval a work plan and a schedule for implementing the work plan that describes the Response Activities, including any evaluations under MCL 324.20120e, Defendant will undertake to ensure compliance with Groundwater-Surface Water Interface Objective within a reasonable timeframe.

d. Compliance with Groundwater-Surface Water Interface Objective. Defendant shall undertake such Response Activities and/or evaluations as necessary to achieve

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compliance with the Groundwater-Surface Water Interface Objective. It shall not be a violation of this Consent Judgment nor shall Defendant be subject to stipulated penalties unless and until Defendant fails to achieve compliance with the Groundwater-Surface Water Interface Objective within a reasonable timeframe established by EGLE and then only from that point forward. EGLE's determination of a reasonable timeframe for compliance with the Groundwater-Surface Water Interface Objective is subject to dispute resolution under Section XVI.

3. Western Area Response Activities. Defendant shall implement the following response activities:

a. Groundwater Extraction. The Western Area Response Activities shall include the operation of groundwater extraction wells as necessary to meet the objectives described in Section V.B.1 and 2, including operation of the Marshy Area groundwater extraction system described in Defendant's May 5, 2000 Final Design and Effectiveness Monitoring Plan, as subsequently modified and approved by EGLE. ~~Defendant shall also install and operate additional groundwater extraction wells at the Gelman Property as described in Section VI, below, in order to reduce the mass of 1,4-dioxane in the groundwater.~~ Purged groundwater from the Western Area shall be treated with ozone/hydrogen peroxide or ultraviolet light and oxidizing agent(s), or such other method approved by EGLE to reduce 1,4-dioxane concentrations to the level required by NPDES Permit No. MI-0048453, as amended or reissued. Discharge to the Honey Creek tributary shall be in accordance with NPDES Permit No. MI-0048453, as amended or reissued. The Defendant shall have property use restrictions that are sufficient to prevent unacceptable exposures in place for any properties affected by Soil Contamination or Groundwater Contamination before completely terminating extraction in the

Commented [9]: Gelman Comment: Gelman agrees to include the additional details here regarding the contents of the GSI Investigation Work Plan contained in the August 2020 proposed version.

Commented [10]: Gelman Comment: Gelman had previously offered onsite groundwater extraction at an additional rate of 75 gpm. Gelman is no longer making this proposal for the reasons articulated below and in its Technical Report.

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Western Area.

b. Western Area Delineation Investigation. Defendant shall install the following additional groundwater monitoring wells pursuant to a schedule approved by EGLE and subject to the accessibility of the locations and obtaining access and any required approvals under Section VII.D at the approximate locations described below and on the map attached as Attachment G to address gaps in the current definition of the Groundwater Contamination and to further define the horizontal extent of Groundwater Contamination in the Western Area:

i. Commercial area north of Jackson Road (across from April Drive) and south of US-Highway I-94, near MW-40s&d. (Deep well only) (Location "I" on Attachment G);
ii. Commercial area north of Jackson Road (across from Nancy Drive) and south of US-Highway I-94, east of MW-40s&d and west of the MW-133 cluster (Location "J" on Attachment G);
iii. Residential area west of West Delhi, north of Jackson Road and south of US-Highway I-94 (Location "K" on Attachment G);
iv. Residential area southwest of the MW-141 cluster in the vicinity of Kilkenny and Birkdale (Location "L" on Attachment G);
v. Residential area along Myrtle between Jackson Road and Park Road (Shallow Well only) (Location "M" on Attachment G); and
vi. Residential and vacant area within approximately 250 feet of Honey Creek southwest of Dexter Road (Location "N" on Attachment G).

Commented [11]: Gelman Comment: Gelman agrees to the additional Western Area delineation well location proposed contained in the August 2020 proposed version.

This investigation may be amended by agreement of EGLE and the Defendant to reflect data obtained during the investigation. Defendant shall promptly provide the data/results from the investigation to EGLE so that EGLE receives them prior to Defendant's submission of the Compliance Monitoring Plan described in Subsection V.B.3.c, below. Based on the data obtained from the wells described above, Defendant may propose to install additional monitoring

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wells to potentially serve as Compliance Wells rather than one or more of the wells identified above. EGLE reserves the right to request the installation of additional borings/monitoring wells, if the totality of the data indicate that the horizontal extent of Groundwater Contamination has not been completely defined.

c. Compliance Well Network and Compliance Monitoring Plan. Within 30 days of completing the investigation described in Subsection V.B.3.b, above, Defendant shall amend its Western Area Monitoring Plan dated April 18, 2011, including Defendant's analysis of the data obtained during the investigation for review and approval by EGLE, to identify the network of compliance wells that will be used to confirm compliance with the Western Area Non-Expansion Cleanup Objective (hereinafter referred to as the "Compliance Monitoring Plan"). The Compliance Monitoring Plan shall include the collection of data from a compliance well network sufficient to verify the effectiveness of the Western Area System in meeting the Western Area Non-Expansion Cleanup Objective. The locations and/or number of the Compliance Wells for the Compliance Monitoring Plan will be determined based on the data obtained from the investigation Defendant shall conduct pursuant to Section V.B.3.b, and shall be made up of existing monitoring wells. EGLE shall approve the Compliance Monitoring Plan, submit to Defendant changes in the Compliance Monitoring Plan that would result in approval, or deny the Compliance Monitoring Plan within 35 days of receiving the Compliance Monitoring Plan. Defendant shall either implement the EGLE-approved Compliance Monitoring Plan, including any changes required by EGLE, or initiate dispute resolution pursuant to Section XVI of this Consent Judgment. Defendant shall implement the EGLE- (or Court)-approved Compliance Monitoring Plan to verify the effectiveness of the Western Area System in meeting

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the Western Area Non-Expansion Cleanup Objective. Defendant shall continue to implement the current EGLE-approved monitoring plan(s) until EGLE approves the Compliance Monitoring Plan required by this Section. The monitoring program shall be continued until terminated pursuant to Section V.D.

d. Municipal Water Connection Contingency Plan ("MWCCP"). Defendant shall develop a MWCCP addressing the potential provision of township water to properties using private drinking water wells on Elizabeth Road. The MWCCP will be developed according to a schedule to be approved by EGLE.

4. Compliance Determination for Non-Expansion Objective. The Compliance Monitoring Plan shall include the following steps for verifying sampling results and confirming compliance or noncompliance with the Western Area Non-Expansion Cleanup Objective.

a. Monitoring Frequency/Analytical Method. Defendant will sample groundwater from the Compliance Wells on a quarterly basis unless an alternative schedule is agreed upon on with EGLE. Groundwater samples will be submitted to a laboratory owned, operated or contracted by Defendant for 1,4-dioxane analysis.

b. Verification Process. Defendant shall conduct the Verification Process as defined in Section III.X for each Compliance Well to verify any exceedance of 7.2 ug/L. A verified detection above 7.2 ug/L will be considered a "Verified Compliance Well Exceedance." If a second sample does not exceed 7.2 ug/L, monitoring of the well will increase to monthly until the pattern of exceedances is broken by two successive sampling events below 7.2 ug/L. At that point, a quarterly monitoring frequency will resume.

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c. Response Activities. In the event of a Verified Compliance Well Exceedance, Defendant shall take the following Response Activities:

i. Sample selected nearby private drinking water wells. Defendant shall sample select private drinking water wells unless otherwise the Parties otherwise agree. Prior to sampling the selected wells, Defendant shall submit a list of the wells to be sampled and other sampling details to EGLE for approval. In selecting wells to be sampled, Defendant shall consider data collected from monitoring and private drinking water wells within 1,000 feet of the Compliance Well(s) that exceeded 7.2 ug/L, groundwater flow, hydrogeology and well depth. EGLE shall respond within seven days after receipt of Defendant's list of select private drinking water wells and shall either approve the list or propose alternate or additional wells to be sampled.

ii. If a Verified Compliance Well Exceedance occurs in the same Compliance Well in any two successive monthly sampling events, Defendant shall take the following Response Activities:

(A) Continue to sample the previously selected private drinking water well(s) on a monthly basis unless otherwise agreed upon with EGLE.

(B) Conduct focused hydrogeological investigation to determine whether the Verified Compliance Well Exceedance is a temporary fluctuation or evidence of plume expansion. The investigation shall include the measurement of groundwater levels in relevant monitoring wells in the vicinity of the Compliance Well with the Verified Compliance Well Exceedance. Defendant shall report its findings to EGLE within 30 days of completing the hydrogeological investigation.

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(C) Conduct Statistical Analysis. During the eight month period after the second consecutive Verified Compliance Well Exceedance, Defendant shall complete a statistical analysis of the data using a Mann-Kendall Trend Test or other statistical technique approved by EGLE.

(D) Interim Measures Feasibility Study. During the eight month period after the second consecutive Verified Compliance Well Exceedance, Defendant shall evaluate affirmative measures to control expansion of the Groundwater Contamination as necessary to reduce the concentration of 1,4-dioxane in the relevant Compliance Well to below 7.2 ug/L, including adjustments in groundwater extraction rates, the installation of additional groundwater extraction wells or other remedial technologies. Defendant shall submit to EGLE a feasibility study within 240 days of the Verified Compliance Well Exceedance. The feasibility study shall include an evaluation of the feasibility and effectiveness of all applicable measures to control expansion of the Groundwater Contamination as necessary to reduce the concentration of 1,4-dioxane in the relevant Compliance Well to below 7.2 ug/L in light of the geology and current understanding of the fate and transport of the Groundwater Contamination.

iii. If, after conducting the focused hydrogeological investigation and statistical analysis, the totality of the data evidences a reasonable likelihood that the Western Area Non-Expansion Cleanup Objective is not being met, Defendant shall evaluate and, subject to EGLE approval, implement one or more of the potential response activities identified in the feasibility study, or other response activities, as necessary to achieve compliance with the Western Area Non-Expansion Cleanup Objective. Nothing in this Section

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shall prevent Defendant from implementing response activities as necessary to achieve the Western Area Non-Expansion Cleanup Objective at an earlier time.

d. Stipulated Penalties/Exacerbation. Defendant shall not be subject to stipulated penalties until concentrations in at least four consecutive monthly samples from a given Compliance Well exceed 7.2 ug/L, at which point Defendant shall be subject to stipulated penalties for violation of the Western Area Non-Expansion Cleanup Objective as provided in Section XVII, provided, however, that Defendant shall not be subject to stipulated penalties with respect to prohibited expansion of the horizontal extent of the Groundwater Contamination if Defendant can demonstrate by a preponderance of the evidence that the migration of the Groundwater Contamination is caused in whole or in part by the actions of an unrelated third party that have contributed to or exacerbated the Groundwater Contamination. In such event, although Defendant is not subject to stipulated penalties, Defendant shall remain responsible for mitigating the migration of the Groundwater Contamination. Nothing in this Consent Judgment shall preclude Defendant from seeking contribution or cost recovery from other parties responsible for or contributing to exacerbation of the Groundwater Contamination.

e. Private Drinking Water Well Response Activities. If, after conducting the focused hydrogeological investigation and statistical analysis, the totality of the data evidences a reasonable likelihood that 1,4-dioxane will be present at concentrations above 7.2 ug/L in a residential drinking water well and/or at concentrations above 350 ug/L in an active non-residential drinking water well, Defendant shall evaluate and, if appropriate, implement response activities, including, without limitation, the following:

i. Sampling of at risk drinking water well(s) on a monthly

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basis;

ii. Implementation of affirmative interim measures to mitigate the expansion of 1,4-dioxane at concentrations above the applicable drinking water standard toward the drinking water well(s) as determined in the feasibility study described in Section V.B.4.c.ii.(D);

iii. Evaluation of land use restrictions and/or institutional controls to eliminate drinking water exposures to 1,4-dioxane in the groundwater at concentrations above the applicable drinking water standard; and

iv. Evaluation of water supply alternatives including, but not limited to, providing bottled water, a township water connection, installation of a new drinking water well completed in an uncontaminated portion of the subsurface, and point-of-use treatment systems.

v. If at any time 1,4-dioxane is detected in an active private drinking water well above 3.0 ug/L, Defendant shall promptly at its expense, offer the occupants of the property the option of receiving bottled water and shall sample the well monthly. These obligations shall terminate if either (i) the 1,4-dioxane concentration in the well drops below 3.0 ug/L during two consecutive sampling events or (ii) the property is connected to a permanent alternative water supply. Furthermore, Defendant shall work with EGLE and municipal authorities to evaluate long-term and economically reasonable water supply options.

vi. If 1,4-dioxane is detected at concentrations above 7.2 ug/L in an active residential drinking water well and/or at concentrations above 350 ug/L in an active non-residential drinking water well, Defendant shall conduct the Verification Process as defined

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in Section III.X for each such private drinking water well. If the detection above 7.2 ug/L is verified, Defendant shall monitor each such private drinking water well on a monthly basis if not already doing so and shall continue monthly monitoring until the well is no longer considered at risk under Section V.B.4.e.i. If 1,4-dioxane is detected at concentrations above 7.2 ug/L in four consecutive monthly samples or any seven monthly samples in any 12 month period, Defendant shall provide at its expense a long-term alternative water supply to the property serviced by the affected well. Such long-term alternative water supply may be in the form of a township water connection, installation of a new drinking water well completed in an uncontaminated portion of the subsurface, or a point-of-use treatment system, or other long-term drinking water supply option approved by EGLE. Defendant shall also provide at its expense bottled water to the property owner until the property is serviced by a long-term alternative water supply.

Commented [12]: Gelman Comment: Gelman is willing to offer this additional Verification Process as contained in the August 2020 proposed version.

5. Groundwater Contamination Delineation. Additional delineation of the extent of Groundwater Contamination, including within the plume boundary, and/or characterization of source areas shall not be required except as provided in Section V.B.3.c. EGLE reserves the right to petition the Court to require additional work if there are findings that EGLE determines warrant additional Groundwater Contamination delineation.

C. Termination of Groundwater Extraction Systems

1. Defendant may only terminate the Groundwater Extraction Systems listed below as provided below:

a. Termination Criteria for Evergreen Wells/Maple Road Wells/Wagner Road Wells. Except as otherwise provided pursuant to Section V.C.2, Defendant may only reduce (below the stated minimum purge rates) or terminate operation of the Evergreen

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Wells/Maple Road Wells as provided in Section V.A.3.f.i. and of the Wagner Road Wells as provided in Section V.A.~~9~~8.

b. Termination Criteria for ~~Parklake Well. Except as otherwise provided pursuant to Section V.C.2, Defendant may reduce or terminate operation of the Parklake Well as provided in Section V.A.3.f.ii.~~

~~c. Termination Criteria for~~ Western Area. ~~Defendant may terminate the groundwater extraction described in Section VI.C.1 as provided in that Section.~~ Except as otherwise provided pursuant to Section V.C.2, and subject to Section V.B.1., Defendant shall not terminate all groundwater extraction in the Western Area until all of the following are established:

i. Defendant can establish to EGLE's satisfaction that groundwater extraction is no longer necessary to prevent the expansion of Groundwater Contamination prohibited under Section V.B.1;

ii. Defendant's demonstration shall also establish that groundwater extraction is no longer necessary to satisfy the Groundwater-Surface Water Interface Objective under Section V.B.2; and

iii. Defendant has the land use or resource use restrictions described in Section V.B.3.a in place.

Defendant's request to terminate extraction in the Western Area must be made in writing for review and approval pursuant to Section X of this Consent Judgment. The request must include all supporting documentation demonstrating compliance with the termination criteria. Defendant may initiate dispute resolution pursuant to Section XVI of this Consent Judgment if

Commented [13]: Gelman Comment: Gelman is no longer proposing the Parklake Well. 1,4-dioxane concentrations in the Parklake area have been on a general decline, reducing the effectiveness of this proposed remedial action. *See* Brode Technical Report at 30-34.

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EGLE does not approve the Defendant's request/demonstration. Defendant may terminate Western Area groundwater extraction upon: (i) receipt of notice of approval from EGLE; or (ii) receipt of notice of a final decision approving termination pursuant to dispute resolution procedures of Section XVI of this Consent Judgment.

2. Modification of Termination Criteria/Cleanup Criteria. The termination criteria provided in Section V.C.1. and/or the definition of "Groundwater Contamination" or "Soil Contamination" may be modified as follows:

a. After entry of this Fourth Amended Consent Judgment, Defendant may propose to EGLE that the termination criteria be modified based upon either or both of the following:

i. a change in legally applicable or relevant and appropriate regulatory criteria since the entry of this Fourth Amended Consent Judgment; for purposes for this Subsection, "regulatory criteria" shall mean any promulgated standard criterion or limitation under federal or state environmental law specifically applicable to 1,4-dioxane; or

ii. scientific evidence newly released since the date of the United States Environmental Protection Agency's IRIS risk assessment for 1,4-dioxane (August 11, 2010), which, in combination with the existing scientific evidence, establishes that different termination criteria/definitions for 1,4-dioxane are appropriate and will assure protection of public health, safety, welfare, the environment, and natural resources.

b. Defendant shall submit any such proposal in writing, together with supporting documentation, to EGLE for review.

c. If the Defendant and EGLE agree to a proposed modification, the

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agreement shall be made by written Stipulation filed with the Court pursuant to Section XXIV of this Consent Judgment.

d. If EGLE disapproves the proposed modification, Defendant may invoke the dispute resolution procedures contained in Section XVI of this Consent Judgment. Alternatively, if EGLE disapproves a proposed modification, Defendant may seek to have the dispute resolved pursuant to Subsection V.C.3.

3. If the Defendant invokes the procedures of this Subsection, Defendant and EGLE shall prepare a list of the items of difference to be submitted to a scientific advisory panel for review and recommendations. The scientific advisory panel shall be comprised of three persons with scientific expertise in the discipline(s) relevant to the items of difference. No member of the panel may be a person who has been employed or retained by either Party, except persons compensated solely for providing peer review of the Hartung Report, in connection with the subject of this litigation.

a. If this procedure is invoked, each Party shall, within 14 days, select one member of the panel. Those two members of the panel shall select the third member. Defendant shall, within 28 days after this procedure is invoked, establish a fund of at least $10,000.00, from which each member of the panel shall be paid reasonable compensation for their services, including actual and necessary expenses. If EGLE and Defendant do not agree concerning the qualifications, eligibility, or compensation of panel members, they may invoke the dispute resolution procedures contained in Section XVI of this Consent Judgment.

b. Within a reasonable period of time after selection of all panel members, the panel shall confer and establish a schedule for acceptance of submissions from

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EGLE and the Defendant completing review and making recommendations on the items of difference.

c. The scientific advisory panel shall make its recommendations concerning resolution of the items of difference to EGLE and the Defendant. If both EGLE and Defendant accept those recommendations, the termination criteria shall be modified in accordance with such recommendations. If EGLE and the Defendant disagree with the recommendations, EGLE's proposed resolution of the dispute shall be final unless Defendant invokes the procedures for judicial dispute resolution as provided in Section XVI of this Consent Judgment. The recommendation of the scientific advisory panel and any related documents shall be submitted to the Court as part of the record to be considered by the Court in resolving the dispute.

D. Post-Termination Monitoring

1. Eastern Area

a. Prohibition Zone Containment Objective. Except as otherwise provided pursuant to Section V.C.2, Defendant shall continue to monitor the Groundwater Contamination as it migrates within the Prohibition Zone until all approved monitoring wells are below 7.2 ug/L or such other applicable criterion for 1,4-dioxane for six consecutive months, or Defendant can establish to EGLE's satisfaction that continued monitoring is not necessary to satisfy the Prohibition Zone Containment Objective. Defendant's request to terminate monitoring must be made in writing for review and approval pursuant to Section X of this Consent Judgment. Defendant may initiate dispute resolution pursuant to Section XVI of this Consent Judgment if EGLE does not approve its termination request.

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b. Groundwater-Surface Water Interface Objective. Except as provided in Section V.D.1.a, for Prohibition Zone monitoring wells, post-termination monitoring is required for Eastern Area wells for a minimum of ten years after purging is terminated under Section V.C.1.~~a~~b. with cessation subject to EGLE approval. Defendant's request to terminate monitoring must be made in writing for review and approval pursuant to Section X of this Consent Judgment. Defendant may initiate dispute resolution pursuant to Section XVI of this Consent Judgment if EGLE does not approve its termination request.

2. Western Area. Post-termination monitoring will be required for a minimum of ten years after termination of extraction with cessation subject to EGLE approval. Except as otherwise provided pursuant to Section V.C.2, Defendant shall continue to monitor the groundwater in accordance with approved monitoring plan(s), to verify that it remains in compliance with the Non-Expansion Cleanup Objective set forth in Section V.B.1 and the Groundwater-Surface Water Interface Objective set forth in Section V.B.2. If any exceedance is detected, Defendant shall immediately notify EGLE and take whatever steps are necessary to comply with the requirements of Section V.B.1, or V.B.2, as applicable.

E. Quality Assurance Project Plan (QAPP). Defendant previously voluntarily submitted to EGLE for review and approval a QAPP, which is intended to describe the quality control, quality assurance, sampling protocol, and chain of custody procedures that will be used in carrying out the tasks required by this Consent Judgment. EGLE shall review, and Defendant shall revise accordingly, the QAPP to ensure that it is in general accordance with the United States Environmental Protection Agency's ("U.S. EPA" or "EPA") "Guidance for Quality Assurance Project Plans," EPA QA/G-5, December 2002; and American National Standard

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ANSI/ASQC E4-2004, “Quality Systems For Environmental Data And Technology Programs – Requirements With Guidance For Use.”

VI. GELMAN PROPERTY RESPONSE ACTIVITIES

A. Gelman Property Objectives. The objectives for the Gelman Property shall be to prevent the migration of 1,4-dioxane from contaminated soils on the Gelman Property into any aquifer at concentrations or locations that cause non-compliance with the Western Area objectives set forth in Sections V.B.1 and V.B.2.

B. Response Activities.

1. Remedial Systems. Defendant shall design and implement remedial systems at the Gelman Property as necessary to achieve the Gelman Property Objectives.

2. Monitoring. Defendant shall implement an EGLE-approved Compliance Monitoring Plan to verify that the Gelman Property Soil Contamination does not cause or contribute to non-compliance with the Western Area objectives set forth in Sections V.B.1 and V.B.2, and to verify the effectiveness of any implemented remedial system.

~~C. Additional Source Control. Defendant shall implement the following Response Activities to reduce the mass of and/or exposure to 1,4-dioxane present in the soils and/or shallow groundwater on the Gelman Property subject to receipt of any required approvals pursuant to Section VII.D:~~

~~1. Additional Groundwater Extraction. Defendant shall install and operate three “Phase I” extraction wells (one of which was previously installed) at the general locations depicted in the attached Attachment I to enhance control and mass removal of 1,4-dioxane from this area of shallow groundwater contamination. Defendant shall operate these extraction wells~~

Commented [14]: Gelman Comment: Gelman is no longer offering the additional onsite source control measures. These measures were offered as part of a comprehensive settlement package negotiated with EGLE and the Intervenors that included consideration in exchange for Gelman’s commitment to undertake this work as part of the Consent Judgment. Because the Intervenors have rejected that settlement package and, with that rejection, rescinded the consideration essential to Gelman’s offer, Gelman is no longer proposing this work as part of an amended Consent Judgment. *See* Gelman Legal Brief at §III, p 37-40; Gelman Technical Report at 30-35.

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~~at a combined purge rate of approximately 75 gpm, subject to aquifer yield. Defendant shall have the discretion to adjust the individual well purge rates in order to optimize mass removal. Subject to Defendant's ability to adjust individual well purge rates, Defendant shall continue to extract a combined purge rate of approximately 75 gpm, subject to aquifer yield, from this system until the 1,4-dioxane concentration in the groundwater extracted from each of these extraction wells has been reduced below 500 ug/L and, once the concentrations in all three of the wells have been reduced below 500 ug/L, Defendant shall cycle those wells off and on for several periods of time approved by EGLE to demonstrate that significant concentration rebound is not occurring. Before otherwise significantly reducing or terminating extraction from this system, Defendant shall consult with EGLE and provide a written analysis, together with the data that supports its conclusion that the concentration of 1,4-dioxane in the groundwater extracted from each of these wells has been reduced below 500 ug/L, as stated above. EGLE will review the analysis and data and provide a written response to Defendants within 56 days after receiving Defendant's written analysis and data. If Defendant disagrees with EGLE's conclusion, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The Defendant shall not significantly reduce or terminate the extraction from this system during the 56-day review period or while Defendant is disputing EGLE's conclusion.~~

~~Based on the performance achieved from these extraction wells, the Parties shall evaluate whether installation of up to three additional extraction wells at the general locations indicated on Attachment I would accelerate mass removal to a degree that meaningfully benefits the Remediation. If EGLE determines that additional mass removal from these locations would be beneficial, Defendant shall, subject to its right to invoke Dispute Resolution under Section XVI,~~

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install and operate these additional wells pursuant to a work plan approved by EGLE.

Groundwater extracted from the extraction wells described in this subparagraph will be conveyed to the Wagner Road Treatment Facility for treatment and disposal pursuant to Defendant's NPDES Permit No. MI-0048453, as amended or re-issued.

2. Phytoremediation – Former Pond 1 and 2 Area. Defendant shall apply phytoremediation techniques in the treatment area depicted on Attachment I to reduce the potential mass flux of 1,4-dioxane from vadose zone soils in this area to the groundwater aquifers. Defendant shall plant and maintain trees in the treatment area in order to: (i) remove 1,4-dioxane mass by via biodegradation and transpiration; and (ii) extract and reduce the volume of shallow perched groundwater in this area. Defendant shall install and maintain the trees in a healthy state and replace trees as necessary to assure continued success of the phytoremediation system. Defendant shall continue to operate the phytoremediation system as set forth above until it determines that the further reduction of the mass flux of 1,4-dioxane from the vadose zone soils to the groundwater aquifers is not necessary to achieve compliance with the Gelman Property Objectives. Before significantly reducing or terminating phytoremediation in the Former Pond 1 and 2 area, Defendant shall consult with EGLE and provide a written analysis, together with the data that supports its conclusions. EGLE will review the analysis and data and provide a written response to Defendants within 56 days after receiving Defendant's written analysis and data. If Defendant disagrees with EGLE's conclusion, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The Defendant shall not significantly reduce or terminate the phytoremediation during the 56-day review period or while Defendant is disputing EGLE's conclusion.

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3. Phytoremediation – Marshy Area. Defendant will undertake actions to reduce the percolation/infiltration of 1,4-dioxane from Marshy Area to the underlying groundwater through the application of phytoremediation techniques in the area depicted in Attachment I. The initial phase of these Response Activities may include further investigation of the Marshy Area as needed to complete the phytoremediation design regarding methods of enabling roots from trees grown in the Marshy Area to extend into deeper soils containing elevated concentrations of 1,4-dioxane. Defendant shall install and maintain the trees in a healthy state as necessary to assure continued success of the phytoremediation system. Defendant shall continue to operate the phytoremediation system as set forth above until it determines that the further reduction of the percolation/infiltration of 1,4-dioxane from the Marshy Area to the underlying groundwater is not necessary to achieve compliance with the Gelman Property Objectives. Before significantly reducing or terminating phytoremediation in the Marshy Area, Defendant shall consult with EGLE and provide a written analysis, together with the data that supports its conclusions. EGLE will review the analysis and data and provide a written response to Defendants within 56 days after receiving Defendant's written analysis and data. If Defendant disagrees with EGLE's decision to reduce or terminate the phytoremediation in the Marshy Area, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The Defendant shall not significantly reduce or terminate the phytoremediation in the Marshy Area during the 56-day review period or while Defendant is disputing EGLE's conclusion.

4. Former Burn Pit Area. Defendant shall undertake the following Response Activities with respect to the former Burn Pit area depicted on Attachments I and J:

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a. Install, operate, and maintain a Heated Soil Vapor Extraction System ("HSVE System"). The HSVE System shall be designed to reduce the mass of 1,4-dioxane present in the soils in the portion of the former Burn Pit area identified as "Heated Soil Vapor Extraction" on Attachment J. Defendant shall operate the HSVE system until 1,4-dioxane concentrations in the HSVE System's effluent/exhaust has been reduced to levels that indicate that continued operation of the HVSE system will no longer contribute to meaningful reduction of 1,4-dioxane mass in the Former Burn Pit Area Soils or the Soil Contamination in the treatment area is eliminated, whichever occurs first. Before significantly reducing or terminating operation of the HSVE system, Defendant shall consult with EGLE and provide a written analysis, together with the data that supports its conclusion, that one or both of the above conditions has been satisfied. EGLE will review the analysis and data and provide a written response to Defendant within 56 days after receiving Defendant's written analysis and data. If Defendant disagrees with EGLE's conclusion, Defendant may initiate dispute resolution under Section XVI of this Consent Judgment. The Defendant shall not significantly reduce or terminate operation of the HSVE system during the 56-day review period or while Defendant is disputing EGLE's conclusion.

Following completion of the HSVE treatment, Defendant shall install an impervious barrier over the HSVE Treatment Area to inhibit water from percolating through the soils in the former Burn Pit Area, except with regard to any areas where Defendant can demonstrate to EGLE's satisfaction that Soil Contamination does not exist. Defendant shall maintain the impervious barrier in place until Soil Contamination is no longer present in the underlying soils.

b. Cap the portion of the former Burn Pit area identified as "Capped

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~~Area" on Attachment J with an impervious barrier to inhibit water from percolating through the soils in the former Burn Pit area. Defendant shall maintain the impervious barrier in place until Soil Contamination is no longer present in the underlying soils.~~

~~5. After completing installation of the Response Activity systems listed in Sections VI.C.2, VI.C.3 and VI.C.4, the Defendant shall submit a separate installation report (i.e., as-built report) for each of the systems. The reports shall describe the systems as installed including, but not limited to, components of a system, location of components within the specific areas, depths of components of a system, and operational specifications of components of a system.~~

~~6. Required Approvals. Notwithstanding the above, Defendant's obligation to implement any of the additional source control Response Activities described in Section VI.C is conditioned upon receipt of any required approvals pursuant to Section VII.D.~~

VII. COMPLIANCE WITH OTHER LAWS AND PERMITS

A. Defendant shall undertake all activities pursuant to this Consent Judgment in accordance with the requirements of all applicable laws, regulations, and permits.

B. Defendant shall apply for all permits necessary for implementation of this Consent Judgment including, without limitation, surface water discharge permit(s) and air discharge permit(s).

C. Defendant shall include in all contracts entered into by the Defendant for Remedial Action required under this Consent Judgment (and shall require that any contractor include in all subcontracts), a provision stating that such contractors and subcontractors, including their agents and employees, shall perform all activities required by such contracts or

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subcontracts in compliance with and all applicable laws, regulations, and permits. Defendant shall provide a copy of relevant approved work plans to any such contractor or subcontractor.

D. The Plaintiffs agree to provide reasonable cooperation and assistance to the Defendant in obtaining necessary approvals and permits for Remedial Action. Plaintiffs shall not unreasonably withhold or delay any required approvals or permits for Defendant's performance of Remedial Action. Plaintiffs expressly acknowledge that one or more of the following permits and approvals may be a necessary prerequisite for one or more of the Response Activities set forth in this Consent Judgment:

1. Renewal of NPDES Permit No. MI-0048453 with respect to the discharge of treated groundwater to the unnamed tributary of Honey Creek.

~~2. An NPDES Permit that authorizes the discharge of groundwater to First Sister Lake in connection with operation of the Parklake Well following treatment with ozone/hydrogen peroxide technology that has effluent limitations, discharge limits (other than volume), and other conditions no more restrictive than those included in Defendant's 2014 NPDES Permit.~~

~~3. Negotiation and execution of an access agreement between Defendant and the City of Ann Arbor providing reasonable and necessary access to the City-owned parcel at Parklake Avenue and Jackson Road with respect to installation and operation of an extraction well, operation and maintenance of a groundwater treatment unit, and disposal of treated groundwater.~~

~~4~~2. An Air Permit for discharges of contaminants to the atmosphere for vapor extraction systems, ~~including the HSVE system described in Subsection VI.C.4, under terms~~

Commented [15]: Gelman Comment: Gelman is no longer proposing the Parklake Well. 1,4-dioxane concentrations in the Parklake area have been on a general decline, reducing the effectiveness of this proposed remedial action. *See* Brode Technical Report at 30-34. Furthermore, there was significant community resistance in the public comments and meetings regarding the surface water discharge to First Sister Lake, which is a required element of the response action were this action to be implemented. *Id.* at 31.

Commented [16]: Gelman Comment: For the reasons stated above and in Gelman's Legal Brief and Technical Report, Gelman is no longer proposing the onsite source control measures, including the HSVE system.

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~~reasonably acceptable to Defendant and as necessary~~ if such systems are part of the remedial design.

~~5.~~ 3. A Wetlands Permit~~(s) from EGLE and/or Scio Township~~ if necessary for ~~the response activities described in Section VI.C.3 with terms reasonably acceptable to Defendant.~~construction of the Marshy Area system or the construction of facilities as part of the Western Systems;

Commented [17]: Gelman Comment: For the reasons stated above and in Gelman's Legal Brief and Technical Report, Gelman is no longer proposing the onsite source control measures, including the phytoremediation.

~~6~~4. An Industrial User's Permit to be issued by the City of Ann Arbor for use of the sewer to dispose of treated or untreated purged groundwater from the Evergreen and/or Maple Road Wells. Plaintiffs have no objection to receipt by the Ann Arbor Wastewater Treatment Plant of the purged groundwater extracted pursuant to the terms and conditions of this Consent Judgment, and acknowledge that receipt of the purged groundwater would not necessitate any change in current and proposed residual management programs of the Ann Arbor Wastewater Treatment Plant.

~~7~~5. Permit(s) or permit exemptions to be issued by EGLE to authorize the reinjection of purged and treated groundwater in the Eastern Area and Western Area.

~~8~~6. Surface water discharge permit(s) for discharge into surface waters in the area of Little Lake, if necessary.

~~9~~7. Approval of the City of Ann Arbor and the Washtenaw County Drain Commissioner to use storm drains or sewers for the remedial programs.

~~10~~8. Washtenaw County permits as necessary for the installation of extraction wells, monitoring wells, and borings.

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VIII. SAMPLING AND ANALYSIS

Defendant shall make available to EGLE the results of all sampling, tests, and/or other data generated in the performance or monitoring of any requirement under this Consent Judgment. Sampling data generated consistent with this Consent Judgment shall be admissible in evidence in any proceeding related to enforcement of this Consent Judgment without waiver by any Party of any objection as to weight or relevance. EGLE and/or their authorized representatives, at their discretion, may take split or duplicate samples and observe the sampling event. EGLE shall make available to Defendant the results of all sampling, tests, and/or other data generated in the performance or monitoring of any requirement under this Consent Judgment. Defendant will provide EGLE with reasonable notice of changes in the schedule of data collection activities included in the progress reports submitted pursuant to Section XII.

IX. ACCESS

A. From the effective date of this Consent Judgment, EGLE, its authorized employees, agents, representatives, contractors, and consultants, upon presentation of proper identification, shall have the right at all reasonable times to enter the Site and any property to which access is required for the implementation of this Consent Judgment, to the extent access to the property is owned, controlled by, or available to the Defendant, for the purpose of conducting any activity authorized by this Consent Judgment, including, but not limited to:

1. Monitoring of the Remedial Action or any other activities taking place pursuant to this Consent Judgment on the property;
2. Verification of any data or information submitted to EGLE;
3. Conduct of investigations related to 1,4-dioxane concentrations at the Site;

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4. Collection of samples;

5. Assessment of the need for, or planning and implementing of, Response Activities at the Site; and

6. Inspection and copying of non-privileged documents including records, operating logs, contracts, or other documents required to assess Defendant's compliance with this Consent Judgment.

All Parties with access to the Site or other property pursuant to this Section shall comply with all applicable health and safety laws and regulations.

B. To the extent that the Site or any other area where Remedial Action is to be performed by the Defendant under this Consent Judgment is owned or controlled by persons other than the Defendant, Defendant shall use its best efforts to secure from such persons access for Defendant, EGLE, and their authorized employees, agents, representatives, contractors, and consultants. Defendant shall provide EGLE with a copy of each access agreement secured pursuant to this Section. For purposes of this Section, "best efforts" includes, but is not limited to, seeking judicial assistance to secure such access pursuant to MCL 324.20135a.

X. APPROVALS OF SUBMISSIONS

Upon receipt of any plan, report, or other item that is required to be submitted for approval pursuant to this Consent Judgment, as soon as practicable, but in no event later than 56 days after receipt of such submission, EGLE will: (1) approve the submission or (2) submit to Defendant changes in the submission that would result in approval of the submission. EGLE will (1) approve a feasibility study or plan that proposes a risk based cleanup or a remedy that requires public comment, or (2) submit to Defendant changes in such submittal that would result

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in approval in the time provided under Part 201. If EGLE does not respond within 56 days, Defendant may submit the matter to dispute resolution pursuant to Section XVI. Upon receipt of a notice of approval or changes from EGLE, Defendant shall proceed to take any action required by the plan, report, or other item, as approved or as may be modified to address the deficiencies identified by EGLE. If Defendant does not accept the changes proposed by EGLE, Defendant may submit the matter to dispute resolution pursuant to Section XVI.

XI. PROJECT COORDINATORS

A. Plaintiffs designate Daniel Hamel as EGLE's Project Coordinator. Defendant designates Lawrence Gelb as Defendant's Project Coordinator. Defendant's Project Coordinator shall have primary responsibility for implementation of the Remedial Action at the Site. EGLE's Project Coordinator will be the primary designated representative for Plaintiffs with respect to implementation of the Remedial Action at the Site. All communication between Defendant and EGLE, including all documents, reports, approvals, other submissions, and correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Judgment, shall be directed through the Project Coordinators. If any Party changes its designated Project Coordinator, that Party shall provide the name, address, email address and telephone number of the successor in writing to the other Party seven days prior to the date on which the change is to be effective. This Section does not relieve Defendant from other reporting obligations under the law.

B. EGLE may designate other authorized representatives, employees, contractors, and consultants to observe and monitor the progress of any activity undertaken pursuant to this Consent Judgment. EGLE's Project Coordinator shall provide Defendant's Project Coordinator

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with the names, addresses, telephone numbers, positions, and responsibilities of any person designated pursuant to this Section.

XII. PROGRESS REPORTS

Defendant shall provide to EGLE written quarterly progress reports that shall: (1) describe the actions which have been taken toward achieving compliance with this Consent Judgment during the previous three months; (2) describe data collection and activities scheduled for the next three months; and (3) include all results of sampling and tests and other data received by Defendant, its consultants, engineers, or agents during the previous three months relating to Remedial Action performed pursuant to this Consent Judgment. Defendant shall submit the first quarterly report to EGLE within 120 days after entry of this Consent Judgment, and by the 30th day of the month following each quarterly period thereafter, as feasible, until termination of this Consent Judgment as provided in Section XXV.

XIII. RESTRICTIONS ON ALIENATION

A. Defendant shall not sell, lease, or alienate the Gelman Property until: (1) it places an EGLE-approved land use or resource use restrictions on the affected portion(s) of the Gelman Property; and (2) any purchaser, lessee, or grantee provides to EGLE its written agreement providing that the purchaser, lessee, or grantee will not interfere with any term or condition of this Consent Judgment. Notwithstanding any purchase, lease, or grant, Defendant shall remain obligated to comply with all terms and conditions of this Consent Judgment.

B. Any deed, title, or other instrument of conveyance regarding the Gelman Property shall contain a notice that Defendant's Property is the subject of this Consent Judgment, setting

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forth the caption of the case, the case number, and the court having jurisdiction herein.

XIV. FORCE MAJEURE

Any delay attributable to a Force Majeure shall not be deemed a violation of Defendant's obligations under this Consent Judgment.

A. "Force Majeure" is defined as an occurrence or nonoccurrence arising from causes beyond the control of Defendant or of any entity controlled by the Defendant performing Remedial Action, such as Defendant's employees, contractors, and subcontractors. Such occurrence or nonoccurrence includes, but is not limited to: (1) an Act of God; (2) untimely review of permit applications or submissions; (3) acts or omissions of third parties for which Defendant is not responsible; (4) insolvency of any vendor, contractor, or subcontractor retained by Defendant as part of implementation of this Consent Judgment; and (5) delay in obtaining necessary access agreements under Section IX that could not have been avoided or overcome by due diligence. "Force Majeure" does not include unanticipated or increased costs, changed financial circumstances, or nonattainment of the treatment and termination standards set forth in Sections V and VI.

B. When circumstances occur that Defendant believes constitute Force Majeure, Defendant shall notify EGLE by telephone of the circumstances within 48 hours after Defendant first believes those circumstances to apply. Within 14 working days after Defendant first believes those circumstances to apply, Defendant shall supply to EGLE, in writing, an explanation of the cause(s) of any actual or expected delay, the anticipated duration of the delay, the measures taken and the measures to be taken by Defendant to avoid, minimize, or overcome the delay, and the timetable for implementation of such measures. Failure of Defendant to

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comply with the written notice provisions of this Section shall constitute a waiver of Defendant's right to assert a claim of Force Majeure with respect to the circumstances in question.

C. A determination by EGLE that an event does not constitute Force Majeure, that a delay was not caused by Force Majeure, or that the period of delay was not necessary to compensate for Force Majeure may be subject to dispute resolution under Section XVI of this Consent Judgment.

D. EGLE shall respond, in writing, to any request by Defendant for a Force Majeure extension within 30 days of receipt of the Defendant's request. If EGLE does not respond within that time period, Defendant's request shall be deemed granted. If EGLE agrees that a delay is or was caused by Force Majeure, Defendant's delays shall be excused, stipulated penalties shall not accrue, and EGLE shall provide Defendant such additional time as may be necessary to compensate for the Force Majeure event.

E. Delay in achievement of any obligation established by this Consent Judgment shall not automatically justify or excuse delay in achievement of any subsequent obligation unless the subsequent obligation automatically follows from the delayed obligation.

XV. REVOCATION OR MODIFICATION OF LICENSES OR PERMITS

Any delay attributable to the revocation or modification of licenses or permits obtained by Defendant to implement remediation actions as set forth in this Consent Judgment shall not be deemed a violation of Defendant's obligations under this Consent Judgment, provided that such revocation or modification arises from causes beyond the control of Defendant or of any entity controlled by the Defendant performing Remedial Action, such as Defendant's employees, contractors, and subcontractors.

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A. Licenses or permits that may need to be obtained or modified by Defendant to implement the Remedial Actions are those specified in Section VII.D. and licenses, easements, and other agreements for access to property or rights of way on property necessary for the installation of remedial systems required by this Consent Judgment.

B. A revocation or modification of a license or permit within the meaning of this Section means withdrawal of permission, denial of permission, a limitation or a change in license or permit conditions that delays the implementation of all or part of a remedial system. Revocation or modification due to Defendant's violation of a license or permit (or any conditions of a license or permit) shall not constitute a revocation or modification covered by this Section.

C. When circumstances occur that Defendant believes constitute revocation or modification of a license or permit, Defendant shall notify EGLE by telephone of the circumstances within 48 hours after Defendant first believes those circumstances to apply. Within 14 working days after Defendant first believes those circumstances to apply, Defendant shall supply to EGLE, in writing, an explanation of the cause(s) of any actual or expected delay, the anticipated duration of the delay, the measures taken and the measures to be taken by Defendant to avoid, minimize, or overcome the delay, and the timetable for implementation of such measures. Failure of Defendant to comply with the written notice provisions of this Section shall constitute a waiver of Defendant's right to assert a claim of revocation or modification of a license or permit with respect to the circumstances in question.

D. A determination by EGLE that an event does not constitute revocation or modification of a license or permit, that a delay was not caused by revocation or modification of a license or permit, or that the period of delay was not necessary to compensate for revocation or

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modification of a license or permit may be subject to dispute resolution under Section XVI of this Consent Judgment.

E. EGLE shall respond, in writing, to any request by Defendant for a revocation or modification of a license or permit extension within 30 days of receipt of the Defendant's request. If EGLE does not respond within that time period, Defendant's request shall be deemed granted. If EGLE agrees that a delay is or was caused by revocation or modification of a license or permit, Defendant's delays shall be excused, stipulated penalties shall not accrue, and EGLE shall provide Defendant such additional time as may be necessary to compensate for the revocation or modification of a license or permit.

F. Delay in achievement of any obligation established by this Consent Judgment shall not automatically justify or excuse delay in achievement of any subsequent obligation unless the subsequent obligation automatically follows from the delayed obligation.

XVI. DISPUTE RESOLUTION

A. The dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under this Consent Judgment and shall apply to all provisions of this Consent Judgment except for disputes related to Prohibition Zone boundary modification under Sections V.A.2.f and V.A.6, whether or not particular provisions of this Consent Judgment in question make reference to the dispute resolution provisions of this Section. Any dispute that arises under this Consent Judgment initially shall be the subject of informal negotiations between the Parties. The period of negotiations shall not exceed ten working days from the date of written notice by EGLE or the Defendant that a dispute has arisen. This period may be extended or shortened by agreement of EGLE or the Defendant.

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B. Immediately upon expiration of the informal negotiation period (or sooner if upon agreement of the parties), EGLE shall provide to Defendant a written statement setting forth EGLE's proposed resolution of the dispute. Such resolution shall be final unless, within 15 days after receipt of EGLE's proposed resolution (clearly identified as such under this Section), Defendant files a petition for resolution with the Washtenaw County Circuit Court setting forth the matter in dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Judgment.

C. Within ten days of the filing of the petition, EGLE may file a response to the petition, and unless a dispute arises from the alleged failure of EGLE to timely make a decision, EGLE will submit to the Court all documents containing information related to the matters in dispute, including documents provided to EGLE by Defendant. In the event of a dispute arising from the alleged failure of EGLE to timely make a decision, within ten days of filing of the petition, each party shall submit to the Court correspondence, reports, affidavits, maps, diagrams, and other documents setting forth facts pertaining to the matters in dispute. Those documents and this Consent Judgment shall comprise the record upon which the Court shall resolve the dispute. Additional evidence may be taken by the Court on its own motion or at the request of either party if the Court finds that the record is incomplete or inadequate. Review of the petition shall be conducted by the Court and shall be confined to the record. The review shall be independent of any factual or legal conclusions made by the Court prior to the date of entry of this Consent Judgment.

D. The Court shall uphold the decision of EGLE on the issue in dispute unless the

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Court determines that the decision is any of the following:

1. Inconsistent with this Consent Judgment;
2. Not supported by competent, material, and substantial evidence on the whole record;
3. Arbitrary, capricious, or clearly an abuse or unwarranted exercise of discretion; or
4. Affected by other substantial and material error of law.

E. The filing of a petition for resolution of a dispute shall not by itself extend or postpone any obligation of Defendant under this Consent Judgment, provided, however, that payment of stipulated penalties with respect to the disputed matter shall be stayed pending resolution of the dispute. Notwithstanding the stay of payment, stipulated penalties shall accrue as provided in Section XVII. Stipulated penalties that have accrued with respect to the matter in dispute shall not be assessed by the Court and shall be dissolved if Defendant prevails on the matter. The Court may also direct that stipulated penalties shall not be assessed and paid as provided in Section XVII upon a determination that there was a substantial basis for Defendant's position on the disputed matter.

XVII. STIPULATED PENALTIES

A. Except as otherwise provided, if Defendant fails or refuses to comply with any term or condition in Sections IV, V, VI, VII, or VIII, or with any plan, requirement, or schedule established pursuant to those Sections, then Defendant shall pay stipulated penalties in the following amounts for each working day for every failure or refusal to comply or conform:

Period of Delay	Penalty Per Violation Per Day

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1st through 15th Day	$ 1,000
15th through 30th Day	$ 1,500
Beyond 30 Days	$ 2,000

B. Except as otherwise provided if Defendant fails or refuses to comply with any other term or condition of this Consent Judgment, Defendant shall pay to EGLE stipulated penalties of $500.00 per working day for each and every failure to comply.

C. If Defendant is in violation of this Consent Judgment, Defendant shall notify EGLE of any violation no later than five working days after first becoming aware of such violation, and shall describe the violation.

D. Stipulated penalties shall begin to accrue upon the next day after performance was due or other failure or refusal to comply occurred. Penalties shall continue to accrue until the final day of correction of the noncompliance. Separate penalties shall accrue for each separate failure or refusal to comply with the terms and conditions of this Consent Judgment. Penalties may be waived in whole or in part by EGLE or may be dissolved by the Court pursuant to Section XVII.

E. Stipulated penalties shall be paid no later than 14 working days after receipt by Defendant of a written demand from EGLE. Defendant shall make payment by transmitting a check in the amount due, payable to the "State of Michigan," addressed to the Revenue Control Unit; Finance Section, Administration Division; Michigan Department of Environment, Great Lakes, and Energy; P.O. Box 30657; Lansing, MI 48909-8157. The check shall be transmitted via Courier to the Revenue Control Unit; Finance Section, Administration Division; Michigan Department of Environment, Great Lakes, and Energy; Constitution Hall, 5th Floor South Tower; 525 West Allegan Street; Lansing, MI 48933-2125. To ensure proper credit, Defendant

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shall include the settlement ID - ERD1902 on the payment.

F. Plaintiffs agree that, in the event that an act or omission of Defendant constitutes a violation of this Consent Judgment subject to stipulated penalties and a violation of other applicable law, Plaintiffs will not impose upon Defendant for that violation both the stipulated penalties provided under this Consent Judgment and the civil penalties permitted under other applicable laws. EGLE reserves the right to pursue any other remedy or remedies to which they may be entitled under this Consent Judgment or any applicable law for any failure or refusal of the Defendant to comply with the requirements of this Consent Judgment.

XVIII. PLAINTIFFS' COVENANT NOT TO SUE AND RESERVATION OF RIGHTS

A. Except as otherwise provided in this Consent Judgment, Plaintiffs covenant not to sue or take administrative action for Covered Matters against Defendant, its officers, employees, agents, directors, and any persons acting on its behalf or under its control.

B. "Covered Matters" shall mean any and all claims available to Plaintiffs under federal and state law arising out of the subject matter of the Plaintiffs' Complaint with respect to the following:

1. Claims for injunctive relief to address soil, groundwater, and surface water contamination at or emanating from the Gelman Property;
2. Claims for civil penalties and costs;
3. Claims for natural resource damages;
4. Claims for reimbursement of response costs incurred prior to entry of this Consent Judgment or incurred by Plaintiffs for provision of alternative water supplies in the Evergreen Subdivision; and

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5. Claims for reimbursement of costs incurred by Plaintiffs for overseeing the implementation of this Consent Judgment.

C. "Covered Matters" does not include:

1. Claims based upon a failure by Defendant to comply with the requirements of this Consent Judgment;

2. Liability for violations of federal or state law which occur during implementation of the Remedial Action; and

3. Liability arising from the disposal, treatment, or handling of any hazardous substance removed from the Site.

D. With respect to liability for alleged past violations of law, this covenant not to sue shall take effect on the effective date of this Consent Judgment. With respect to future liability for performance of response activities required to be performed under this Consent Judgment, the covenant not to sue shall take effect upon issuance by EGLE of the Certificate of Completion in accordance with Section XXV.

E. Notwithstanding any other provision in this Consent Judgment: (1) EGLE reserves the right to institute proceedings in this action or in a new action seeking to require Defendant to perform any additional response activity at the Site; and (2) EGLE reserves the right to institute proceedings in this action or in a new action seeking to reimburse EGLE for response costs incurred by the State of Michigan relating to the Site. EGLE's rights in Sections XVIII.E.1 and E.2 apply if the following conditions are met:

1. For proceedings prior to EGLE's certification of completion of the Remedial Action concerning the Site,

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a. (i) conditions at the Site, previously unknown to EGLE, are discovered after entry of this Consent Judgment, (ii) new information previously unknown to EGLE is received after entry of this Consent Judgment, or (iii) EGLE adopts one or more new, more restrictive cleanup criteria for 1,4-dioxane pursuant to Part 201 after entry of this Consent Judgment; and

b. these previously unknown conditions, new information, and/or change in criteria indicate that the Remedial Action is not protective of the public health, safety, welfare, and the environment; and

2. For proceedings subsequent to EGLE's certification of completion of the Remedial Action concerning the Site,

a. (i) conditions at the Site, previously unknown to EGLE, are discovered after certification of completion by EGLE, (ii) new information previously unknown to EGLE is received after certification of completion by EGLE, or (iii) EGLE adopts one or more new, more restrictive cleanup criteria for 1,4-dioxane pursuant to Part 201, after certification of completion by EGLE; and

b. these previously unknown conditions, new information, and/or change in criteria indicate that the Remedial Action is not protective of the public health, safety, welfare, and the environment.

If EGLE adopts one or more new, more restrictive, cleanup criteria, EGLE's rights in Sections XVIII.E.1 and E.2 shall also be subject to Defendant's right to seek another site-specific criterion(ia) that is protective of public health, safety, welfare, and the environment and/or to argue that EGLE has not made the demonstration(s) required under this Section.

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F. Nothing in this Consent Judgment shall in any manner restrict or limit the nature or scope of Response Activities that may be taken by EGLE in fulfilling its responsibilities under federal and state law, and this Consent Judgment does not release, waive, limit, or impair in any manner the claims, rights, remedies, or defenses of EGLE against a person or entity not a party to this Consent Judgment.

G. Except as expressly provided in this Consent Judgment, EGLE reserves all other rights and defenses that they may have, and this Consent Judgment is without prejudice, and shall not be construed to waive, estop, or otherwise diminish EGLE's right to seek other relief with respect to all matters other than Covered Matters.

XIX. DEFENDANT'S COVENANT NOT TO SUE AND RESERVATION OF RIGHTS

A. Defendant hereby covenants not to sue and agrees not to assert any claim or cause of action against EGLE or any other agency of the State of Michigan with respect to environmental contamination at the Site or response activities relating to the Site arising from this Consent Judgment.

B. Notwithstanding any other provision in this Consent Judgment, for matters that are not Covered Matters as defined in Section XVIII.B, or in the event that Plaintiffs institute proceedings as allowed under Section XVIII.E., Defendant reserves all other rights, defenses, or counterclaims that it may have with respect to such matters and this Consent Judgment is without prejudice, and shall not be construed to waive, estop, or otherwise diminish Defendant's right to seek other relief and to assert any other rights and defenses with respect to such other matters.

C. Nothing in this Consent Judgment shall in any way impair Defendant's rights, claims, or defenses with respect to any person not a party to this Consent Judgment.

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XX. INDEMNIFICATION, INSURANCE, AND FINANCIAL ASSURANCE

A. Defendant shall indemnify and save and hold harmless the State of Michigan and its departments, agencies, officials, agents, employees, contractors, and representatives from any and all claims or causes of action arising from, or on account of, acts or omissions of Defendant, its officers, employees, agents, and any persons acting on its behalf or under its control in carrying out Remedial Action pursuant to this Consent Judgment. EGLE shall not be held out as a party to any contract entered into by or on behalf of Defendant in carrying out activities pursuant to this Consent Judgment. Neither the Defendant nor any contractor shall be considered an agent of EGLE. Defendant shall not indemnify or save and hold harmless Plaintiffs from their own negligence pursuant to this Section.

B. Prior to commencing any Remedial Action on the Gelman Property, Defendant shall secure, and shall maintain for the duration of the Remedial Action, comprehensive general liability insurance with limits of $1,000,000.00, combined single limit, naming as an additional insured the State of Michigan. If Defendant demonstrates by evidence satisfactory to EGLE that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then with respect to that contractor or subcontractor, Defendant need provide only that portion, if any, of the insurance described above that is not maintained by the contractor or subcontractor.

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C. Financial Assurance

1. Defendant shall be responsible for providing and maintaining financial assurance in a mechanism approved by EGLE in an amount sufficient to cover the estimated cost to assure performance of the response activities required to meet the remedial objectives of this Consent Judgment including, but not limited to, investigation, monitoring, operation and maintenance, and other costs (collectively referred to as "Long-Term Remedial Action Costs"). Defendant shall continuously maintain a financial assurance mechanism ("FAM") until EGLE's Remediation and Redevelopment Division ("RRD") Chief or his or her authorized representative notifies it in writing that it is no longer required to maintain a FAM.

2. The Letter of Credit provided in Attachment K is the initial FAM approved by EGLE. Defendant shall be responsible for providing and maintaining financial assurance in a mechanism acceptable to EGLE to assure the performance of the Long Term Remedial Action Costs required by Defendant's selected remedial action.

3. The FAM shall remain in an amount sufficient to cover Long Term Remedial Action Costs for a 30-year period. Unless Defendant opts to use and satisfies the Financial Test or Financial Test/Corporate Guarantee as provided in Section XX.C.8, the FAM shall remain in a form that allows EGLE to immediately contract for the response activities for which financial assurance is required in the event Defendant fails to implement the required tasks, subject to Defendant's rights under Sections XIV and XVI.

4. Within 120 days of the Effective Date of this Fourth Amended Consent Judgment, Defendant shall provide EGLE with an estimate of the amount of funds necessary to assure Long Term Remedial Action Costs for the following 30-year period based upon an annual

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estimate of costs for the response activities required by this Fourth Amended Consent Judgment as if they were to be conducted by a person under contract to EGLE (the "Updated Long Term Remedial Action Cost Estimate"). The Updated Long Term Remedial Action Cost Estimate shall include all assumptions and calculations used in preparing the cost estimate and shall be signed by an authorized representative of Defendant who shall confirm the validity of the data. Defendant may only use a present worth analysis if an interest accruing FAM is selected. Within 60 days after Defendant's submittal of the Updated Long Term Remedial Action Cost Estimate, Defendant shall capitalize or revise the FAM in a manner acceptable to EGLE to address Long Term Remedial Action Costs unless otherwise notified by EGLE. If EGLE disagrees with the conclusions of the Updated Long Term Remedial Action Cost Estimate, Defendant shall capitalize the FAM to a level acceptable to EGLE within 30 days of EGLE notification, subject to Dispute Resolution under Section XVI.

5. Sixty days prior to the 5-year anniversary of the Effective Date of this Fourth Amended Consent Judgment and each subsequent 5-year anniversary, Defendant shall provide to EGLE a report containing the actual Long Term Remedial Action Costs for the previous 5-year period and an estimate of the amount of funds necessary to assure Long Term Remedial Action Costs for the following 30-year period given the financial trends in existence at the time of preparation of the report ("Long Term Remedial Action Cost Report"). The cost estimate shall be based upon an annual estimate of maximum costs for the response activities required by this Fourth Amended Consent Judgment as if they were to be conducted by a person under contract to EGLE, provided that, if Defendant is using the Financial Test or Corporate Guarantee/Financial Test under Section XX.C.8, below, Defendant may use an estimate on its

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internal costs to satisfy the Financial Test. The Long Term Remedial Action Cost Report shall also include all assumptions and calculations used in preparing the necessary cost estimate and shall be signed by an authorized representative of Defendant who shall confirm the validity of the data. Defendant may only use a present worth analysis if an interest accruing FAM is selected.

6. Within 60 days after Defendant's submittal of the Long Term Remedial Action Cost Report to EGLE, Defendant shall capitalize or revise the FAM in a manner acceptable to EGLE to address Long Term Remedial Action Costs consistent with the conclusions of the Long Term Remedial Action Cost Report unless otherwise notified by EGLE. If EGLE disagrees with the conclusions of the Long Term Remedial Action Cost Report, Defendant shall capitalize the FAM to a level acceptable to EGLE within 30 days of EGLE notification, subject to dispute resolution under Section XVI. If, at any time, EGLE determines that the FAM does not secure sufficient funds to address Long Term Remedial Action Costs, Defendant shall capitalize the FAM or provide an alternate FAM to secure any additional costs within 30 days of request by EGLE, subject to dispute resolution under Section XVI.

7. If, pursuant to the Long Term Remedial Action Cost Report, Defendant can demonstrate that the FAM provides funds in excess of those needed for Long Term Remedial Action Costs, Defendant may request a modification in the amount. Any requested FAM modifications must be accompanied by a demonstration that the proposed FAM provides adequate funds to address future Long Term Remedial Action Costs. Upon EGLE approval of the request, Defendant may modify the FAM as approved by EGLE. Modifications to the FAM

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pursuant to this Section shall be approved by EGLE RRD Chief or his or her authorized representative, subject to dispute resolution under Section XVI.

8. If Defendant chooses to use the Financial Test or Corporate Guarantee/Financial Test attached as Attachment L (hereinafter, the term "Financial Test" refers to both an independent financial test or a financial test utilized in conjunction with a corporate guarantee), Defendant shall, within 90 days after the end of Defendant's next fiscal year and the end of each succeeding fiscal year, submit to EGLE the necessary forms and supporting documents to demonstrate to the satisfaction of EGLE that Defendant can continue to meet the Financial Test requirements. If Defendant can no longer meet the financial test requirements, Defendant shall submit a proposal for an alternate FAM to satisfy its financial obligations with respect to this Consent Judgment.

9. If the Financial Test is being used as the FAM, EGLE, based on a reasonable belief that Defendant may no longer meet the requirements for the Financial Test, may require reports of financial condition at any time from Defendant, and/or require Defendant to submit updated Financial Test information to determine whether it meets the Financial Test criteria. Defendant shall provide, with reasonable promptness to EGLE, any other data and information that may reasonably be expected to materially adversely affect Defendant's ability to meet the Financial Test requirements. If EGLE finds that Defendant no longer meets the Financial Test requirements, Defendant shall, within 30 days after notification from EGLE, submit a proposal for an alternate FAM to satisfy its financial obligations with respect to this Consent Judgment, subject to dispute resolution under Section XVI.

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10. If the Financial Test/Corporate Guarantee is used as the FAM, Defendant shall comply with the terms of the Corporate Guarantee. The Corporate Guarantee shall remain in place until Long-Term Remedial Action Costs are no longer required or Defendant establishes an alternate FAM acceptable to EGLE.

11. If Defendant wishes to change the type of FAM or establish a new FAM, Defendant shall submit a request to EGLE for approval. Upon EGLE approval of the request, Defendant may change the type of FAM or establish the new FAM as approved by EGLE. Modifications to the FAM pursuant to this Section shall be approved by EGLE RRD Chief or his or her authorized representative, subject to dispute resolution under Section XVI.

12. If Defendant dissolves or otherwise ceases to conduct business and fails to make arrangements acceptable to EGLE for the continued implementation of all activities required by this Consent Judgment, all rights under this Consent Judgment regarding the FAM shall immediately and automatically vest in EGLE in accordance with the FAM.

XXI. RECORD RETENTION

Defendant, Plaintiffs, and their representatives, consultants, and contractors shall preserve and retain, during the pendency of this Consent Judgment and for a period of ten years after its termination, all records, sampling or test results, charts, and other documents that are maintained or generated pursuant to any requirement of this Consent Judgment, including, but not limited to, documents reflecting the results of any sampling or tests or other data or information generated or acquired by Plaintiffs or Defendant, or on their behalf, with respect to the implementation of this Consent Judgment. After the ten-year period of document retention, the Defendant and its successors shall notify EGLE, in writing, at least 90 days prior to the

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destruction of such documents or records, and upon request, the Defendant and/or its successor shall relinquish custody of all records and documents to EGLE.

XXII. ACCESS TO INFORMATION

Upon request, EGLE and Defendant shall provide to each other copies of or access to all non-privileged documents and information within their possession and/or control or that of their employees, contractors, agents, or representatives, relating to activities at the Site or to the implementation of this Consent Judgment, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Remedial Action. Upon request, Defendant shall also make available to EGLE, their employees, contractors, agents, or representatives with knowledge or relevant facts concerning the performance of the Remedial Action. The Plaintiffs shall treat as confidential all documents provided to Plaintiffs by the Defendant marked "confidential" or "proprietary."

XXIII. NOTICES

Whenever under the terms of this Consent Judgment notice is required to be given or a report, sampling data, analysis, or other document is required to be forwarded by one Party to the other, such notice or document shall be directed to the following individuals at the specified addresses or at such other address as may subsequently be designated in writing:

For Plaintiffs:

Daniel Hamel
Project Coordinator
Michigan Department
of Environment, Great
Lakes, and Energy,
Remediation and Redevelopment

For Defendants:

Lawrence Gelb
Gelman Sciences Inc.
642 South Wagner Road
Ann Arbor, MI 48106

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Division
301 East Louis Glick Highway
Jackson, MI 49201 and

Michael L. Caldwell
Zausmer, P.C.
32255 Northwestern Hwy., Ste. 225
Farmington Hills, MI 48334

Any party may substitute for those designated to receive such notices by providing prior written notice to the other parties.

XXIV. MODIFICATION

This Consent Judgment may not be modified unless such modification is in writing, signed by the Plaintiffs and the Defendant, and approved and entered by the Court. Remedial Plans, work plans, or other submissions made pursuant to this Consent Judgment may be modified by mutual agreement of the Defendant and EGLE.

XXV. CERTIFICATION AND TERMINATION

A. When Defendant determines that it has completed all Remedial Action required by this Consent Judgment, Defendant shall submit to EGLE a Notification of Completion and a draft final report. The draft final report must summarize all Remedial Action performed under this Consent Judgment and the performance levels achieved. The draft final report shall include or refer to any supporting documentation.

B. Upon receipt of the Notification of Completion, EGLE will review the Notification of Completion and the accompanying draft final report, any supporting documentation, and the actual Remedial Action performed pursuant to this Consent Judgment. After conducting this review, and not later than three months after receipt of the Notification of Completion, EGLE shall issue a Certificate of Completion upon a determination by EGLE that

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Defendant has completed satisfactorily all requirements of this Consent Decree, including, but not limited to, completion of all Remedial Action, achievement of all termination and treatment standards required by this Consent Judgment, compliance with all terms and conditions of this Consent Judgment, and payment of any and all stipulated penalties owed to EGLE. If EGLE does not respond to the Notification of Completion within three months after receipt of the Notification of Completion, Defendant may submit the matter to dispute resolution pursuant to Section XVI. This Consent Judgment shall terminate upon motion and order of this Court after issuance of the Certificate of Completion. Upon issuance, the Certificate of Completion may be recorded.

XXVI. EFFECTIVE DATE

The effective date of this Consent Judgment shall be the date upon which this Consent Judgment is entered by the Court.

XXVII. SEVERABILITY

The provisions of this Consent Judgment shall be severable. Should any provision be declared by a court of competent jurisdiction to be inconsistent with federal or state law, and therefore unenforceable, the remaining provisions of this Consent Judgment shall remain in full force and effect.

XXVIII. SIGNATORIES

Each undersigned representatives of a Party to this Consent Judgment certifies that he or she is fully authorized by the Party to enter into this Consent Judgment and to legally bind such Party to the respective terms and conditions of this Consent Judgment.

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EXHIBIT

3

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STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

FRANK J. KELLEY, Attorney General
for the State of Michigan, ex rel.
MICHIGAN NATURAL RESOURCES COMMISSION,
MICHIGAN WATER RESOURCES COMMISSION,
AND MICHIGAN DEPARTMENT OF NATURAL
RESOURCES,

Plaintiffs

v.

No. 88-34734 CE

GELMAN SCIENCES, INC.,
A Michigan corporation,

OPINION AND ORDER

Defendant

OPINION AND ORDER rendered by the HONORABLE PATRICK J. CONLIN, CIRCUIT JUDGE, at Ann Arbor, Michigan, on July 25, 1991.

APPEARANCES;

A. MICHAEL LEFFLER (P24254)
ROBERT P. REICHEL (P31878)
SALLY J. CHURCHILL (P40558)
Assistant Attorneys General

DAVID H. FINK (P28235)
ALAN D. WASSERMAN (P39509)
THOMAS A. BISCUP (P40390)
Attorneys for Defendant

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STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

FRANK J. KELLEY, ATTORNEY GENERAL
FOR THE STATE OF MICHIGAN, EX REL.
MICHIGAN NATURAL RESOURCES COMMISSION,
MICHIGAN WATER RESOURCES COMMISSION
and MICHIGAN DEPARTMENT OF NATURAL
RESOURCES,

Plaintiffs

v.

No. 88-34734 CE

GELMAN SCIENCES, INC.,
A Michigan corporation,

OPINION AND ORDER

Defendant

At a session of said Court held in
the City of Ann Arbor, Washtenaw
County, Michigan, on July 25, 1991.

PRESENT: HONORABLE PATRICK J. CONLIN, CIRCUIT JUDGE

FINDING OF FACT

This case involves the use by Gelman Sciences, hereinafter known as "Gelman" of 1,4-dioxane. This substance is one of the raw materials used in the production of cellulose triacetate membrane. Gelman began manufacturing the cellulose triacetate membrane in 1966. In October of 1965 Gelman submitted a statement on new or increased use of water of the state for waste disposal purposes to the Water Resources Commission in accordance with Sec. 8b, Act 245 of

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Public Acts of 1929, as amended. In that statement Gelman stated that it was disposing of up to 9,000 gallons per day of processed waste water. In describing the expected characteristics of the waste to be discharged Gelman did not identify 1,4-dioxane by name, but did indicate that among the substances which Gelman proposed to discharge into its lagoon were ethelyne glycol ether. 1,4-dioxane is an ethelyne glycol ether. By submittal of the statement on new or increased water of the state for waste disposal purposes, dated October 26, 1965, Gelman applied for permission to discharge its processed waste water by discharge to the surface of the ground to soak in and evaporate. (Plaintiff's Exhibit 69)

By order of determination dated December 15, 1965, the Water Resources Commission, hereinafter known as the "WRC" authorized Gelman to discharge waste waters containing ethelyne glycol ethers to the ground. (Plaintiff's Exhibit 71)

Order 816 provides as follows:

"STATE OF MICHIGAN

WATER RESOURCES COMMISSION

Order No. 816

Statement of GELMAN INSTRUMENT COMPANY, a:
Michigan Corporation, Regarding a New Use:
of the GROUND WATERS near ANN ARBOR, :
MICHIGAN

ORDER OF DETERMINATION

WHEREAS, Gelman Instrument Company, a Michigan Corporation

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has filed with the Water Resources Commission a written statement dated October 17, 1965 for a prospective new use of the waters of the State for disposal of sewage and wastes from a proposed filter and instrument manufacturing business to be located at 600 South Wagner Road, Scio Township, Washtenaw County, Michigan; and

WHEREAS, the said written statement sets forth that Gelman Instrument Company proposes to dispose of approximately nine thousand (9,000) gallons per day of process wastes containing 0.5% ethylene glycol, 0.5% ethylene glycol ethers, 0.025% methyl pyrlidone, 0.005% dimethyl formamide and 2 milligrams per liter Triton X-100 and approximately three thousand (3,000) gallons per day of sanitary sewage into the ground, using certain described methods and facilities; and

WHEREAS, the Commission at its meeting on December 15, 1965, after giving due consideration to the statement and to investigations by its staff of the factors involved, is of the opinion and has determined that the restrictions and conditions as hereinafter set forth are necessary to protect the waters of the state against unlawful pollution;

NOW THEREFORE BE IT RESOLVED, that it is the order of the Commission that Gelman Instrument Company, a Corporation, their agents or successors, in disposing of sewage and wastes from a proposed filter and instrument manufacturing business to be located at 600 South Wagner Road, Scio Township, Washtenaw County, Michigan shall comply with the following restrictions and conditions:

1. No waste waters resulting from filter and instrument manufacturing process shall be discharged directly or indirectly into the surface waters of the state, but same shall be disposed of into the ground in such a manner and by means of such facilities and at such location that they shall not injuriously affect public health or commercial, industrial, and domestic water supply use.

2. No human sewage shall be discharged directly or indirectly into the surface waters of the state, but the same shall be disposed of into the ground by subsurface percolation methods.

3. No facilities necessary for compliance with restrictions and conditions set forth in this Order shall be constructed until plans for the

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same have been submitted to and approved by the Chief Engineer of the Commission.

BE IT FURTHER RESOLVED, that the aforesaid restrictions and conditions set forth in this Order shall become effective at and from the time this Order becomes final as provided herein and shall remain in effect until further order of the Commission: PROVIDED HOWEVER, that all sewage and wastes from said Gelman Instrument Company shall be connected to any sanitary system, which may be provided by any governmental unit, within sixty (60) days from the date when said sewer becomes available. At that time any restrictions and conditions imposed by said governmental unit shall supersede the restrictions and conditions imposed by this Order and this Order shall then be terminated.

BE IT FURTHER RESOLVED, that this instrument does not obviate the necessity of obtaining such permits as may be required by law from other units of government.

This Order made this 15th day of December, 1965 by the Commission in accordance with Act 245, P. A. 1929, as amended, and shall be final in the absence of request for public hearing filed within 15 days after receipt hereof, on motion by Mr. Vogt, supported by Mr. Ball, and unanimously carried.

PRESENT AND VOTING:

Gerald E. Eddy, for Director of Conservation, Chairman
Lynn F. Baldwin, for Conservation Groups, Vice Chairman
John E. Vogt, for State Health Commissioner
James V. Murray, for State Highway Commission
B. Dale Ball, Director of Agriculture
Jim Gilmore, for Industrial Management Groups
George F. Liddle, for Municipal Groups."

Gelman used a series of three ponds for treatment of its processed waste water. These ponds have been referred to as ponds 1, 2 and 3. Pond 1 was constructed in the early 1960's to accept processed waste water from Gelman's manufacturing.

Pond 1 was used until approximately 1976, at which time

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it was filled with dirt.

Pond 2 was located west of the Gelman Sciences plant and to the south of a marshy area. Gelman placed overflow water from pond 1 into pond 2. The water flowing into pond 2 was treated by using aerators and aerobic bacteria. For approximately two years in the late 1960's after water in pond 2 had reached a certain level, the water would overflow through a pipe into a marshy area. The rate of flow was between 5 to 10 gallons per minute. When the Water Resources Commission learned of this overflow in the late 1960's Gelman stopped the overflow from pond 2 by dredging out the bottom of pond 2 and letting the water seep into the ground. The order of determination of the WRC required seepage of the waste water from the bottom of pond 2 into the ground. This waste water did contain 1,4-dioxane. Thus, 1,4-dioxane was seeping into the ground with the approval of the DNR and WRC.

In March of 1970 in response to inquiries by the WRC concerning the status of Gelman's waste water system, Gelman affirmatively represented that the soluble organic solvents contained in the Gelman waste were not toxic or noxious per se.

The DNR had a toxic substance list. However, the substance 1,4-dioxane was not on the Michigan critical materials register at that time.

Pond 3 was constructed in approximately 1973 and continued in service until 1987. Pond 3 is located directly south of pond 2. Process waste water was deposited in pond 3

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immediately after it was constructed. The sides of pond 3 were lined with a plastic polymer material. The base in pond 3 was clay.

In the fall of 1976 Gelman applied for a permit to discharge its processed waste water through spray irrigation. The application required Gelman to disclose whether substances listed on the Michigan critical materials register are to be present in the discharge. Again, 1,4-dioxane was not on the critical materials register in 1976. Gelman again reported the discharge would contain "organic solvents" from filter manufacturing.

The order of determination previously issued by the WRC remained in effect until the issuance by the WRC in 1977 of a permit authorizing spray irrigation of processed waste water.

In October of 1970 in response to further inquiries by the WRC, Gelman stated it was forced to originate a new method of treatment because of the waste that was unique to its process. Gelman further represented that they did not damage the environment. Gelman further reported on the status of the waste water treatment system stating that gas chromatography has shown that none of the solvents used were present in pond 2, the last stage in the treatment process except for possible doubtful traces of glycol in some determinations.

The DNR had knowledge in 1970 that Gelman had expanded its use beyond that allowed in the original application and

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that there were "traces of glycol" in its discharge.

Gelman acknowledged that in an internal Gelman memorandum that in October of 1970 indicating that Gelman could not definitely, safely continue to drain pond 2 at the rate of 4,000 to 5,000 gallons per day as the waste might reach someone's well and any overflow would be in violation of the WRC order 816.

The WRC permit No. MOO337 superseded the Order of Determination 816 authorizing Gelman to discharge its treated waste waters to the groundwaters of the state in accordance with the conditions specified herein:

"MICHIGAN WATER RESOURCES COMMISSION

PERMIT TO DISCHARGE

In compliance with the provisions of the Michigan Water Resources Commission Act, as amended, (Act 245, Public Acts of 1929, as amended, the "Michigan Act),

GELMAN INSTRUMENT COMPANY
600 South Wagner Road
Ann Arbor, Michigan 48106

is authorized to discharge from a facility located at

600 South Wagner Road
Ann Arbor, Michigan 48106
Washtenaw County

to the ground waters in accordance with effluent limitations monitoring requirements and other conditions set forth in Parts I, II and III hereof.

This permit shall become effective on the date of issuance.

This permit and the authorization to discharge shall expire at midnight, April 30, 1982. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Michigan Water Resources Commission no later than 180 days prior to the date of expiration.

This permit is based on the company's application dated

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November 5, 1976, and shall supersede any and all Orders of Determination, Stipulation, or Final Orders of Determination previously adopted by the Michigan Water Resources Commission.

Issued this Twenty-seventh day of May, 1977, for the Michigan Water Resources Commission.

s/ Robert J. Courchaine
Robert J. Courchaine
Executive Secretary"

(See attached for complete Permit No. M 00337)

The permit in paragraph (a) clearly allowed Gelman to pump at 44,000 gallons per day on average with a daily maximum of 112,700 gallons per day disposed of by spray irrigation in such a manner that they will not injuriously affect the public health or welfare, or commercial, industrial, domestic, agricultural, recreational or other uses of the underground waters or surface waters of the state. This permit was issued after the DNR was notified of the overflow with possible traces of glycol.

Again, no one knew that 1,4-dioxane was a possible contaminant. It was not listed on the critical materials register in 1976 when the application was applied for.

It is clear that the overwhelming source of 1,4-dioxane contamination of the aquifers came from seepage by the ponds, specifically pond 2 and by spray irrigation. There were other minor sources.

Aside from the major elements of contamination there is evidence of some other contaminations. One is a 1980 overflow. There was evidence testified to by a DNR conservation officer, Robert McHolme, who testified that in

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1980 he observed and photographed a pump located at pond 2 with one hose extending from the pump to a small quantity of liquid standing in the bottom of the pond and a second hose extending from the pump along the bank of the pond toward the fence located along the northern edge of pond 2. He observed that the hose from the pump had a little bit of liquid in it in which the snow had melted. Mr. McHolme gave his report to the DNR. One Sue Morton evidently made a report. For some unknown reason, the DNR, after reviewing his complaint in 1980, did nothing. He was told by his superiors that there was a permit to discharge water in 1980. It is very interesting that this evidence was presented to the Court when the DNR did not consider it to be worth anything in 1980. The DNR after receiving McHolme's whole report never contacted Gelman. The DNR evidently felt that Gelman was in compliance with its order.

There is further testimony regarding a burn pit that was utilized from 1966 to November of 1979. It was Gelman's regular business practice to dispose of scrap polymer and solvent waste used to clean manufacturing equipment by dumping it untreated into an open burn pit dug in the ground behind the Gelman plant building. Scrap and solvent waste generated in the manufacture of cellulose triacetate membranes during that period contained 1,4-dioxane. There were high concentrations of 1,4-dioxane in the burn pit.

Part of the testimony of James Marshall was that the pit had a clay bottom. Five-gallon buckets of scrap polymer were

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taken to the pit and burned. In response to an inspection and request by the DNR, Gelman ceased using the burn pit and excavated materials from the burn pit in 1979. The soil from the burn pit was actually excavated and taken in to Wayne County to the Wayne County Waste Disposal Center.

There is further testimony that the lift station developed a crack and that there was leakage. That as soon as Gelman discovered the crack in the lift station this knowledge was disclosed to the DNR. However, testimony of Dr. Chalmer indicated very slow seepage from the lift station. Further, Gelman actually informed the DNR within 15 to 20 minutes after discovery of the crack that there was this leakage.

The DNR further claims that a lawn mower ran over and cut a hose used to transport the waste to pond 3 back to the plant to the deep well injection. Gelman immediately informed the DNR of this incident. The amount of water spilled from the cut line was approximately 18,000 gallons. The total amount of 1,4-dioxane eventually discharged from the cut was 4.8 ounces of 1,4-dioxane. This was testimony of Dr. Paul Chalmer, April 18, 1990.

Gelman has attempted to purge water taken from the wells on the Redskin property immediately north of Gelman's property. Testimony of Dr. Chalmer was that they took over 3800 pounds of 1,4-dioxane out of the aquifer. The most that could possibly have been put into the groundwater from the cut hose was 4.8 ounces of 1,4-dioxane.

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There is no evidence of any amount of seepage in the McHolme incident. As to the crack in the lift station, the only evidence is that this leak was a very small amount and certainly the amount taken out by Gelman was more than adequate to account for any amount to this area. In the burn pit, the soil was excavated from the burn pit and taken to another area. The Court finds that the total amount of 1,4-dioxane that could possibly have seeped into the ground waters was, at most, a few pounds. Gelman has extracted 3,800 pounds already. Therefore, these claims by the DNR are insignificant.

Thus, we are back to the same two major areas of contamination: that is, the seepage and overflow from pond 2 and the spray irrigation.

CONTAMINATION

Both of the experts who have testified, Mr. Minning and Mr. Hayes, indicate that there is substantial contamination of the ground waters by the chemical 1,4-dioxane. Mr. Hayes believes there are at least three aquifers present, the shallow, intermediate and the deep. He believes that all three are contaminated and the contamination of all three originated at the Gelman site. He believes that the contamination that has occurred has occurred because of hydraulic communication between the aquifers. His only question is whether or not there is communication between the deepest aquifer to the west. Mr. Minning's testimony was similar. He also believes that the aquifers are

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contaminated.

The highest concentrations of 1,4-dioxane have been found in the Redskin well located just north of the Gelman facility. The Redskin well is located in the C3 or intermediate aquifer. Contamination of the ground water with 1,4-dioxane in excess of 3.4 parts per million have been found only in the core area of contamination near the Redskin well. Ground water contaminated with low concentration of 1,4-dioxane has been found west of the Gelman facility extending out towards Park Road and east of the Gelman facility in the Westover Subdivision. Soil borings of the spray irrigation field and other site locations have shown the presence of 1,4-dioxane.

Both sides believe that the Third Sister Lake is contaminated by the intermediate aquifer and that there is a plume of 1,4-dioxane to the west and its extent can be defined. However, Mr. Minning believes that the extent to the north and the east is more difficult to define as it may have entered the 3 subzero aquifer which is in his determination the deepest aquifer.

CARCINOGENISTIC ATTRIBUTES

The evidence indicates that 1,4-dioxane causes cancer in animals, that is, it has caused liver cancer and nasal tumors in rats. Dr. Venman testified on May 9, 1990, that 1,4-dioxane is a possible human carcinogen. The United States Environmental Protection Agency and the International Agency for Research on Cancer have concluded that there is

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sufficient evidence that 1,4-dioxane causes cancer in animal studies and have classified it as a probable human carcinogen. The biological mechanism by which 1,4-dioxane causes cancer is not yet known. The DNR has presented evidence that it should be treated as a non-threshold carcinogen, that is, that there is no established threshold level of exposure whereby there would be no increase in the risk of cancer.

The preponderance of the scientific evidence establishes that 1,4-dioxane acts as a promoter and not as an initiator of cancer. A carcinogen is classified as an initiator if it is capable of itself initiating the mutation of genetic material. A carcinogen is a promoter if it takes an existing change in genetic material and causes it to develop into a tumor or carcinogenic end point. There is evidence that 1,4-dioxane does cause cancer in livers and carcinogenetic nasal tumors in rats. This Court could easily infer and does infer that a tame rat is not much different than a wild rat or muskrat. Therefore, this Court does find that there is evidence in that 1,4-dioxane could cause injury to wild animals.

The DNR believes that there is not enough scientific information available concerning an acceptable level of 1,4-dioxane.

Dr. Hartung in his report indicated that the preponderance of scientific evidence establishes that concentrations of 1,4-dioxane below the level established in

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his report of 3.4 parts per million do not present a significant health threat to humans (Defendant's exhibit 11, page 101.)

The DNR has presented no evidence on this record suggesting that the 1,4-dioxane concentration found in local surface waters has any adverse effect upon fish, wildlife or other biological material.

REMEDIATION

In 1987 Gelman reorganized technical work-group meetings in order to have discussions and information sharing regarding site conditions, investigation and remediation of the contamination. Representatives of the DNR, the Michigan Department of Public Health and the Washtenaw County Health Department were invited to attend and did attend. At the meetings available data, studies and information were exchanged. At the meetings representatives of the state worked with Gelman to design further investigation and approaches to the expansion of the hydrogeologic study. DNR representatives would not discuss remediation proposals at the site at the technical work meetings. In 1987 Gelman submitted to the DNR a preliminary clean-up program in which they proposed to purge ground water from the most contaminated area, the Redskin Industries, and inject the purged water into a deep well. The DNR refused to accept any remediation. Gelman proceeded on its own to purge ground water from the Redskin well. The purge well operated from July of 1987 to November of 1987, whereupon a change in

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regulatory status of the deep well prohibited further use. During that period of time approximately 3,800 pounds of 1,4-dioxane was removed.

In 1987 Gelman submitted a plan to remediate the soil to the DNR. For the initial phases of the program Gelman requested the state to provide a person to attend the meetings to help in the remediation, but the DNR did not send any representative. Defendant's exhibit 7, a deposition exhibit, indicates that at one meeting a DNR agent was at the meeting and was instructed to neither approve nor disapprove the remediation.

Defendant's exhibit 8 was a clean-up proposal. Dr. Chalmer wrote most of it himself. He wanted to purge the most highly concentrated areas with monitoring wells which are called sentinels along the outer area. This would show how and where the 1,4-dioxane was migrating and if it was going in a particular direction. Then they could purge in that area. Further, they could use concentrated purges where the problem was most acute. This document was submitted to the DNR. Dr.Chalmer wanted to start immediately before getting to the other questions as this would stop further dispersal at the most highly concentrated sites. The DNR would not accept the proposal of Dr. Chalmer. However, Dr. Chalmer did attempt to carry out his work regardless of whether it was going to be approved. He sought and obtained permission from Redskin Industries to do this purging. The water from Redskin was to be piped to Gelman with a number of

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fail-safe devices and the water was routed to injection wells. The purged water was injected into deep wells. The 1,4-dioxane concentration was 220 parts per million and in November 1987, after treatment, it was down to 60 parts per million. This continued until federal regulations prevented Gelman from continuing.

Dr. Chalmer further believed that most of the 1,4-dioxane in the bog was still on the surface and had not gotten very far into the bog and it could be cleaned out as soon as they cleaned the bog.

The DNR believed that neither the Water Resources Commission nor the DNR had the most complete knowledge of the chemical constituents and that they should therefore do nothing nor allow anything to be done to stem the flow. As Gelman represented the constituents as being not toxic, noxious or deleterious solvents, the DNR believed that Gelman should be held accountable.

WRC and the DNR were required by the Michigan Constitution and the Michigan Water Resources Commission Act to ensure that Gelman permitted discharges would not become injurious to the public health. The DNR employees should not have issued a permit or order of determination without making such a determination. These permits allowed the contamination of our aquifers.

CONCLUSION OF LAW

STANDARDS FOR INVOLUNTARY DISMISSAL

Gelman has moved this Court for involuntary dismissal of

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the Plaintiff's complaint. Alternatively, Gelman has asked the Court to dismiss those portions of the complaint which the Plaintiff has failed to show a right to relief. The Michigan Court Rule 2.504(b)(2) provides as follows:

> "In an action tried without a jury, after the presentation of the plaintiff's evidence, the defendant without waiving the right to offer evidence if the motion is not granted may move for dismissal on the grounds that on the facts and the law the plaintiff has not shown the right to relief. The court may then determine the facts and render judgment against the plaintiff or may decline to render judgment until close of all the evidence. If the court renders judgment on the merits against the plaintiff the court shall make the findings provided in MCR 2.517. In a ruling on this motion the court may waive the evidence, pass on the credibility of the witnesses and select between conflicting inferences and make other factual determinations".

WATER RESOURCES COMMISSION ACT

A. Elements of Action Under the WRCA.

Plaintiffs allege that Gelman had violated Section 6(a) and Section 7 of the Water Resources Commission Act, MCLA Sec. 323.6, 323.7 ("WRCA) (Complaint Paragraphs 61-71) In order to establish a violation of Section 6(a), Plaintiffs must demonstrate that:

1. Gelman directly or indirectly discharged
2. into the waters of the state,
3. a substance or substances which is or may become:
    a. Injurious to the public health, safety or welfare; or
    b. Injurious to domestic, commercial, industrial, agricultural, recreational, or other uses which are being or may be made of such waters; or
    c. Injurious to the value or utility of riparian lands; or

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d. Injurious to livestock, wild animals, birds, fish, aquatic life, or plants or the growth or propagation thereof be prevented or injuriously affected or whereby the value of fish and game is or may be destroyed or impaired.

See MCLA Sec. 323.6(a). In order to prove a violation of Section 7 of the WRCA, Plaintiffs must prove that Gelman:

1. discharged waste or waste effluent,
2. into the waters of the state,
3. without a valid permit therefor from the WRC.

See MCLA Sec. 323.7.

The evidence adduced during Plaintiffs' case shows that Defendant has been in substantial compliance with the permits issued to it. Further, the relevant regulatory agencies were informed of the nature of Gelman's process wastewater and, in particular, that 1,4-dioxane (ethylene glycol ethers) was being discharged. The permits issued by the WRC and the DNR authorized and instructed Gelman to discharge directly to the groundwaters.

A permit or Order of Determination issued pursuant to Section 7 of the WRCA provides a complete defense to claims that permitted discharges violated Sections 6(a) or 7. To find otherwise would mean that the WRC and the DNR could issue permits for discharges that violate the statute. Further, to hold otherwise would mean that a permit or Order of Determination does not, in actuality, provide any protection to a permittee for discharges in compliance with a permit.

The WRC and the DNR were required by the Michigan

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Constitution and the WRCA to insure that Gelman's permitted discharges would not become injurious to the public health. The DNR employees could not issue a permit or Order of Determination pursuant to Sec. 7 of the WRCA without first making such a determination. Plaintiffs now seek to foist upon Gelman the responsibility for protecting the public welfare based on the following general prohibition contained in the permits issued to Gelman:

> No waste water resulting from filter and instrument manufacturing process shall be discharged directly or indirectly into the surface waters of the state, but the same shall be disposed of <u>into the ground</u> in such a manner and by means of such facilities and at such location that they shall not injuriously affect public health or commercial, industrial and domestic water supply use.

(Plaintiffs' Exhibit No. 71) (Order of Determination No. 816) The attempt by Plaintiffs to impose liability on Gelman based on the inclusion of such "boilerplate" language in the permits issued to Gelman is based upon the assertion that as Gelman had the most complete knowledge of the chemical constituents they were discharging, they should be held liable. This action is an attempt by the DNR and the WRC to absolve themselves of their duty to protect the environment and the public health. Having authorized Defendant's discharges, Plaintiffs cannot now impose liability on Gelman. Any threat to the public health would be the result of the failure of the WRC and the DNR to accurately evaluate the effects of the discharges they authorized. The WRC and/or the DNR are supposed to have people that know, study and test

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these things. It certainly is an illogical conclusion to say that Gelman should be held responsible because they had more knowledge. If that is followed to its logical conclusion that would mean that in every instance, we are leaving the polluters in charge of determining whether or not they are polluting. That clearly is the "fox in the hen house" theory of control.

There can be no dispute that Order of Determination No. 816 expressly authorized Gelman to discharge its process wastewater containing ethylene glycol ethers directly to the ground. 1,4-dioxane is an ethylene glycol ether. In November, 1969, Pond 2 was deepened to enhance seepage of the wastewater to the ground, at the suggestion of the DNR. This authorized seepage from Pond 2 caused the most substantial amount of the off-site contamination.

A discharge that was permitted and in compliance with the WRCA when made is not converted to a violation of the WRCA by the subsequent discovery of groundwater contamination.

Notwithstanding that Gelman disclosed in its application that the water to be irrigated could contain organic solvents, the spray irrigation permit did not contain any specific discharge limitations for 1,4-dioxane, or any other organic solvents.

Plaintiffs contend that the spray irrigation permit did not authorize the discharge of 1,4-dioxane. The only evidence on record establishes that the DNR and/or WRC knew

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that Gelman's process water could contain 1,4-dioxane going back to 1965. Plaintiffs did not offer a single witness who was familiar with the permit issued to Gelman and who could testify as to what it did, or did not, authorize. Similarly, Plaintiffs have presented no evidence or testimony establishing any spray permit violations by Gelman.

Plaintiffs have failed to demonstrate that the discharge of 1,4-dioxane through spray irrigation by Gelman violated the WRCA.

Defendant claims that alleged violations of Gelman's permits are barred by the applicable statute of limitations (either two years under MCLA Sec. 660.5809 for civil penalties or three years under MCLA Sec. 600.5805(8)) Specifically, Defendant claims that Plaintiffs' allegations under the WRCA regarding alleged violations of the Order of Determination are untimely. The Order of Determination was terminated in 1977 by issuance of the spray irrigation permit by the DNR. The spray irrigation permit expressly superseded the Order of Determination. The evidence shows that discharge pursuant to the Order terminated well beyond the applicable limitations period.

With respect to spray irrigation, the uncontroverted evidence introduced during presentation of Plaintiffs' case establishes that Gelman stopped spray irrigation in Fall, 1984. At that time, Plaintiffs knew that the irrigated wastewater contained 1,4-dioxane. Yet Plaintiffs failed to bring this action until December, 1988, more than four years

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later. Accordingly, any claim that Gelman violated its spray irrigation permit is time-barred.

However, as there is evidence of unauthorized overflows from Pond 2 to the marshy area, beyond the permit, the Court will decline to enter judgment against Plaintiffs on this issue. Claims based on continuing harm are not barred by the applicable limitation period. Defnet v. City of Detroit, 327 Mich 254 (1950); Moore v. Pontiac, 143 Mich App 610 (1985). Judgment is rendered against Plaintiffs on all other issues.

MICHIGAN ENVIRONMENTAL PROTECTION ACT

Plaintiffs have brought a claim under MEPA seeking "equitable relief to protect the water and other natural resources, or the public trust therein."

A. Elements of the MEPA Action.

In order to sustain a claim under MEPA, Plaintiffs must make out a prima facie case. The elements to a prima facie case under MEPA are:

1. that air, water, or other natural resources are involved;

2. that Defendant's conduct is involved;

3. that such conduct has, or is likely to, pollute, impair, or destroy the natural resource involved.

MCLA Sec. 691.1203(1).

Consistent with a constitutional mandate, MEPA imposes a duty upon the government and the citizens of this State to prevent the pollution, impairment, or destruction of the natural resources of this State. MCLA Sec. 691.1202. From and after October 1, 1980, the effective date of MEPA,

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in issuing wastewater discharge permits to Gelman, the State was required to make a determination that the proposed discharges would meet the mandates of the WRCA, the Constitution and MEPA. Having made such a finding, Plaintiffs now cannot challenge collaterally their own determination.

The proofs establish that the great majority of groundwater contamination was caused by Gelman's compliance with its wastewater discharge permits. Plaintiffs cannot seek to hold Gelman responsible for complying with permits issued by Plaintiffs, especially where, as here, Plaintiffs made the determination that issuance of said permits was consistent with protection of human health and the environment. However, in paragraph 76 of the Complaint, Plaintiffs state that:

> "Gelman's unauthorized release of wastewater into the ground and into a neighboring wetland violates MEPA Sec. 3(1), MCL 691.1203; MSA 14.528(203), in that its conduct has and is likely to pollute, impair, or destroy water or other natural resources, or the trust therein." (Emphasis added)

The Plaintiffs have shown that there were unauthorized releases of wastewater in a neighboring wetland. The Court, therefore, declines to render judgment on this issue, as 1,4-dioxane continues to leak and migrate from their unauthorized discharge, Hodgeson v. Drain Commissioner, 52 Mich App 411 (1974); Defnet v. City of Detroit, supra; Moore v. Pontiac, supra. However, judgment is rendered against Plaintiffs upon all other issues.

MICHIGAN ENVIRONMENTAL RESPONSE ACT

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In Count III, Plaintiffs sought to recover $474,000.00 incurred under MEPA ("Act 307") for provision of bottled water, extension of the municipal water system, and other response activities. By Opinion and Order dated October 15, 1989, this Court granted Gelman's Motion for Partial Summary Disposition related to this Count of the Complaint. This Court determined that Gelman could not be responsible for any funds expended by State agencies when the DNR had ignored its legal duty to promulgate administrative rules necessary to carry out Act 307. This Court concluded:

> As the Department of Natural Resources has had since 1982 the obligation to promulgate rules necessary to carryout the requirements of MERA; and as they did not do it, Gelman cannot be held liable for any evaluation costs or response activity related to the site for which Gelman is responsible.

(Opinion and Order, p. 4) Plaintiffs cannot recover those costs incurred under Act 307 as alleged in the Complaint.

In response to Gelman's Motion in Limine, Plaintiffs have suggested that the costs may be recovered under alternative theories (i.e., Sec. 10 of the WRCA and public nuisance). At the hearing on November 22, 1989, this Court indicated that Plaintiffs may only obtain relief that has been specifically identified in the Complaint (If, of course, Plaintiffs carry their burden of proof).

Plaintiffs have not introduced any evidence regarding the amount allegedly expended at the Gelman site. There is not enough evidence on the record to even deduce the scope of activities of State agencies. Plaintiffs may be able to

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recover some costs under MERA for the unauthorized discharge, however. The Court, therefore, refuses to enter judgment on this issue, but does on all other issues. Claims based on continuing harm are not barred by the statute of limitations. Hodgeson v. Genesee County Drain Commissioner, supra; Defnet v. City of Detroit, supra.

COMMON LAW PUBLIC NUISANCE

A. Elements of Claim for Public Nuisance.

To establish their claim regarding public nuisance, Plaintiffs must demonstrate that Defendant's discharges have unreasonably interfered with the public's use and enjoyment of its land. In the context of this case, Plaintiffs must establish that the alleged contamination poses a threat to the public health. Garfield Township v. Young, 348 Mich 337 (1957); McDonell v. Brozo, 285 Mich 39 (1938).

Toxicological studies and expert testimony regarding 1,4-dioxane demonstrate that, except for the "core" area, the levels of 1,4-dioxane found in the aquifers do not pose any threat to the public health and thus do not constitute a public nuisance. See Section II.B., supra. With respect to 1,4-dioxane found in the "core" area, no nuisance exists because there is no evidence that these waters are being used as a drinking water source or for any other purposes.

It is well established that the State cannot prosecute as a public nuisance activities which it has authorized. Rohan v. Detroit Racing Association, 314 Mich 326 (1946); Grand Rapids & I.R. Company v. Heisel, 39 Mich 62 (1878);

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Chope v. Detroit and H. Plank Road Company, 37 Mich 195 (1877). As set forth above, Defendant's discharges which allegedly carried the groundwater contamination have, for the most part, been explicitly authorized by the WRC and the DNR pursuant to discharge permits.

However, again, this Court refuses to enter judgment against Plaintiffs because of the aforesaid unauthorized discharge, but does as to all other issues.

Therefore, the Court hereby dismisses all claims against Gelman under the WRCA, MEPA, MERA and for nuisance, except for those relating to the unpermitted discharge of processed wastewater in the late 1960s.

The Court may determine the percentage of cost of all the remediation attributable to Gelman, if such be necessary after the close of proofs. The WRCA does not contain a complete list of specific remedies that a trial court may order, Attorney General v Biewer, 140 Mich App 1 (1985). However, this Court will fashion a remedy

Regarding the DNR request for preliminary injunction, Bratton v DAIIE, 120 Mich App 73 (1982) sets forth the standards for reviewing the grant of a preliminary injunction:

> "The grant or denial of a preliminary injunction is within the sound discretion of the trial court. Grand Rapids v. Central Land Co., 294 Mich 103, 112; 292 NW 579 (1940); Michigan Consolidated Gas Co. v. Public Service Comm, 99 Mich App 470, 478; 297 NW2d 874 (1980). The object of a preliminary injunction is to preserve the status quo, so that upon the final hearing the rights of the parties may be determined without injury to either. Gates v. Detroit & M R Co. 151 Mich 548, 551; 115 NW 420 (1908). The status

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quo which will be preserved by a preliminary injunction is the last actual, peaceable, noncontested status which preceded the pending controversy. Steggles v. National Discount Corp, 326 Mich 44,51; 39 NW2d 237 (1949); Van Buren School Dist v. Wayne Circuit Judge, 61 Mich App 6, 20; 232 NW2d 278 (1975). The injunction should not be issued if the party seeking it fails to show that it will suffer irreparable injury if the injunction is not issued. Niedzialek v. Barbers Union, 331 Mich 296, 300; 49 NW2d 273 (1951); Van Buren School Dist, supra, 16. Furthermore, a preliminary injunction will not be issued if it will grant one of the parties all the relief requested prior to a hearing on the merits. Epworth Assembly v. Ludington & N R Co. 223 Mich 589, 596; 194 NW 562 (1923). Finally, a preliminary injunction should not be issued where the party seeking it has an adequate remedy at law. Van Buren School Dist. supra, p 16." See also Council 25, AFSCME v. Wayne County, 136 Mich App 21, 25-26; 355 NW2d 624 (1984).

Gelman is the only party that has done anything to halt the plume of 1,4-dioxane. Of its own volition, without any assistance from the DNR, Gelman has made substantial efforts to remove the 1,4-dioxane from the aquifers. The DNR has done nothing, They have been at meetings wherein Gelman has tried to formulate a successful plan to halt and eliminate the plume of 1,4-dioxane. Yet, the DNR has done nothing. They, incredibly enough, would not allow their agents to either approve or disapprove any formulation of any plan to dissipate the plume. The DNR has, in fact, hindered Gelman from removing the contaminated 1,4-dioxane from the aquifers. As the DNR has done nothing to halt the onward movement of the plume of 1,4-dioxane and as they have permitted the contaminants to enter into the soil, the Court will not issue a preliminary injunction.

As the State is primarily at fault, the Court believes that the State would be much better off submitting a plan to

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eliminate 1,4-dioxane from the aquifers to this Court rather than continuing extensive litigation. The people of Washtenaw County are not being well served by prolonged litigation while the plumes of 1,4-dioxane continue to expand to the west and north.

The Motion for Preliminary Injunction is denied.

Patrick J. Conlin (P12126)
Circuit Judge

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EXHIBIT

4

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RELEASE OF CLAIMS AND SETTLEMENT AGREEMENT

This Release of Claims and Settlement Agreement ("Settlement Agreement" or "Agreement") is made and entered into this ___ day of ______________, 2006, between the City of Ann Arbor ("City"), a Michigan municipal corporation, with offices at 100 N. Fifth Ave, Ann Arbor, Michigan, 48104, and Gelman Sciences, Inc., a Michigan Corporation, d/b/a Pall Life Sciences ("PLS"), with offices at 600 South Wagner Road, Ann Arbor, Michigan, 48103.

I. GENERAL PROVISIONS

A. Proceedings. The City and PLS (collectively, the "Parties") acknowledge that this Settlement Agreement is a compromise of claims made in the following proceedings:

1. *City of Ann Arbor v. Gelman Sciences, Inc. d/b/a Pall Life Sciences,* Case No. 04-513-CF (Washtenaw Cty. Cir. Ct.) ("State Lawsuit");

2. *City of Ann Arbor v. Gelman Sciences, Inc. d/b/a Pall Life Sciences,* Case No. 05-73100 (U.S. Dist. Ct., E.D. Mich.) ("Federal Lawsuit"); and

3. *In Re Point Source Pollution Control National Pollution Discharge Elimination System (NPDES) Petition of the City of Ann Arbor on Permit NPDES No. MI 0048453 (Pall Life Sciences)* ("Contested Case").

B. Compromise of Claims. The Parties recognize that this Settlement Agreement is a compromise of disputed claims and defenses. By entering into this Settlement Agreement, neither Party admits any fault or liability under any statutory or common law, and does not waive any rights, claims, or defenses with respect to any person except as otherwise provided herein. By entering into this Settlement Agreement, neither Party admits the validity or factual basis of any of the positions or defenses asserted by the other Party. The Settlement Agreement and the compromises reflected therein shall have

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no *res judicata* effect and shall not be admissible as evidence in any other proceeding, except in a proceeding between the Parties seeking enforcement of this Agreement.

C. Parties Bound. This Settlement Agreement applies to and is binding upon and inures to the benefit of the City, PLS, and their successors and assigns. This Settlement Agreement shall be binding upon the successors and assigns, if any, of PLS to its obligations and rights under the Consent Judgment entered into in *Attorney General v. Gelman Sciences,* Case No. 88-34734-CE (Washtenaw Cty. Cir. Ct.) (as modified by subsequent orders of the court) (the "Consent Judgment").

II. DEFINITIONS

The following terms, when capitalized in this Agreement, shall have the meanings specified in this Section II.

A. 1,4-Dioxane means the 1,4-dioxane present in surface water and the groundwater aquifers in the vicinity of the PLS Property, including the Unit E Aquifer, but this term as it is used in this Agreement shall not include any 1,4-dioxane that PLS establishes by a preponderance of the evidence to have originated from a release for which PLS is not legally responsible. For purposes of this Agreement only, "1,4-Dioxane" includes the 1,4-dioxane currently identified in the Unit E Aquifer, including but not limited to that which currently is below 85 ppb in concentration, which is located either (a) in the Prohibition Zone; or (b) at and in the vicinity of the Northwest Supply Well. PLS acknowledges that, as of the date of this Agreement, it is not aware of another source of the currently known 1,4-dioxane. Accordingly, the Parties agree that any 1,4-dioxane found in and near the Prohibition Zone or in and near the vicinity of the Northwest Supply Well shall be presumed to be within the above definition unless PLS can make

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the proof stated above to the contrary. This definition shall not have any evidentiary effect in any future dispute or litigation between PLS and any person or entity other than the City.

B. Bromate means the bromate present in the surface water and the groundwater aquifers in the vicinity of the PLS Property, including the unnamed tributary to Honey Creek, which is the location of Outfall 001 under the NPDES Permit (the "Honey Creek Tributary"), Honey Creek and Unit E Aquifer, but this term as it is used in this Agreement shall not include any bromate that is established by PLS to have originated from a release or discharge for which PLS is not legally responsible.

C. City Property means property, buildings and facilities owned by the City.

D. Claims means any claim, allegation, demand, order, directive, action, suit, cause of action, counterclaim, cross-claim, third-party action, or arbitration or mediation demand, whether at law or in equity, and whether sounding in tort, equity, nuisance, trespass, negligence, strict liability or any other statutory, regulatory, administrative, or common law cause of action of any sort, asserted and unasserted, known and unknown, anticipated and unanticipated, past, present, and future of any nature whatsoever, including, without limitation, any and all claims for injunctive relief, declaratory relief, contribution, indemnification, reimbursement, Response Costs, Response Activity Costs, loss in the value of property, statutory relief, damages, expenses, penalties, costs, liens, or attorney fees.

E. Effective Date: The Effective Date of this Agreement shall be the latest date of the entry of the orders of dismissal specified in Section III. This Agreement shall be effective only if all of the orders of dismissal specified in Section III are entered.

F. Escalator Factor shall be calculated by as follows:

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$$\frac{\text{Escalator Index (Month of Trigger) - Escalator Index (November 2006)}}{\text{Escalator Index (November 2006)}}$$

The percentage change from the November 2006 Index to the Index for the month during which the Contingent Payment is triggered under Section VI.B will be calculated to the second decimal place.

G. Escalator Amount shall be computed by multiplying the Escalator Factor by the Contingent Payment.

H. Escalator Index shall be the Engineering News Record Construction Cost Index, available at the www.enr.com web site. In the event the Escalator Index is no longer published by McGraw Hill or its successor, the Parties agree to establish an alternative method of determining the Escalator Amount based on a currently published and generally accepted construction cost index.

I. Federal Maximum Contaminant Level means the maximum contaminant level established by the Environmental Protection Agency under the Federal Safe Drinking Water Act. 42 U.S.C. 300f, et seq.

J. GCGI means the generic residential criterion for groundwater based on ingestion of groundwater developed by the MDEQ for 1,4-dioxane under Part 201 of the Michigan Natural Resources and Environmental Protection Act ("NREPA") MCL 324.20101 *et seq.*, and Mich. Admin. Code R. 299.710, as such criteria may be amended, adjusted or replaced.

K. Hazardous Substances has the same definition as that term in Section 20101(1) of NREPA, MCL 324.20101(1).

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L. HCT Water Treatment System means the system used by PLS to treat water collected by the PLS remediation systems and to discharge that water to the Honey Creek Tributary at Outfall 001, as described in the NPDES Permit.

M. Major Reports means those reports that PLS is required to submit under the Consent Judgment or a MDEQ-approved work plan that address response activities affecting properties within the City or City Property, and any other final reports that PLS in good faith determines would be of significant interest to the City.

N. MDEQ means the State of Michigan Department of Environmental Quality, and its successor state agencies.

O. NPDES Permit means, unless specified otherwise, National Pollutant Discharge Elimination System Permit No. MI 0048453, as amended, renewed, or replaced, that authorizes PLS' discharge of treated water and effluent limits for such discharge.

P. Northwest Supply Well means the City's municipal water supply wells located on Montgomery Street in the City of Ann Arbor.

Q. Northwest Supply Wellfield means the municipal well field associated with the Northwest Supply Well.

R. Prohibition Zone means the area within which groundwater use is restricted pursuant to the Prohibition Zone Order, the boundaries of which are as depicted on the attached Figure 3, including a proposed expansion of the Prohibition Zone boundary that, as of the date of this Agreement, has not been approved by the MDEQ. The Prohibition Zone as that term is used in this Agreement shall include the proposed expansion as approved by the MDEQ. Upon MDEQ approval of the expansion, the document attached as Figure 3 and identified as "PROPOSED EXPANSION 4/18/06" will be replaced with a new Figure 3 showing the

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expansion as approved by the MDEQ. The Prohibition Zone, as that term is used in this Agreement, shall not include any further expansion of the Prohibition Zone beyond the boundaries depicted on Figure 3.

S. Prohibition Zone Order means the May 17, 2005 Order Prohibiting Groundwater Use entered in *Attorney General, et al. v. Gelman Sciences, Inc.* Case No. 88-34734-CE (Washtenaw Cty. Cir. Ct.).

T. PLS Property means the PLS facility located at 600 S. Wagner Road, Ann Arbor, Michigan.

U. PLS Remediation means the response activities PLS is required to undertake by the Consent Judgment, associated court orders and MDEQ-approved workplans.

V. Response Activity Costs has the same meaning as the definition of that term in Section 20101(1)(ff) of NREPA, MCL 324.20101(1)(ff).

W. Response Costs has the same meaning as the definition of that term in 42 U.S.C. 9607(a).

X. State Maximum Contaminant Level means the maximum contaminant level established by the State under Michigan's Safe Drinking Water Act, MCL 325.1001, *et seq*.

Y. Trigger Level, as of the date of this Agreement, means the current GCGI for 1,4-dioxane of 85 parts per billion ("ppb"). If a new GCGI value is promulgated by the MDEQ, that value will become the Trigger Level from the time of promulgation forward, unless the new GCGI value is based on the development by the State of Michigan of a State Maximum Contaminant Level for 1,4-dioxane that is not a Federal Maximum Contaminant Level developed by USEPA. If, however, a Federal Maximum Containment Level is developed for 1,4-dioxane, a change in the GCGI value based on

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that Federal Maximum Containment Level will become the new Trigger Level upon promulgation of the revised GCGI value by the MDEQ.

Z. Unit E Aquifer means the groundwater aquifer that is the subject of the Unit E Order.

AA. Unit E Order means the December 17, 2004 Order and Opinion Regarding Remediation of the Contamination of the "Unit E" Aquifer in *Attorney General, et al. v. Gelman Sciences, Inc.,* Case No. 88-34734-CE (Washtenaw Cty. Cir. Ct.), as may be amended.

BB. USEPA means the United States Environmental Protection Agency.

CC. Verified Monitoring Results shall be the results of the laboratory analysis of groundwater samples obtained from the Series A and Series B Wells described in Section VI, below, following completion of the Quality Assurance/Quality Control ("QA/QC") and verification procedures described in Appendix A.

DD. Well Information Database means the information PLS maintains with groundwater monitoring well information and outfall water quality information, including the following: well identification information (address, X and Y coordinates, top of casing and ground elevations, well and screen depths, survey information), dates of sampling, and sampling results.

III. SETTLEMENT PAYMENT AND DISMISSAL OF PROCEEDINGS.

A. Settlement Payment By PLS. Within Twenty-one (21) days after the Effective Date of this Agreement, PLS shall pay to the City the sum of Two Hundred Eighty Five Thousand Dollars ($285,000). The payment shall be made by check or draft payable to "The City of Ann Arbor" and be sent by overnight delivery to: Stephen K. Postema, City Attorney, 100 N. Fifth Avenue, Ann Arbor, Michigan 48104.

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B. Dismissal of Proceedings. Upon execution of this Agreement, the City shall promptly dismiss with prejudice all Claims in the State Lawsuit, the Federal Lawsuit, and the Contested Case, with each Party to bear its own costs. Each Party shall, at its own expense, take whatever steps are necessary on its behalf to effectuate such dismissals.

IV. RELEASE OF CLAIMS AND RESERVATION OF RIGHTS

A. City Release. Except as provided in Paragraph IV.B, below, the City hereby irrevocably and unconditionally forever releases, discharges, and covenants not to sue, proceed against, or seek contribution from PLS, and any of its predecessors, successors, assigns, parents, subsidiaries, affiliates, officers, directors, employees, attorneys, agents, and/or representatives (the "Released Parties") and shall forever relinquish, remise, discharge, waive, and release any and all Claims that it may now or in the future have against the Released Parties in connection with the Covered Matters. Covered Matters are defined as:

1. All Claims arising directly or indirectly from Hazardous Substances in soil, groundwater, and surface water at or emanating, released, or discharged from the PLS Property (collectively "Contamination"), including, without limitation, all Claims that were or could have been asserted in the State Lawsuit, the Federal Lawsuit and/or the Contested Case.
2. All Claims, past, present and future, for civil fines, penalties and costs.
3. All Claims and rights under the Administrative Procedures Act to petition, challenge or contest any future NPDES permit issued to PLS that authorizes the discharge to the Honey Creek Tributary from PLS' groundwater treatment system(s).

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B. Exceptions and Reservation of Rights. Notwithstanding Paragraph IV.A, above, the City reserves, and this Agreement is without prejudice to, its right to petition, challenge, sue, proceed against or otherwise seek reimbursement, contribution, indemnification and/or other remedy from PLS, with respect to:

1. Enforcement of this Agreement.

2. Any future necessary Response Activity Costs or Response Costs to address a new plume of Contamination or Contamination in a previously uncontaminated aquifer that is discovered after the date of this Agreement that could not have been brought in the State Lawsuit or Federal Lawsuit ("New Contamination"). This exception to the general release set forth in Paragraph IV.A shall not apply to:

   a. The future migration of Contamination within the Prohibition Zone;

   b. Contamination present in the groundwater at levels below the then applicable GCGI or State or Federal Maximum Contaminant Level, if any, that is associated with the plumes of Contamination known to exist as of the date of this Agreement ("Known Plumes") or;

   c. Contamination present at the Northwest Supply Wellfield or the property on which the Northwest Supply Well is located.

3. Claims that arise from the unforeseen change in the migration pathway of a Known Plume that: (a) Results in the presence of 1,4-Dioxane at levels above the then applicable GCGI or State or Federal Maximum Contaminant Level at locations where such concentrations are not present as of the date of this Agreement; and (b) causes a City Property to be considered a "facility" as defined under Part 201. This exception to the general release set forth in Paragraph IV.A shall not apply to any Claims associated with:

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a. The migration of Contamination within the Prohibition Zone; or

b. The Northwest Supply Wellfield or the property on which the Northwest Supply Well is located.

4. The presence of Contamination at the Steere Farm Wellfield.

5. Necessary Response Costs and/or Response Activity Costs to extent the City may recover such costs under 42 U.S.C. 9607a and/or MCL 324.20126a that arise from the continued presence of 1,4-Dioxane at levels above the GCGI within the Prohibition Zone and one or more of the following:

a. Soil and/or water sampling and analysis from areas within the Prohibition Zone, to determine if 1,4-Dioxane is present in wells, excavations, and similar locations where groundwater is present or evident;

b. Dewatering costs and disposal costs, including permit costs, for soil and groundwater removed from the Prohibition Zone that is contaminated with 1,4-Dioxane if permits are required for such dewatering or disposal;

c. Worker training and use of protective gear;

d. Increased costs of contracting in areas affected by 1,4-Dioxane (e.g., need to use 40-hour OSHA hazardous substance/waste trained personnel rather than standard contractors; increased time for completion of projects and the like); and

e. The City's due care obligations under MCL 324.20107a and 42 U.S.C. 9607(q)(1)(A)(iii).

This exception to the general release set forth in Paragraph IV.A shall not apply to any Claims associated with the Northwest Supply Wellfield or the Northwest Supply Well itself.

6. The issuance of any future NPDES Permit or renewal of PLS' current NPDES Permit that authorizes PLS' discharge of treated groundwater to the Honey Creek Tributary, but only to the extent that a future proposed NPDES Permit/renewal:

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a. Contains a new effluent limitation for a compound that is less restrictive than the effluent limitation in the current NPDES Permit;

b. Contains an effluent limitation for a compound that is not subject to an effluent limitation in the current NPDES Permit;

c. Allows the discharge of compounds that are not present in PLS' current effluent; or

d. Authorizes PLS to discharge a greater volume of treated water to the Honey Creek Tributary than the current NPDES Permit.

Unchanged portions of any future NPDES Permit shall not be subject to petition, challenge or contest.

7. The City's rights, if any, to take action to require the MDEQ to enforce violations of the NPDES Permit.

V. HONEY CREEK RESPONSE ACTIONS REGARDING BROMATE

A. Monitoring. Except as otherwise provided in this Agreement, monitoring for Bromate shall be accomplished at a single location. Sampling procedures and methods shall be as follows:

1. *Monitoring Location and Frequency:* PLS will sample surface water for Bromate on a daily basis, Monday through Friday, at the confluence of Honey Creek and the Huron River (hereinafter, "HC/HR"), as generally depicted in the diagram attached as Figure 1. The City may, at its discretion, collect samples on Saturday and Sunday of each week and is responsible for retaining any such samples. Except as provided below, PLS will only be responsible for analyzing one of the City's weekend samples (Saturday or Sunday) per month on the Monday following collection if and when the City collects such samples. PLS will also analyze the City's weekend samples if equipment malfunction or other

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circumstance causing an "upset" condition occurs or is discovered on a Friday or Monday.

2. *Sampling Method and Transmission of Results*: Surface water will be collected as a grab sample. Samples will be collected between 7:00 a.m. and 10:00 a.m. or as soon as weather permits. For any samples PLS is required to obtain under this Section, the PLS analytical laboratory will analyze and report the results on the same day (for Monday through Friday samples) by email to the City's Environmental Coordinator and to the City's Water Quality Manager. Bromate analyses at PLS shall be conducted using USEPA Method 317 (or an equivalent, USEPA approved, method). The method detection limit (MDL) for Bromate using this method is currently 2 ppb, which constitutes the MDL that will be used with reference to determining action under this section. A lower MDL may be substituted for the agreed MDL if future changes in laboratory capabilities using acceptable methods allow.

3. *Split Sampling:* The City: (1) may split samples with PLS at any time, with 24 hours notice to PLS; (2) may collect samples at any time independent of the PLS sampling schedule; and (3) may utilize the PLS analytical laboratory as a backup laboratory for analyzing the City's split samples at a reasonable charge not to exceed PLS' costs.

B. Action Plan. If an analysis of a sample by PLS or the City indicates that the concentrations of Bromate at the HC/HR exceed 2 ppb, PLS will take the following actions:

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1. PLS will perform a quality control and quality assurance review to determine if the monitoring result was due to an analytical or reporting error.

2. PLS will review the performance of its HCT Water Treatment System to determine if that system is operating properly, and, if it determines the functioning of the HCT Treatment System to be a possible cause of the monitoring result, PLS will make such adjustments as it deems necessary and collect an effluent sample shortly after those adjustments to determine system performance after such adjustments.

3. Within thirty-six (36) hours after completing the actions in subparagraphs 1 and 2, PLS will collect another surface water sample at HC/HR ("Confirming Sample"). PLS will collect another surface water sample at HC/HR on any Saturday following a Friday with a monitoring result in excess of 2 ppb. The City may collect a split sample of the Confirming Sample. If the Confirming Sample shows that Bromate at HC/HR is no longer present at concentrations in excess of 2 ppb, then monitoring shall resume as provided in this Section and no further action is necessary.

4. If the Confirming Sample shows the presence of Bromate in excess of 2 ppb, PLS will take actions as soon as practicable to reduce Bromate levels at HC/HR below 2 ppb. The initial actions may include, but are not limited to, the following:

   a. PLS may alter the flow composition into the HCT Water Treatment System so as to reduce the Bromate levels, but maintain the total flow of water treated and discharged by the system.

   b. PLS may reduce the total flow at the point of discharge to the Honey Creek Tributary (Outfall 001 in NPDES Permit MI 00 48453).

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5. If the steps outlined in the previous subsections are not sufficient to reduce concentrations of Bromate to 2 ppb at the HC/HR within a reasonable time, PLS will take additional actions to achieve this reduction. Such actions may include, but are not limited to, the following:

   a. PLS may replace the current HCT Water Treatment System technology (ozone and hydrogen peroxide) with a combination of ultraviolet light (UV) and ozone technologies or other technology.

   b. PLS may install a pipeline to deliver treated water to a point along the Huron River downstream from the City's water intake.

C. Unavailability of PLS' Laboratory. In the event PLS' laboratory is no longer available, the Parties agree to negotiate in good faith to make appropriate adjustments, if any, to the laboratory turn around times set forth in this Section V. All commercially reasonable efforts will be made by PLS to identify and use a laboratory that will meet the turn around times set forth in this Section V.

D. Termination of Honey Creek Monitoring. PLS' obligations under this Section V shall terminate once PLS is no longer discharging treated groundwater to the Honey Creek Tributary or any other surface water body connected to Honey Creek or the Huron River or if PLS' HCT Water Treatment System is changed to a system that does not produce or otherwise cause Bromate to be present in the discharge.

VI. NORTHWEST SUPPLY WELL RESPONSE ACTIVITIES

A. Groundwater Monitoring Plan. PLS will undertake the following groundwater monitoring:

1. *Series A Well Location.* Within 90 days of the Effective Date of this Agreement, PLS will install a nested well configuration at the approximate location identified on the map attached hereto as Figure 2 (the "Series A Wells").

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2. *Monitoring of Series A Wells*. PLS shall sample the Series A Wells for 1,4-Dioxane quarterly until termination using the procedures set forth in Appendix A.

3. *Series B Wells*. If the Verified Monitoring Result obtained from any Series A Well exceeds one-half (1/2) of the Trigger Level, PLS will install a nested well configuration at each of the locations described below within 90 days of obtaining access (the "Series B Wells"). One location will be in the general vicinity of Bemidji as shown on the map attached as Figure 2. The second well location will be determined by the Parties at the time the Verified Monitoring Result obtained from any Series A Well exceeds one-half (1/2) of the Trigger Level.

4. *Monitoring of Series B Wells*. PLS shall sample the Series B Wells for 1,4-Dioxane quarterly until termination as provided in Paragraph VI.A.6 using the procedures set forth in Appendix A.

5. *Well Installation*. Wells required under this Section VI are to be installed by PLS and shall follow the well construction procedures described in Appendix A.

6. *Termination.* PLS' obligations under this Section VI will continue until such time as the earliest of the following occurs:

   a. The MDEQ (or other regulatory body with oversight of the PLS Remediation) no longer requires groundwater monitoring in the Unit E Aquifer upgradient of the Northwest Supply Well;

   b. The Northwest Supply Wellfield is rendered unsuitable for drinking because of reasons other than the presence of 1,4-Dioxane;

   c. The Northwest Supply Well fails or becomes unusable and cannot legally be replaced for reasons other than the presence of 1,4-Dioxane; or

   d. By mutual agreement of the Parties.

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B. Contingent Payment.

1. *Trigger of Contingent Payment.* In the event the Verified Monitoring Results indicate that the average concentration of 1,4-Dioxane in the nested wells at either Series B Well location exceeds the Trigger Level, then PLS shall make the payments described in Paragraphs VI.B.2 and 3. PLS' obligation to make such payments shall not be affected or reduced by the presence of 1,4-dioxane other than "1,4-Dioxane" (as defined in this Agreement) if the Trigger Level would have been exceeded even absent the presence of such 1,4-dioxane.

2. *Contingent Payment.* In the event the Contingent Payment is triggered, as described in Paragraph VI.B.1, PLS shall pay the City the sum of Four Million Dollars ($4,000,000) (the "Contingent Payment") within Sixty (60) days of receipt of the Verified Monitoring Results. The payment shall be made by check or draft payable to "The City of Ann Arbor" and be sent by overnight delivery to: Stephen K. Postema (or his successor), City Attorney, 100 N. Fifth Avenue, Ann Arbor, Michigan 48104.

3. *Escalator Payment.* In the event the Contingent Payment is triggered, as described in Paragraph VI.B.1, PLS shall, in addition to the Contingent Payment, pay the City the Escalator Payment within Sixty (60) days of the date the Escalator Index for the month during which the Contingent Payment is triggered becomes publicly available.

C. Additional Provisions

1. *Operation of Northwest Supply Wellfield.* The City shall only operate the Northwest Supply Wellfield in a manner that benefits the City's public water

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supply system. The City shall not operate the Northwest Supply Well or install and operate a new well in the Northwest Supply Wellfield for the purpose of moving the plume of 1,4-Dioxane toward the Northwest Supply Well.

2. *Response Activities*. PLS may undertake additional response activities in the vicinity of the Northwest Supply Well to provide additional assurance that concentrations of 1,4-Dioxane in the monitoring wells do not reach the Trigger Level. If these additional response activities entail installation of infrastructure within the City, the City will cooperate with such activities in a manner consistent with Section IX of this Agreement.

VII. ADDITIONAL RESPONSE ACTIVITIES

A. PLS Performance of Future Laboratory Analyses.

1. *Analysis of City Samples*. PLS at its sole cost will perform laboratory analyses for 1,4-Dioxane, and provide the results of same and related laboratory QA/QC documentation to the City, with regard to samples the City obtains from the City's source waters. PLS' obligation to analyze such samples shall be limited to samples taken at the following frequencies and from the following locations:

   a. Quarterly groundwater samples from either the Northwest Supply Well or from the existing monitoring well located at the Northwest Supply Wellfield.

   b. Monthly groundwater samples from the transmission main from the Steere Farm Wellfield. If 1,4-dioxane is detected in a monthly sample from the transmission main, PLS will analyze monthly groundwater samples obtained by the City from the individual Steere Farm production wells.

   c. Monthly surface water samples from the Huron River and from Barton Pond.

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2. *Split Sampling*. PLS agrees that, for quality control and quality assurance (QA/QC) purposes, on occasion the City may obtain duplicate (split) samples of water from the same sources or locations noted in Paragraph VII.A.1, above, and will cause those duplicate samples to be analyzed by a separate, independent laboratory. PLS will reimburse the City the amounts it pays in the future to obtain such independent laboratory analyses, provided that the number of such split samples is not greater than that reasonably required for appropriate QA/QC purposes.

3. *City Staff Time*. The City shall be responsible for obtaining the water samples from the locations described in Paragraph VII.A, above, and for following all appropriate sampling protocols and procedures. Except for Claims reserved in Section IV, above, PLS will not be required to reimburse the City for costs of obtaining such samples, including City staff time.

4. In the event PLS' laboratory is not available, PLS will be responsible for the cost of obtaining the laboratory analyses described in this Section VII.

VIII. TRANSPARENCY

A. <u>Well Information Database</u>. Within 30 days after the Effective Date, PLS shall transmit to the City its current Well Information Database as of the date of transmittal. This information shall be provided electronically in one or more Excel® files. Data to be provided in the Well Information Database will include at a minimum: the well or other sample location information (X and Y coordinates, top of casing and ground elevations, well and screen depths, address, etc.); sampling results for 1,4-Dioxane and/or Bromate; and other water quality data from the analysis. Submittals from PLS may also include

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other fields of data mutually agreed upon by the City and PLS. Thereafter, no later than the 20th day of the first full month following the initial submittal, and continuing monthly thereafter, PLS will provide to the City an update to the Well Information Database ("Update") in Excel® format. Each Update shall include dates and sample results for the previous month and any new well information developed and entered into the Well Information Database by PLS after the last submittal.

B. Major Reports. PLS will provide the City with copies of final versions of Major Reports submitted to the MDEQ at the same time and in the same format they are submitted to the MDEQ, provided that the City can request any Major Report, or portion thereof, in electronic form, and PLS will then provide the requested material in electronic form when reasonable. PLS shall also provide copies of additional reports reasonably requested by the City. PLS shall also provide copies of requests by PLS to the MDEQ for permit modifications and copies of reports showing trend analysis of 1,4-Dioxane or Bromate concentrations in surface or groundwater. If any of the foregoing reports or documents is in paper format, the City may request that the report or document or portion(s) thereof be provided electronically, and PLS will cooperate to the extent practicable. Except as explicitly modified above, PLS will continue to provide to the City all data and reports that it is otherwise required to provide and/or which it already is providing to the City. The data and reports addressed in this Section VIII are in addition to or are modifications of those data and reports.

C. Use of Information and Data. The City may manipulate data and information provided under this Section in any manner it chooses and understands. The City may release the data and any reports the City creates, in either paper or electronic format, provided,

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however, that any such document or electronic file shall clearly state on its face that it has been created by the City. The City will provide PLS with copies of all reports that are released or that are subject to release to the public. The City shall not release any of the reports or data provided by PLS pursuant to this Section VIII in the form provided by PLS in either paper or electronic format except in response to a Freedom of Information Act ("FOIA") request. The City shall not publish any of the reports or data PLS provides to the City on the Internet in the form provided by PLS. PLS is responsible for marking each document that PLS asserts is protected by copyright.

D. Data Gaps. The City may review the Well Information Database and Updates and identify any perceived data gaps to PLS. After the City identifies such a gap, PLS will fill in the field(s) with information, if it is available, with the next Update. PLS will identify those gaps for which there is no information. To the extent practical, within 90 days after the City identifies a data gap to PLS, PLS will complete the dataset(s) or document why data are incomplete. The Parties acknowledge that the PLS Remediation has been ongoing for many years, and, in some cases, information regarding wells may not have been collected or may be missing or lost.

E. Provision of Reports from the City to PLS. The City will provide PLS with any final reports that the City in good faith determines would be of significant interest to PLS. The City shall also provide copies of additional reports reasonably requested by PLS. If any of the foregoing reports is in paper format, PLS may request that the report or portion(s) thereof be provided electronically, and the City will cooperate to the extent practical.

F. Disputes. Any issue arising under this Section which cannot be resolved quickly at a staff level shall be referred to the Coordination Committee for discussion and resolution.

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IX. COOPERATION AND COORDINATION

A. Access. The City shall provide access to City Property and rights of way to facilitate the installation of monitoring wells PLS is required to install under MDEQ-approved work plans at appropriate locations and pursuant to mutually acceptable license agreements. The City shall process PLS' access requests in an expeditious manner. The City has the right to discuss the proposed location with PLS and to recommend an alternate location(s) for the well prior to submittal of sites to the MDEQ. PLS will submit to the City an application for a license for a monitoring well at that location, subject to approval by the MDEQ. PLS will endeavor to provide both the City and property owners on the same and intersecting street(s) within 200 feet of the well location with a minimum of seventy-two (72) hours notice prior to the installation date for any such well(s).

B. Master Bond. PLS will provide a "Master Bond" in the form attached hereto as Appendix B. The Master Bond will satisfy the surety bonding requirements of all current license agreements between the City and PLS for existing monitoring wells on City Property or rights of way and up to an additional ten (10) monitoring wells that may be installed by PLS on City Property or rights of way in the future.

C. Communication.

1. *Communications from PLS*. PLS will use reasonable efforts to inform the City contemporaneous with the MDEQ of any unexpected findings regarding conditions on City Property and property within the City limits, conditions both inside or outside City boundaries that may or do affect property within the City limits, City-owned facilities or City-provided services, and any other findings PLS in good faith deems to be of significant concern to the City. PLS will copy

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the City (if in writing) on any communications with the MDEQ and will use reasonable efforts to inform the City of other communications from PLS regarding the foregoing. To the extent possible, Mr. Fotouhi will contact Ms. McCormick and/or Mr. Naud by telephone, facsimile, or email to communicate the relevant information.

PLS will copy the City (if in writing) on any communications with the MDEQ and will use reasonable efforts to inform the City of other communications from PLS regarding the promulgation of a maximum contaminant level ("MCL") for 1,4-dioxane. To the extent possible, Mr. Fotouhi will contact Ms. McCormick and/or Mr. Naud by telephone, facsimile, or email to communicate the relevant information.

2. *Communications from the City*. The City will copy PLS (if in writing) on any communications with the MDEQ and will use reasonable efforts to inform PLS of other communications from the City regarding City comments on PLS' cleanup efforts or regarding the promulgation of a maximum contaminant level ("MCL") for 1,4-Dioxane. To the extent possible, Mr. Naud and/or Ms. McCormick will contact Mr. Fotouhi by telephone, facsimile, or email to communicate the relevant information.

D. Meetings.

1. *City Council Meetings*. In the event that City Council intends to consider an issue that the City in good faith deems to be a significant concern to PLS, the City will use reasonable efforts to provide PLS with advance notice and the opportunity to make a written or oral presentation to City Council. To the extent possible, Mr.

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Naud or Ms. McCormick will contact Mr. Fotouhi by telephone, facsimile, or email to communicate the relevant information.

2. *Public Meetings*. In the event the City intends to hold or co-sponsor a public meeting related to PLS, the City will provide PLS with advance notice and the opportunity to participate in the meeting. PLS will use reasonable efforts to participate in any such public meeting. The City agrees that its participation in any such meeting shall be consistent with its agreement to cooperate with PLS' implementation of the Unit E Order and all MDEQ-approved plans entered under the Unit E Order.

3. *Intergovernmental or Citizen/Governmental Coalitions and Organizations*. In the event the City participates in any intergovernmental coalitions or citizen/governmental coalitions or organizations regarding the PLS Remediation, the City's participation shall be consistent with its agreement to cooperate with PLS' implementation of the Unit E Order and all MDEQ-approved plans entered under that Order. The City will use reasonable efforts to have a PLS representative included in any such coalition or organization. The City will copy PLS (if in writing) on any communications to such groups and will use reasonable efforts to inform PLS of other communications that the City in good faith determines would be of interest to PLS.

4. *Quarterly/Semiannual Meetings of Coordination Committee*. The City and PLS shall meet on a regular basis to discuss issues of interest to the City and/or to PLS related to the PLS Remediation. Issues of interest to the City and/or to PLS are issues related to conditions on City Property, to conditions on property within the

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City limits, and to conditions both within and outside the City boundaries that may or do affect City-owned facilities or City-provided services and any other topics mutually agreed upon by the Parties. The meetings will take place quarterly for the first two years, followed by semiannual meetings thereafter, unless a different schedule is mutually agreed upon by the Parties. The participants shall be Mr. Fotouhi, Mr. Naud, and Ms. McCormick. Ms. Bartlett will participate in such meetings by telephone. Members of City Council also may participate. This group shall be referred to as the Coordination Committee. At least one week prior to each meeting, Mr. Naud and/or Ms. McCormick will notify Mr. Fotouhi of any questions or topics they wish Mr. Fotouhi to answer or address at the meeting, and Ms. Bartlett and/or Mr. Fotouhi will notify Mr. Naud and Ms. McCormick of any questions or topics they wish Mr. Naud and/or Ms. McCormick to answer or address at the meeting.

E. Use of City Utilities. The City shall evaluate any application by PLS to use the City sanitary sewer system in accordance with the provisions of Chapter 28 of the Ann Arbor City Code. PLS understands that sanitary sewer services may be extended to a property outside the City under only certain, limited circumstances, that a service connection to the sanitary sewer within the City may only be made by agreement with the owner of the property that is serviced, and that Chapter 28 requires users of the sanitary sewer system to comply with specified pretreatment standards. If PLS requires use of the City's sanitary or storm water sewer systems in the future as a short-term method of disposing of purged groundwater, the City will consider such requests on a case-by-case basis in accordance with the provisions of Chapters 28 and 33 of the Ann Arbor City Code.

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F. City Resolution. To the extent it is inconsistent, City Council Resolution No. R-583-12-96, entitled Resolution Regarding the Immediate Cleanup of Gelman Sciences' Groundwater Contamination, is superseded by the provisions of this Agreement.

G. Cooperation with Implementation of Unit E Order. The City shall cooperate with PLS' implementation of the Unit E Order and all MDEQ-approved plans entered under the Unit E Order. The City's cooperation shall include, but is not limited to, maintaining the Prohibition Zone Order and the attached map that depicts the Prohibition Zone established by the Prohibition Zone Order, as amended, in the same manner as the City already has done pursuant to the Prohibition Zone Order.

H. *Successor Responsibilities*. All references to specific persons in this Section IX also include the individual's successor in the event he or she leaves the employ of the respective Party.

X. FORCE MAJEURE

A. Force Majeure. Any delay attributable to a Force Majeure shall not be deemed a violation of a Party's obligations under this Agreement. "Force Majeure" is defined as an occurrence or nonoccurrence arising from causes beyond the control of a Party or of any entity controlled by the Party. Such occurrence or nonoccurrence includes, but is not limited to: (1) an Act of God; (2) acts or omissions of third parties for which the Party is not responsible; (3) insolvency of any vendor, contractor, or subcontractor retained by a Party as part of implementation of this Agreement; and (4) delay in obtaining necessary access agreements that could not have been avoided or overcome by due diligence. "Force Majeure" does not include unanticipated or increased costs or changed financial circumstances.

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B. When circumstances occur that a Party believes constitute Force Majeure, the Party shall notify the other Party by telephone, facsimile, or email of the circumstances within 48 hours after the Party first believes those circumstances to apply. Within 14 working days after the Party first believes those circumstances to apply, the Party shall supply to the other Party, in writing, an explanation of the cause(s) of any actual or expected delay, the anticipated duration of the delay, the measures taken and the measures to be taken by the Party to avoid, minimize, or overcome the delay, and the timetable for implementation of such measures.

XI. TERMINATION OF AGREEMENT

The Parties' obligations under this Agreement shall terminate upon PLS' receipt of the Certificate of Completion from the MDEQ confirming that PLS has completed satisfactorily all requirements of the Consent Judgment, as provided in Section XXV of the Consent Judgment, or after the MDEQ determines that 1,4-Dioxane within the Prohibition Zone does not exceed the applicable GCGI, whichever is later. Notwithstanding the foregoing, Section IV shall survive the termination of this Agreement.

XII. MISCELLANEOUS

A. Severability. The provisions of this Agreement shall be severable. Should any provision be declared by a court of competent jurisdiction to be inconsistent with federal or state law, and therefore unenforceable, the remaining provisions of this Agreement shall remain in full force and effect.

B. Warranties. The Parties each represent and warrant that:

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1. The execution and delivery of this Agreement has been duly and validly authorized and approved by all requisite action required under applicable law and that no further action is necessary to make this Agreement valid and binding.

2. Each is fully authorized to enter into this Agreement and is duly organized and validly existing in good standing under the laws of one of the states of the United States of America.

3. Each has taken all necessary governmental, corporate and internal legal actions to duly approve the making and performance of this Agreement and that no further corporate or other internal approval is necessary.

4. The making and performance of this Agreement will not, to the knowledge of either of the Parties, violate any provision of law or of their respective articles of incorporation, charter or by-laws.

5. Knowledgeable officials, officers, employees and/or agents of each Party have read this entire Agreement and know the contents hereof and that the terms of the Agreement are contractual and not merely recitals. Each Party has authorized this Agreement to be signed of its own free act, and, in making this Agreement, each has obtained the advice of legal counsel.

C. Signatories. Each person executing this Agreement warrants that he or she has the authority and power to execute this Agreement from the Party on whose behalf he or she is executing.

D. Change of Circumstances. Each Party to this Agreement acknowledges that it may hereafter discover facts in addition to or different from those which it now knows or believes to be true with respect to the subject matter of this Agreement. The Parties each expressly accept

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and assume the risk of such possible difference in facts and agree that this Agreement shall be and remain effective notwithstanding such difference in facts.

E. No Rights to Non-Parties. Except as expressly provided herein, this Agreement is intended to confer rights and benefits only upon the City and PLS, and is not intended to confer any right or benefit upon any other person or entity. Except as expressly provided herein, no person or entity other than PLS and the City shall have any legally enforceable right under this Agreement.

F. Arms-Length Negotiations. This Agreement is the product of arms-length negotiation, and the language in all parts of this Agreement shall be construed as a whole according to its meaning, and not strictly for or against any Party. The Parties hereto agree that this Agreement shall not be construed according to any special rules of construction applicable to contracts of adhesion and/or insurance contracts.

G. Modification. This Agreement may not be modified in whole or in part except by written agreement signed by the City and PLS.

H. Headings. The headings used in this Agreement are for convenience only and shall not be used to construe the provisions of this Agreement.

I. Cooperation. The City and PLS shall execute promptly any and all voluntary dismissals, stipulations, supplemental agreements, releases, affidavits, waivers and other documents of any nature or kind which the other Party may reasonably require in order to implement the provisions or objectives of this Agreement.

J. No Representations. The Parties represent and agree that in executing this Agreement they do not rely and have not relied upon any representation or statement made by any other Party or by any other person or entity released herein with regard to the subject

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matter, basis, or effect of this Agreement, or otherwise, which is not specifically set forth herein.

K. Entire Agreement. This Agreement represents the entire understanding of the City and PLS, and this Agreement shall supersede and control any and all prior communications, correspondence, and memorialization of agreement or prior communication between the City and PLS or their representatives relative to the matters contained herein.

L. Counterpart Signatures. This Agreement may be executed in multiple counterparts, each of which, when so executed and delivered, shall be an original, but such counterparts shall together constitute one and the same instrument and agreement.

M. Governing Law. This Agreement shall in all respects be interpreted, enforced, and governed under the law of the State of Michigan and the law of the United States without regard to Michigan's conflict of laws principles.

N. No Waiver. The failure of any of the Parties to exercise any power given such Party hereunder or to insist upon strict compliance by any Party with its obligations under this Agreement, and no custom or practice of the Parties at variance with the terms of this Agreement shall constitute a waiver of the Parties' right to demand exact compliance with the terms hereof.

O. Enforcement. The Parties agree that the Washtenaw County Circuit Court and the United States District Court for the Eastern District of Michigan each may retain jurisdiction to enforce the terms of this Agreement as appropriate.

****SIGNATURE PAGE FOLLOWS****

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IN WITNESS WHEREOF, the Parties have executed this Agreement, consisting of Thirty (30) pages plus Appendices A and B and Figures 1 – 3, by their duly authorized representatives as set forth below.

City of Ann Arbor

____
By: John Hieftje,
Its: Mayor

____
By: Jacqueline Beaudry,
Its: City Clerk

____
Roger W. Fraser,
City Administrator

____
Sue F. McCormick, Public Services Administrator

____
Stephen K. Postema,
City Attorney
Counsel for the City of Ann Arbor

____
Fredrick J. Dindoffer,
Bodman, LLP
Counsel for the City of Ann Arbor

Gelman Sciences, Inc., d/b/a Pall Life Sciences

____
By: Mary Ann Bartlett
Its: Secretary and Director

____
Michael L. Caldwell,
Zausmer, Kaufman, August & Caldwell, PC
Counsel for Gelman Sciences, Inc. d/b/a Pall Life Sciences

____
Alan D. Wasserman,
Williams, Acosta, PLLC
Counsel for Gelman Sciences, Inc. d/b/a Pall Life Sciences

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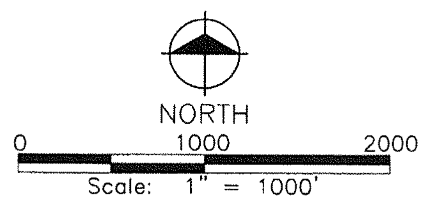

SERIES A

SERIES B

MONTGOMERY WELL

PROPOSED MONITORING LOCATIONS

LEGEND

- MONITOR WELL
- RESIDENTIAL WELL
- PURGE WELL
- HYDROGEOLOGIC TEST BORING
- UV/OX. TREATMENT SYSTEM
- TEMPORARY PURGE WELL
- SURFACE WATER ELEVATION POINT
- UNIT E 1,4-DIOXANE ISOCONCENTRATION CONTOUR (ug/L) - APRIL - SEPTEMBER 2006
- PROHIBITION ZONE BOUNDARY

MONTGOMERY WELL AREA PROPOSED MONITORING LOCATIONS

ftc&h 50 years

engineers
scientists
architects
constructors

Pall Life Sciences
Scio Twp., Washtenaw County, Michigan

PROJECT NO.
F96502

PLOT INFO: F:\WORK\96502\DWG\CONTOUR MAPS NEW BASE 2002.DWG DATE: 11/16/2006 TIME: 8:58:40 AM USER: ACS

©Copyright 2006 All Rights Reserved

fishbeck, thompson, carr & huber, inc.

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Gelman Sciences Inc. Prohibition Zone Boundary

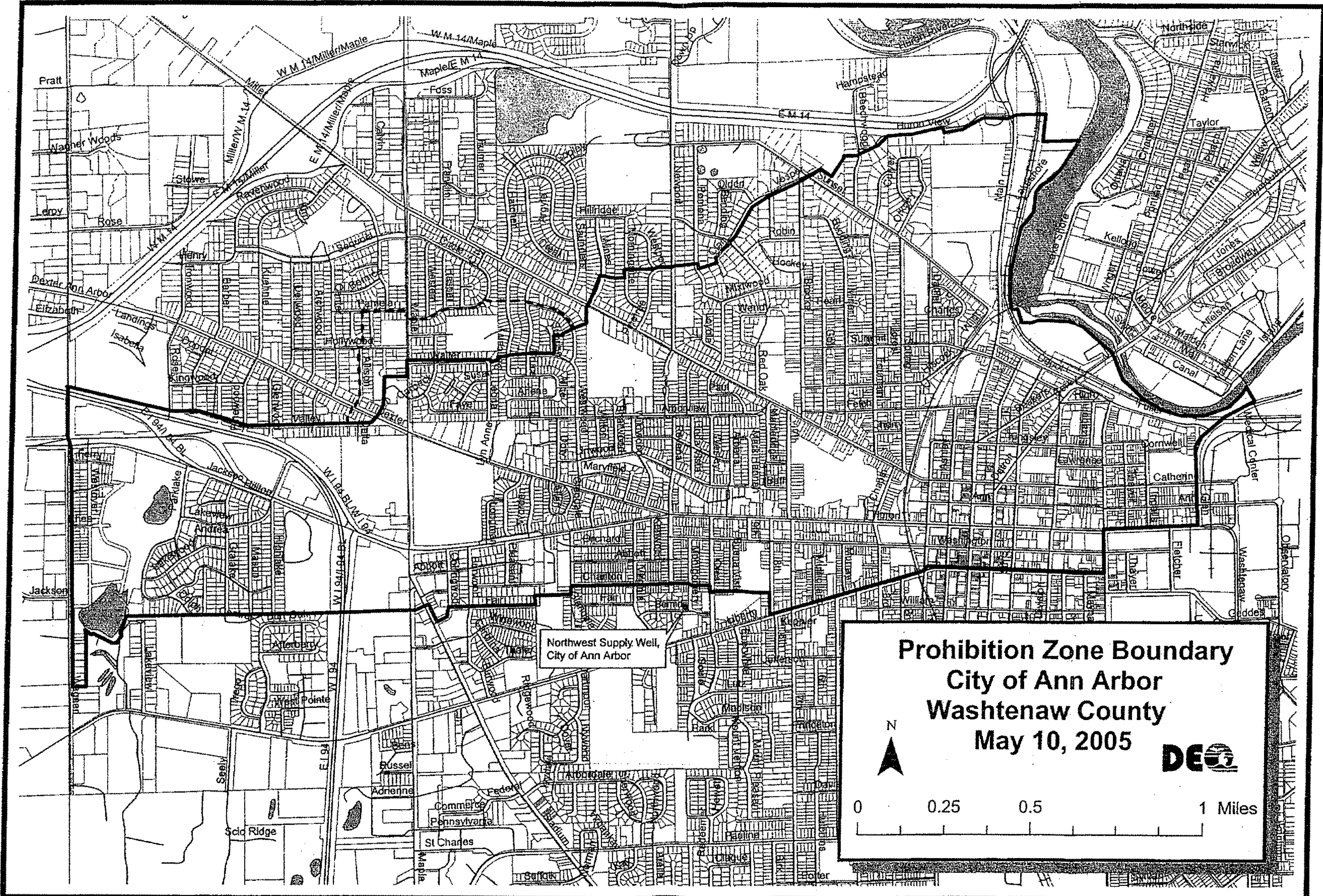

FIGURE 1
PROPOSED EXPANSION
4/18/06

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APPENDIX A

NORTHWEST SUPPLY WELL GROUNDWATER MONITORING PROTOCOL

WELL INSTALLATION METHODS

Test boring(s) will be drilled at each monitoring well nest location using the hollow-stem auger method. The proposed sampling methods are split-spoon and Simulprobe for collection of soil and soil/groundwater samples, respectively. Split-spoon sampling will be performed at a frequency of 10 feet, starting at approximately 10 feet below ground surface and continuing to the bedrock surface. In water-bearing units, Simulprobe sampling will be performed at a maximum frequency of every 10 feet. The groundwater samples will be delivered to PLS for analysis of 1,4-dioxane.

Upon reaching the bedrock surface, the boring will be logged using geophysical methods (gamma logging). The data gathered from the geophysical log, as well as the groundwater analytical data, and the soil sampling will be analyzed for ideal placement of the monitoring well screens. It is anticipated that each monitoring well nest will consist of three monitoring wells (to monitor multiple portions of the aquifer). One well screen will be positioned at a depth corresponding to the highest detected concentration of 1,4-dioxane encountered during vertical aquifer sampling. The screen intervals of the other wells will be based on a review of water chemistry and geological data obtained from the test boring. The screen depths will be selected consistent with PLS' past MDEQ-approved well installation practices and will be designed to detect the possible migration of contamination toward the Northwest Supply Wellfield. At least one well screen will be completed in the deposits best correlated to those associated with the deposits the Northwest Supply Wells screens are completed in.

Each monitoring well will consist of a 2-inch-inside-diameter galvanized well casing, equipped with a 5-foot-long stainless-steel screen. A sand pack will be placed around the screen annulus, and the well casing annulus will be sealed with a bentonite grout (pumped into the well casing annulus through tremie pipe). The wells will be developed to hydraulically couple the screens with the subsurface formation. Soil cuttings, derived from the drilling, and development water will be transported to PLS.

PLS will survey the x and y coordinates and the top-of-casing and ground elevations for the wells. The top-of-casing and ground elevations for the new wells were referenced to NAVD88 and x, y coordinates were referenced to Michigan State Plane Coordinate System, Michigan South (NAD83).

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GROUNDWATER SAMPLING

Sample Collection Methods and Analytical

PLS will use 3-5 casing volume groundwater sampling method consistent with the technique it uses for all other routine groundwater sampling. In the future, should studies show there are other more representative sampling methods for 1,4-dioxane, the City or PLS may mutually consider such methods for the monitoring wells installed as part of this monitoring plan.

All samples will be analyzed by PLS for 1,4-dioxane using USEPA Method 1624 (or another equivalent, USEPA-approved method). The Target Detection Limit (TDL) for the analysis will be 1 ug/L, which is the TDL established by MDEQ (RRD Operational Memo 2, October 22, 2004). If MDEQ establishes a new TDL for 1,4-dioxane, PLS will adopt the new TDL. PLS will follow all appropriate sampling and laboratory QA/QC procedures, which may be reviewed by the City upon request along with related documentation.

Sample Collection Frequency

PLS will collect samples from monitoring wells within two weeks after installation, then once every quarter thereafter, until it is mutually determined by PLS and the City that such monitoring is no longer necessary, or as provided in Section XI of the Settlement Agreement. Should it be confirmed that the "Trigger Level" is exceeded at one of the monitoring wells installed under Section VI of the Settlement Agreement, an alternative sampling frequency agreed to by PLS and the City may be considered.

The City can split samples with PLS at any time ("City Split Sample"). The City will promptly provide the results of such sampling to PLS and will, upon request, cause its laboratory to allow PLS to review related QA/QC documentation. PLS will not be responsible for the costs incurred by the City in connection with such split sampling, except as set forth in the Settlement Agreement.

Verification Procedures

A. Monitoring Results. Upon confirmation that all sampling and laboratory QA/QC procedures were followed, monitoring results that PLS obtains from the Series A and Series B Well shall be considered Verified Monitoring Results under the Settlement Agreement, except as provided in Paragraphs B and C, below.

B. Elevated Monitoring Result. If a sample result from an individual well at one or more of the monitoring locations is 10 times higher than the highest previous monitoring result from that well (the "Elevated Monitoring Result"), the result will not be considered a Verified Monitoring Result under the Settlement Agreement. In such an event, the following verification procedures will be followed to ensure that the monitoring result from the well at issue is representative of aquifer conditions:

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1. QA/QC. PLS will confirm that proper laboratory and sampling QA/QC procedures were followed and that any equipment used was properly calibrated to the manufacturer's standard.
2. Duplicate Sample. PLS will analyze the duplicate sample, if available, to assist in the evaluation of PLS' QA/QC procedures and equipment calibration.
3. Resampling of Well. PLS will resample the monitoring well from which the Elevated Monitoring Result was obtained within five days of the date the Elevated Monitoring Result was obtained and analyze the sample following all proper laboratory and sampling QA/QC and equipment calibration procedures (the "Verification Sample Result").

Upon confirmation that all proper laboratory and sampling QA/QC procedures were followed and that the equipment was calibrated, the Verification Sample Result shall be considered a Verified Monitoring Result under the Settlement Agreement.

C. Split Sample Discrepancy. In the event that the monitoring result obtained from a City Split Sample differs from the corresponding PLS result, neither result shall be considered a Verified Monitoring Result under the Settlement Agreement unless otherwise agreed (e.g. if the difference is insignificant). In the event of a discrepancy: (a) The Parties shall have the right to review the QA/QC procedures followed by the other Party's laboratory and related documentation to identify the source of the discrepancy; and (b) unless otherwise agreed, the Parties will jointly resample the well location and repeat the analysis with the new split sample. This will eliminate any possibility of sampling error. If the 2nd round of sampling is inconclusive, then the parties shall collect a 3rd round of sample and submit the samples for analysis at a mutually agreeable laboratory that is neither the PLS laboratory nor the laboratory that analyzed the original City Split Sample. The results of this analysis shall be considered the Verified Monitoring Result, upon confirmation that proper laboratory and sampling QA/QC procedures were followed.

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Appendix B

SURETY BOND

Bond No.______________

We, ____, hereinafter referred to as the Principal, and ____, a corporation organized and existing under the laws of the State of ________________________ and duly authorized to do business in the State of Michigan, as Surety, are held and firmly bound unto the City of Ann Arbor, Michigan, hereinafter referred to as Obligee, in the sum of Two Hundred Thousand Dollars ($200,000.00), lawful money of the United States of America, to the payment of which sum well and truly to be made, we bind ourselves, our executors, administrators, successors, and assigns, firmly by this bond.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Obligee has issued to the Principal certain Licenses for Groundwater Monitoring Wells, and Obligee will issue to the Principal additional Licenses for Groundwater Monitoring Wells, each of which Licenses is hereinafter referred to as Permit, each of which grants to the Principal certain rights and commits the Principal to certain obligations related to the installation and maintenance of a monitoring well or wells within the public rights-of-way or other property of Obligee; and

WHEREAS, each of the Licenses for Groundwater Monitoring Wells in Road Right-of-Way that Obligee already has issued is listed in the attached Exhibit 1 and Exhibit 1 will be amended from time to time to add the additional Licenses for Groundwater Monitoring Wells issued to the Principal, not to exceed ten (10) in number;

NOW, THEREFORE, if the Principal shall faithfully comply with all terms and conditions of each Permit and with all applicable laws, ordinances, rules and regulations which have been or may hereafter be in force affecting said Permit, and shall save and keep harmless the Obligee from all loss, damage or expense which it may sustain or for which it may become liable on account of the issuance of each Permit to the Principal, including but not limited to expenses incurred to restore the public rights-of-way or other property during and after use of same by the Principal, then this obligation shall be void; otherwise, to remain in full force and effect.

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This bond may be canceled by the Surety by sending advanced written notice, certified mail, to the Obligee stating when, not less than 60 days thereafter, such cancellation shall be effective, after which the liability of the Surety shall cease except for claims made upon the Surety prior to the effective date of such cancellation. It is understood that the full penalty of this bond shall be available during its effective period to secure, cover and extend to any and all obligations of the Principal to the Obligee under the Permits, past, present and potential. It is understood that if this bond is canceled by the Surety, the Principal is obligated to provide the Obligee a substitute bond or letter of credit acceptable to the Obligee. If the Principal fails to deliver a substitute bond or letter of credit acceptable to the Obligee prior to the effective date of such cancellation, then the Obligee may claim the full penalty of this bond.

Signed and sealed this ______ day of ___________________, 200__.

______________________________________	______________________________________
(Name of Surety Company)	(Name of Principal)
By: __________________________________	By: __________________________________
(Signature)	(Signature)
Typed Name: ___________________________	Typed Name: ___________________________
Its: __________________________________	Its: __________________________________
(Title of Office)	(Title of Office)

Name and address of agent:

____

____

Approved as to form:

____

Stephen K. Postema, City Attorney

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Exhibit 1

Licenses for Groundwater Monitoring Wells Covered by this Surety Bond

List of 18 Licenses for Groundwater Monitoring Wells granted to Principal by the City of Ann Arbor as of November 1, 2006. This list is subject to amendment to add up to ten (10) additional Licenses for Groundwater Monitoring Wells.

Well I.D.	Location	License End Date
MW-71	Park Lake & Lakeview Dr.	June 30, 2011
MW-76	Worden & Jackson	March 14, 2012
MW-79	Veterans Memorial Park*	June 25, 2012
MW-83	Veterans Memorial Park*	June 25, 2012
MW-84s&d	Veterans Memorial Park*	June 25, 2012
MW-97	Fountain & Summit	December 31, 2015
MW-98	Huron & Arbana	December 31, 2015
MW-99	Maple Ridge (on traffic island)	December 31, 2015
MW-102	City Hall*	December 31, 2015
MW-79d	Veteran's Park*	June 30, 2016
MW-101	501 N. Maple	June 30, 2016
MW-103	Glendale & Abbott	June 30, 2016
MW-104	Leona & Walter	June 30, 2016
MW-105	Dolph Park*	June 30, 2016
MW-106	Rhea St. r-o-w	June 30, 2016
MW-107	near 2612 Dexter - r-o-w	June 30, 2016
MW-108	Park Lake Ave r-o-w	June 30, 2016

* Wells located on City property. All other wells are in City rights-of-way.

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EXHIBIT

5

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Training Material

for

Part 201

Cleanup Criteria

Michigan Department of Environmental Quality
Environmental Response Division
www.deq.state.mi.us
John Engler, Governor
Russell J. Harding, Director

January 1998

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APPENDIX A

Source Control Obligations for Part 201 Facilities

Requirements for source control depend on the statutory provision which is applicable to the situation. The attached flow chart will assist you in evaluating how the source control provisions of Part 201 apply to a given facility. Additional explanation is provided below for some of the "decision boxes" on the flow chart. With the exception of Box F, which applies to all remedial action plans regardless of whether they are proposed by liable or non-liable persons, the other boxes relate to affirmative obligations of a liable person under Section 14.

Box A: "Is hazardous substance in a container?" -- The answer to this question determines whether Section 14(1)(c) applies. ERD interprets Section 14(1)(c) -- "stop or prevent the release at the source" -- as applicable to hazardous substances in containers which are abandoned or from which releases have occurred. For example, a leaking drum or tank may contain product which is being used as part of a facility's processes. The drum or tank itself is not abandoned, but it is the source of a release which must be stopped or prevented at the source. ERD does not interpret Section 14(1)(c) to be applicable to leaching from contaminated soil, nor to individual drums or other buried containers in mixed waste landfills. For purposes of this analysis, "container" has the same meaning as in the proposed Due Care rules: "a barrel, drum, tank, vessel, surface impoundment, pipeline, or other receptacle regardless of size that contains a hazardous substance."

Box B: "Immediately stop or prevent the release at the source." -- For situations described above which are subject to Section 14(1)(c), this requirement is a straightforward performance standard. There may be some practical limitations resulting from problems such as access to the source. Such limitations should be acknowledged and accommodated in developing our requirements for compliance with Section 14(1)(c) on a case-by-case basis.

Box C: "Immediately initiate removal of free phase liquid hazardous substance." -- This is a paraphrase of the requirement in Section 14(1)(f), which states "immediately initiate removal of a hazardous substance that is in a liquid phase, that is not dissolved in water, and that has been released." Note that this provision does not use the term "free product", which is defined as "a hazardous substance in a liquid phase equal to or greater than 1/8 inch of measurable thickness that is not dissolved in water and that has been released into the environment." However, an important consideration in applying this provision to a given situation is whether the liquid is removable by a practical means (e.g., pumping, French drains, other gravity-fed collection systems, or soil vapor extraction), and measurable thickness is certainly a factor. Depending on soil type, the viscosity and distribution of the hazardous substance, and other factors, not all free-phase liquids are recoverable.

In addition, hazardous substances in a liquid phase can include hazardous substances still in the vadose zone. However, this provision should not be interpreted to mean all concentrations of hazardous substances that exceed Csat require removal as a source control measure. A more appropriate threshold to use relative to source control would be whether the soil is visibly saturated or is able to release visible liquid hazardous substances by gravity or squeezing.

It is also important to note that the operative words in this provision are "immediately initiate". It does not impose a specific performance standard for completing the removal. ERD interprets this section to require a reasonable and effective continuing effort to remove free-phase liquid hazardous substances. Rule language has been proposed to clarify the fact that continuing efforts to remove free product are required as an interim response under the Section 14(1)(g) requirement to diligently pursue response activity. The purpose of Section 14(1)(f) and the rule

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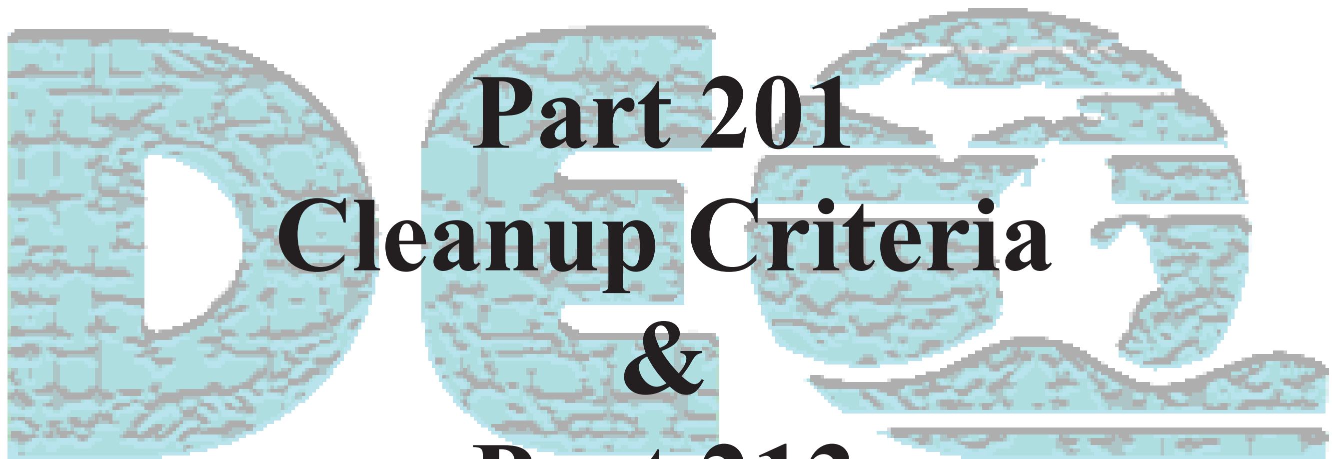
Training Material



Part 201
Cleanup Criteria
&
Part 213
Risk-Based Screening Levels

Michigan Department of Environmental Quality
Remediation and Redevelopment Division
www.michigan.gov/deq

June 2006

THIS DOCUMENT REPLACES THE 1998 versions of the "Training Materials for Part 201 Cleanup Criteria"

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APPENDIX C

Discussion of Flow Chart of Source Control Obligations

Requirements for source control depend on the statutory provision which is applicable to the situation. The attached flow chart will assist you in evaluating how the source control provisions of Part 201 and Part 213 apply to a given *FACILITY*. Additional explanation is provided below for some of the "decision boxes" on the flow chart. With the exception of Box I, which applies to all remedial action plans and final assessment reports regardless of whether they are proposed by liable or non-liable persons, the other boxes relate to affirmative obligations of a liable person under Section 20114 and an owner or operator of a leaking underground storage tank system under 21307. The affirmative obligations to take immediate action to control sources are in addition to the requirements to address source control as a part of remedial and corrective actions as required in Sections 20118(8) and 21311a(1). In rare circumstances greater risks would be posed to public health, safety or welfare or the environment by pursuing immediate source control than by waiting to pursue source control as a part of other *RESPONSE ACTIONS*. Such circumstances should be acknowledged and professional judgment used on a case-by-case basis in pursuing compliance with the affirmative obligations of Sections 20114 and 21307; however this only addresses the immediacy of the action to be taken, not the requirement to pursue source control.

Box A: "Identify and mitigate fire, explosion and vapor hazards." -- For Part 213 sites where a release from an underground storage tank system has been confirmed, Section 21307(2) requires that identification and mitigation of fire, explosion and other vapor hazards begin immediately and be performed expeditiously. For Part 201 facilities, Section 20114(1)(e) and R 299.5526(4) require that an owner that has knowledge that a property is a *FACILITY* and is liable under Section 20126 immediately identify and eliminate any threat of fire or explosion, acute direct contact hazards, immediate threats to drinking water supplies and acutely toxic discharges to surface water.

Box B: "Is it a UST site or is there a *HAZARDOUS SUBSTANCE* in a container?" -- RRD interprets Section 20114(1)(c) -- "stop or prevent the release at the source" -- as applicable to *HAZARDOUS SUBSTANCES* in containers which are abandoned or from which releases have occurred. For example, a leaking drum or tank may contain product which is being used as part of a *FACILITY'S* processes. The drum or tank itself is not abandoned, but it is the source of a release which must be stopped or prevented at the source. Section 20114(1)(c) is not generally applicable to leaching from contaminated soil, nor to individual drums or other buried containers in mixed waste landfills. For purposes of this analysis, "container" has the same meaning as in R 299.51001(c) of the Due Care Administrative Rules: "a barrel, drum, tank, vessel, surface impoundment, pipeline, or other receptacle regardless of size that contains a *HAZARDOUS SUBSTANCE*."

Box C: "Immediately stop or prevent the release at the source." -- For situations which are subject to Sections 20114(1)(c) or 21307(2)(b), this requirement is a straight-forward performance standard.

Box D: "Is a HAZARDOUS SUBSTANCE present as FREE PHASE LIQUID for Part 201 facilities or as FREE PRODUCT for Part 213 sites?"—Determination of the nature and extent of a release should identify the presence of *FREE PHASE LIQUIDS* (Part 201) or *FREE PRODUCT* (Part 213). Sections 21307 and 21308a require the identification of the presence of *FREE PRODUCT*, defined

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PALL Life Sciences

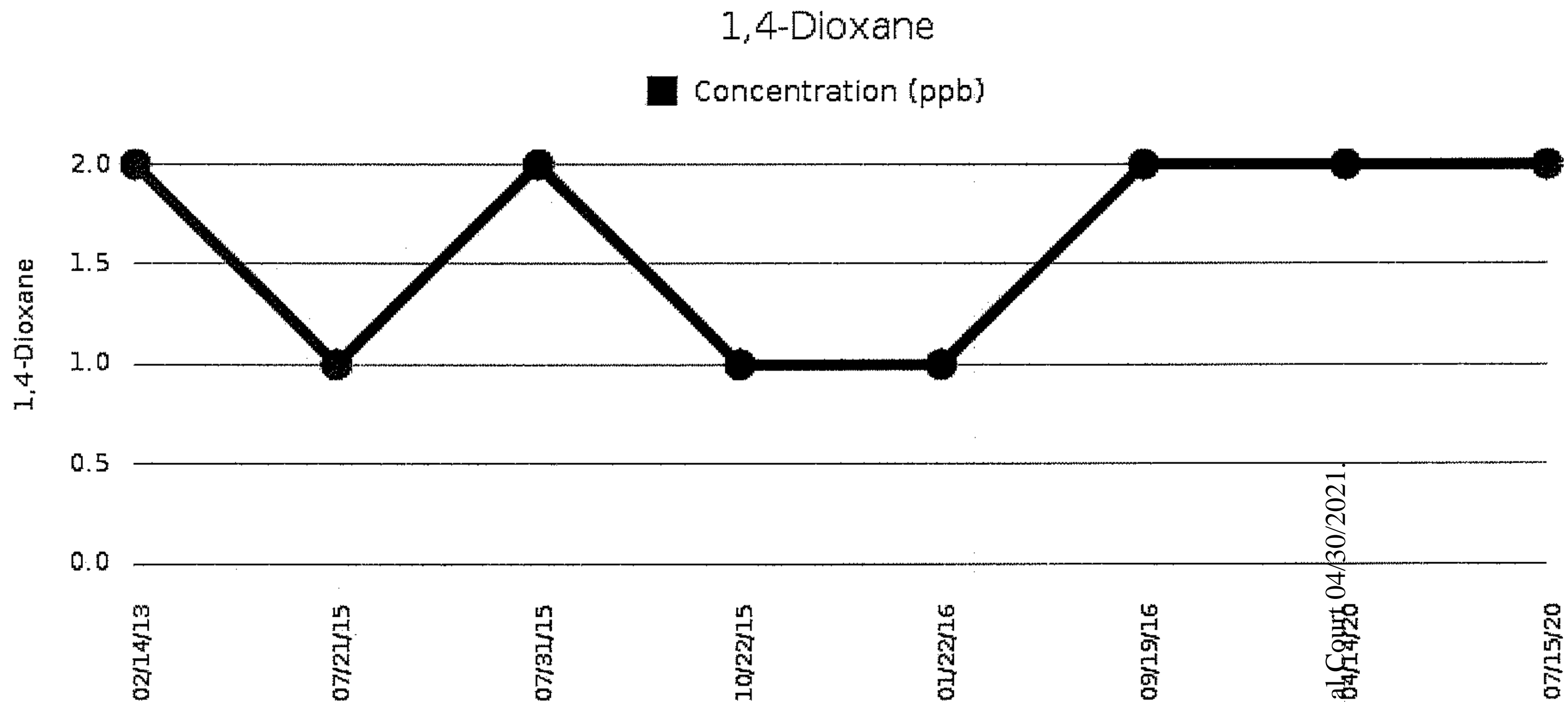
Gelman Sciences, Inc. d/b/a
Pall Life Sciences
642 South Wagner Road
Ann Arbor, MI 48103-9019 US
www.pall.com

Analytical Data Graph

Printed: 04/29/2021

Well Name: MW-121d

Aquifer:	E	Date Installed:	12/15/2008	Boring Depth:	224.00 Feet bgl	Screen 1:	180.00 to 175.00 Feet
Map Location:	F-20	Well Driller:	Stearns	Ground Elevation:	Unknown Feet	Screen Length:	5.00
X Coordinate:	13277856.91	Well Type:	Monitoring Wells	TOC Elevation:	938.88 Feet	Screen 2:	Unknown to Unknown Feet
Y Coordinate:	288586.98	Sampling Interval:	Quarterly	TOC to screen bottom:	Unknown Feet		
Comments:	to be sampled monthly May-Oct 2016 then back to qtrly						



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Gelman Sciences, Inc. d/b/a
Pall Life Sciences
642 South Wagner Road
Ann Arbor, MI 48103-9019 US
www.pall.com

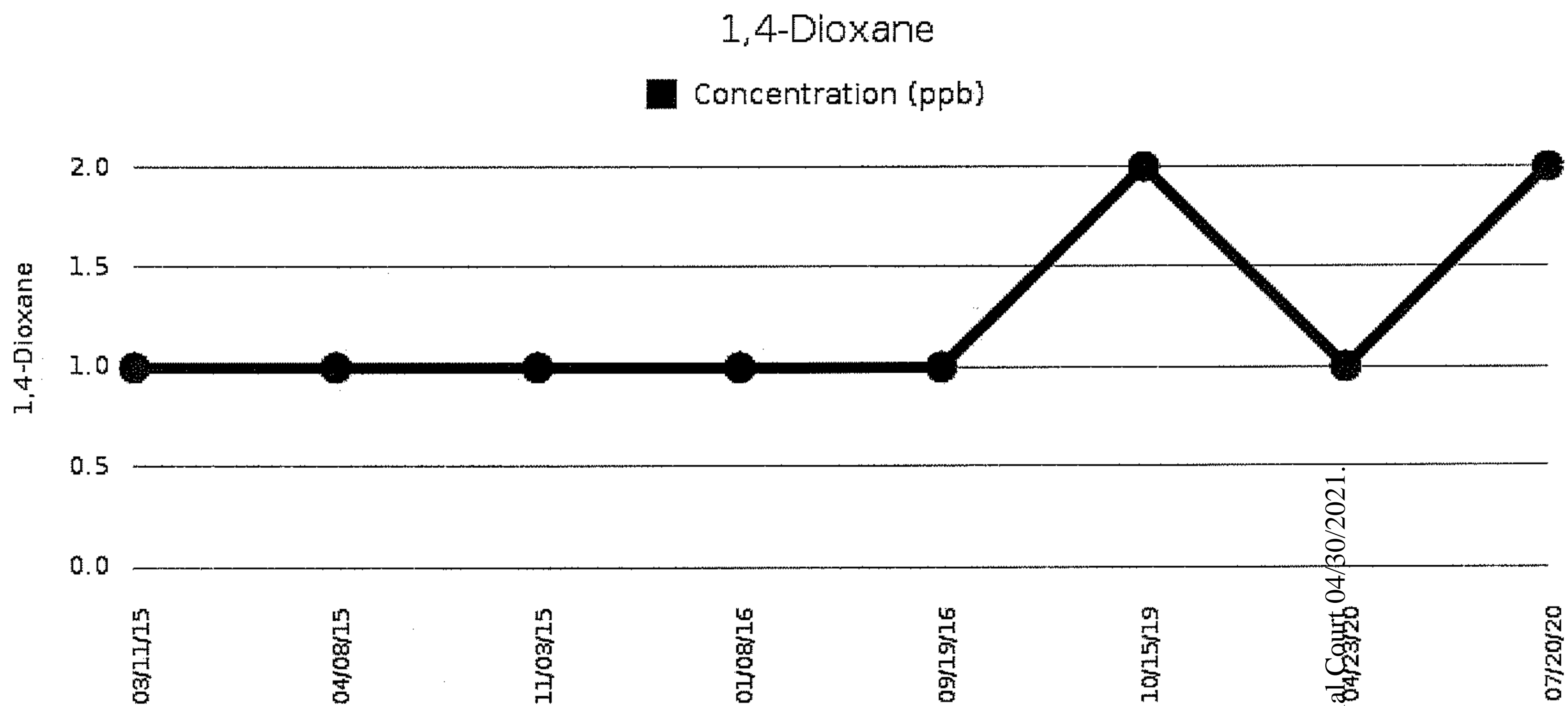
PALL Life Sciences

Analytical Data Graph

Printed: 04/29/2021

Well Name: MW-129d

Aquifer:	E	Date Installed:	02/18/2011	Boring Depth:	228 Feet bgl	Screen 1:	205 to 200 Feet
Map Location:	D-21	Well Driller:	Stearns Drilling	Ground Elevation:	N/A Feet	Screen Length:	5
X Coordinate:	13278519.82	Well Type:	Monitoring Wells	TOC Elevation:	946.54 Feet	Screen 2:	N/A to N/A Feet
Y Coordinate:	289142.88	Sampling Interval:	Quarterly	TOC to screen bottom:	N/A Feet		
Comments:	to be sampled monthly May-Oct 2016 then back to qtrly						



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PALL Life Sciences

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www.pall.com

Analytical Data Graph

Printed: 04/29/2021

Well Name: MW-129d

Aquifer:	E	Date Installed:	02/18/2011	Boring Depth:	228 Feet bgl	Screen 1:	205 to 200 Feet
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X Coordinate:	13278519.82	Well Type:	Monitoring Wells	TOC Elevation:	946.54 Feet	Screen 2:	N/A to N/A Feet
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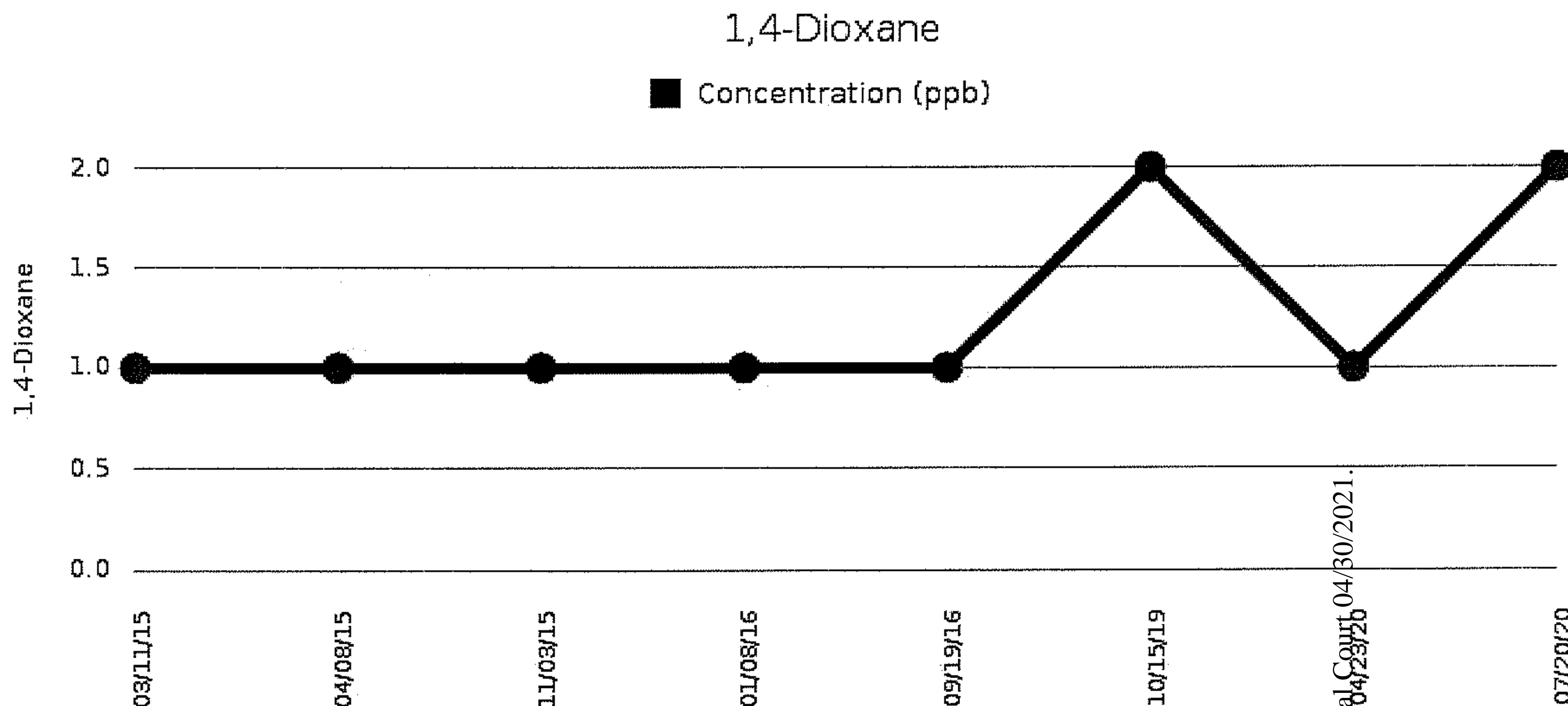

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STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

JENNIFER GRANHOLM, Attorney General for the State of Michigan, ex rel, MICHIGAN NATURAL RESOURCES COMMISSION, MICHIGAN WATER RESOURCES COMMISSION, and MICHIGAN DEPARTMENT OF NATURAL RESOURCES,

Plaintiff,

vs

GELMAN SCIENCES, INC.,

Defendant.

Case No. 88-34734-CE

Honorable Donald E. Shelton

OPINION AND ORDER REGARDING REMEDIATION OF THE CONTAMINATION OF THE "UNIT E" AQUIFER

At a Session of the Court held in the Washtenaw County Courthouse in the City of Ann Arbor, on December 17, 2004

PRESENT: HONORABLE DONALD E. SHELTON, Circuit Judge

Background

Gelman Sciences makes filters for medical purposes and employs several hundred people at a facility located on Wagner Road in Scio Township, adjacent to the City of Ann Arbor. For several years in its production of these filters Gelman used a man-made compound known as 1,4 dioxane, a solvent used in a number of products and industries. It is classified by the Environmental Protection Agency as a "possible" human carcinogen. Gelman had been storing waste water containing dioxane in unlined lagoons near its plant and had apparently also sprayed the wastewater on the ground around the plant. In the mid 1980's, it was discovered

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that this waste water had seeped through the ground and contaminated the ground water supply in the area. Gelman ceased using dioxane in 1986.

This case was originally filed in 1988 by the State to require Gelman to clean up pollution of local water supplies caused by the discharge of dioxane. The original judge conducted a trial in 1991 and found that the contamination was the result of waste disposal practices by Gelman but that those practices had been done in accordance with State approved procedures. Eventually, a Consent Judgment identifying the required remediation actions was agreed to by the parties and entered on October 26, 1992. In the 16 years this case has been pending, many things have changed, including the identity if the participants. The successor to the plaintiff agency is now called the Michigan Department of Environmental Quality ("MDEQ"). The defendant corporation was acquired by another company in 1997 and is now known as Pall Life Sciences, Inc. ("Pall"). The original judge retired, the case was reassigned, and then was subsequently reassigned to this Court.

The original Consent Judgment was amended by the parties and the Court on September 23, 1996 and again on October 20, 1999. In early 2000, the MDEQ filed a motion to enforce the Consent Judgment and for monetary sanctions. This Court conducted a lengthy evidentiary hearing. On July 17, 2000 the Court entered its Remediation Enforcement Order which ordered the development and implementation of a detailed plan to reduce the dioxane in all affected water supplies below legally acceptable levels within a period of five years. The Court ordered plan also provided for subsequent monitoring of water supplies for an additional ten year period. The parties were advised that the Court intended to

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vigorously enforce the Consent Judgment and its remedial orders with all of its statutory and equitable powers.

The parties have complied with the basic provisions of Court's Remediation Enforcement Order. By pumping and treating over a billion gallons of contaminated water at a treatment facility constructed on its Wagner Road site, over 37,000 pounds of 1,4 dioxane has been removed from the aquifer covered by this Court's five year order. Pall has complied with the terms of that Order.

However, in 2001 it was discovered that the contaminant had somehow seeped below the shallower aquifer and had contaminated a much deeper aquifer denominated by the parties as "Unit E". Test wells revealed that the plume of dioxane in that aquifer had spread Eastward under the City of Ann Arbor. The parties have been testing throughout the area to determine the spread of the plume and have been trying to develop a plan to treat the contamination of that aquifer. While there is apparent agreement on several aspects of the proposed remedial action, MDEQ and Pall disagree about important parts of the plan. The Court ordered the parties to submit their view of the proposals and to respond to questions posed at the last hearing so that the Court could resolve the outstanding issues and expedite the decontamination process for Unit E.

Procedural Posture

Initially, the parties have raised questions about the applicability of the Consent Judgment to Unit E, the responsibility of the Court to review MDEQ actions, and the scope of the Court's role in this process.

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The Court finds that the Unit E contamination is subject to the Consent Judgment in this case. While this particular area of contamination had not been discovered at the time of the Consent Judgment, that judgment was intended to address the entire issue of the remediation of 1,4 dioxane emanating from the Gelman property on Wagner Road. Technically, the Court agrees with the MDEQ assertion that Unit E falls within the "Western System" as that phrase was used in the Consent Judgment. Its subsequent migration in an easterly direction does not negate that finding. The Court has the inherent and equitable powers to enforce its judgment with all appropriate measures and sanctions as to Unit E contamination.

The MDEQ, however, also questions the scope of the Court's powers and responsibilities regarding enforcement of the Consent Judgment and the Court's statutory powers and responsibilities pursuant to Part 201 of the NREPA, MCL 324.20101 *et seq.* As MDEQ asserts, the Court's determination of appropriate remedial action under both the Consent Judgment and the statute should normally be based on the administrative record, including all materials submitted by the defendant. *Consent Judgment*, Sec. XVI.C; MCL 324.20137(5). The Consent Judgment also provides for the taking of additional evidence "by the Court on its own motion or at the request of either party if the Court finds that the record is incomplete or inadequate". *Consent Judgment*, Sec. XVI.C.

The Court's review of MDEQ actions is not solely limited to a determination of whether those actions are "arbitrary and capricious". The standard for review under the statute is whether the "decision was arbitrary and capricious or 'otherwise not in accordance with law'". MCL 324.20137(5). The standard for

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review of MDEQ remedial action proposals under the Consent Judgment in this case is broader as well. It provides that MDEQ actions are reviewed by this Court to determine if the decision is either (1) inconsistent with the Consent Judgment, or (2) not supported by competent, material, and substantial evidence on the whole record, or (3) arbitrary, capricious, or clearly an abuse or unwarranted exercise of discretion, or (4) affected by any other substantial and material error of law. *Consent Judgment*, Section XVI.D.

Additionally, the Court has and intends to exercise its inherent powers to enforce its own directives. Circuit courts have the jurisdiction and the power to make any order to fully effectuate the circuit courts' jurisdiction and judgments. See *St. Clair Commercial & Savings Bank v. Macauley*, 66 Mich App 210 (1975); *Schaeffer v. Schaeffer*, 106 Mich App 452 (1981); *Cohen v. Cohen*, 125 Mich App 206 (1983); MCL 600.611. This case ended up in Court initially because no clean up of significant pollution had even begun without Court intervention. The MDEQ, and subsequently the defendant, sought to invoke the equitable and statutory powers of the Court to bring about remediation of a dangerous contamination of the public's water supply. Eventually a judgment was entered and remediation orders have been made by the Court to effectuate that judgment and the goal of cleaning up this pollution. Despite the best efforts of the parties, it is not done. The extent of the contamination is deeper and greater than originally known, perhaps aggravated many years ago both by the initial resistance of Gelman and the initial ineffectiveness of the State agency. It is going to take continued concerted actions by all of the parties to remedy this expanding contamination. The Court is

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determined to exercise all of its inherent, statutory, and equitable powers to assure that those actions take place as soon as possible.

<u>The Unit E Disputes</u>

The Unit E aquifer is extremely deep, apparently over 200 feet underground. It appears to flow in an easterly direction eventually depositing water into the Huron River, which runs through Washtenaw County and the City of Ann Arbor. Test wells have indicated the presence of 1,4 dioxane under the City with the leading edge of the plume more than two miles from the Wagner Road facility. The plume is continuing to spread. At this point, the aquifer is not a source of drinking water. The City of Ann Arbor services all of its citizens with a municipal water system which draws its water primarily from the Huron River but at a point well upstream of the point at which the Unit E aquifer vents into the river. One City well did draw water from the aquifer but it has been taken out of service. There are no private wells drawing from the affected portion of the aquifer.

The MDEQ and Pall have diligently been pursuing a plan to control the contamination plume in the Unit E aquifer. Test wells have been put in place. Working in conjunction with the MDEQ, Pall has designed new technologies to arrest the contamination. The parties have cooperated in the exchange of technical data and other information. There is significant public interest and several public hearings have been held. Input has been received from public interest organizations as well as from the City of Ann Arbor. MDEQ made a decision on September 1, 2004 outlining its plan for Unit E remediation. The parties agree on much of that plan but disagree on two important elements: (1) the actions to be taken at the

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Wagner Road facility to prevent further contamination of the aquifer, and (2) the approach to be used to remove contaminants from the plume in the aquifer that is already migrating East of the Wagner Road facility. The disputes as to those issues are properly before the Court.

<u>Actions to be Taken at the Wagner Road Facility</u>

The MDEQ calls for Pall to do test borings and then install extraction wells into the Unit E aquifer at the Wagner Road site and to purge the water from those wells at the treatment facility Pall has built and operates on that property. The purged water would then be discharged into Honey Creek in the same manner as Pall has successfully treated and discharged water from shallower sources. Pall agrees with the test borings, including one with the "rotosonic" technique required by MDEQ.

Pall disputes the MDEQ requirement that extraction wells and treatment then be undertaken with a goal to "capture the entire width of the Unit E plume at Wagner Road" and to "create a hydraulic barrier near Wagner Road to prevent further migration of groundwater contamination above 85 ppb east of Wagner Road". Pall proposes that any extraction wells would be designed to reduce the mass of contaminants but claims that the objective of capturing the entire width of the plume at that point is not feasible, not supported by the evidence, and would be inconsistent with its obligations under the Consent Judgment.

It appears to the Court that much of this dispute is semantic, or at least premature. The goal set by the MDEQ of total capture of the width of the plume is certainly appropriate - if it can be done. Whether it is feasible or not depends on a

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number of factors that will not be known until the test borings are complete. That portion of the MDEQ rationale relating to protecting non-existent private wells and protecting the non-operational City Northwest Supply well is not supported by the evidence on the record. However, the primary MDEQ rationale is that controlling groundwater contamination at or near its source is more efficient than trying to capture it later as it spreads through the aquifer. There is ample support for that position. Pall does not seriously contest that proposition but disagrees with MDEQ's projection of the degree to which such interception will prove successful. Pall may well be right but the reality is that we will simply not know how much reduction is possible until the test wells are complete and extraction wells placed into operation.

One portion of the Pall objection to the Wagner Road plan deserves more serious consideration. Pall maintains that if it extracts and treats all of the Unit E water that MDEQ wants at Wagner Road, it will not be able to discharge that water into Honey Creek because, when combined with the other required treatment already underway, the total will exceed the NPDES discharge permit levels allowed by MDEQ. To the extent that this proves to be true, the MDEQ will either have to expeditiously increase the discharge permit level or forego its goal of complete Unit E capture at Wagner Road. To the extent that there is a "competition" for permitted discharge, priority must be given to the water currently being treated from shallower levels.

Subject to the limitations expressed above, Pall shall:

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1. Perform the investigation described in the August 1, 2004 Work Plan for Test Boring/Well installation and Aquifer Testing in the Wagner Road Area, as modified by MDEQ's letter of August 19, 2004, including the use of rotosonic drilling for at least one boring.
2. Submit a report of the investigation to MDEQ within 30 days of the completion of the aquifer performance test.
3. Within 60 days after completion of the aquifer performance test, submit a work plan to MDEQ which will, to the maximum extent feasible, prevent further migration of groundwater contamination above 85 ppb of 1,4 dioxane eastward into the Unit E aquifer. The plan will identify any required increase in the NPDES discharge permit to accommodate such additional treatment.
4. If the parties do not agree on a Unit E Wagner Road work plan within 30 days after submission, it will be brought before the Court on motion by MDEQ for resolution.

Actions to be Taken in the Eastern Portion of Unit E

The other major issue is how to remove contaminants from the plume that has already spread eastward into the Unit E aquifer. It will never be possible to extract all of the 1,4 dioxane from this deep aquifer and the geology is such that it will ultimately end up in the Huron River and be diluted far below currently acceptable standards. But the goal must be to remove as much of the contaminant as possible, as quickly as possible, so that the ultimate dilution will take place with minimal impact on the water resource.

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Pall has proposed remediation by means of a reinjection system in which water is extracted from the aquifer, treated on the Maple Road site, and immediately reinjected into the aquifer at that location. This system is one which has been developed over the last many months and has been the subject of much investigation by the parties as well as review hearings by the Court. The MDEQ has, with the conditions and qualifications discussed below, agreed with the Pall reinjection plan. The Court believes that treatment and reinjection of Unit E water should commence forthwith in accordance with that plan. Pall shall submit its detailed work plan to MDEQ not later than thirty days from this Order. The work plan will be designed to purge enough water so that any water escaping from the purging zone in Unit E will not exceed 2,800 ppb recommended by the MDEQ.

The MDEQ qualified its approval of the Pall plan on six conditions, some of which form the basis of the disputes now before the Court. The first MDEQ condition is that the City of Ann Arbor formally abandon the Northwest Water Supply ("Montgomery") well. The City closed the well in February of 2001. The cause for the closing is being disputed between the City and Pall in a separate lawsuit. The City there claims that it closed the well because dioxane from the Gelman site had contaminated it. Pall claims that the level of 1,4 dioxane alleged to be in the well was 2 ppb, well below the 85 ppb standard. Pall also claims that the well is closed because the City found 18 ppb of arsenic, unrelated to any Gelman contamination, in the well. The outcome of those allegations, and any compensation claims, will be decided in that separate

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action. As far as this case is concerned, the closed well has no bearing on the remediation plan for Unit E. There is no basis to include it as a condition to the clean up plan.

The third condition imposed by MDEQ relates to the administrative requirements of the statute. Since the proposed remedial plan contemplates levels above 85 ppb, provisions of the rules require an administrative "waiver". Pursuant to MCL 324.20118(6)(d), such a waiver would require "other institutional controls necessary to prevent unacceptable risk from exposure to the hazardous substances". MCL 324.20120b(5) states the mechanisms for such institutional controls "include, but are not limited to, an ordinance that prohibits the use of groundwater or an aquifer in a manner and to a degree that protects against unacceptable exposures as defined by the cleanup criteria approved as part of the remedial plan". Applied to this case, this means that there must be enforceable restrictions on the human use of water from the Unit E aquifer during remediation. Pall asserts that the Washtenaw County Rules and Regulations for the Protection of Groundwater adopted on February 4, 2004, if supplemented by an appropriate order from this Court, meet that statutory requirement. The Court agrees. Under the circumstances of this case it would be arbitrary and unreasonable to delay the cleanup of the Unit E aquifer pending the drafting and potential adoption of an ordinance or other legislative action to supplement the Washtenaw County Rules and Regulations already in place. The parties are directed to submit a proposed order to this Court which will include at least the following controls:

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1. A map that identifies the area that would be covered by the judicial institutional control, including a buffer zone.

2. A prohibition against the installation of new water supply wells for drinking, irrigation, or commercial or industrial use, within the zones shown on the map.

3. A prohibition directed to the County Health Officer prohibiting permits for well construction in those zones.

4. A prohibition against consumption or use of groundwater from within the zones.

5. A requirement that PLS provide, at its expense, connection to the City of Ann Arbor municipal water supply for any existing private drinking water wells within the zones.

6. A requirement that the Order be published and maintained in the same manner as a zoning ordinance.

7. A provision that the Order shall remain in effect until such time as it is amended or rescinded by further Order of the Court, with a minimum 30 days notice to all parties.

8. A provision to allow either party to move to amend the boundaries of the prohibition zone to reflect material changes in the boundaries or fate of the plume as determined by future hydrogeological investigations and/or monitoring.

Next, the MDEQ conditions its approval of the remediation plan on the retention by Pall of a person to do "stochastic modeling" of Unit E. Based on the record, there is no substantial evidence to indicate that such a model would assist the remediation of this area in any way. The field data required by the MDEQ has served to develop the model for remediation and will continue to do so. It is this field data that allows the MDEQ, and then the Court, to review whether the remediation is working. There is no indication that "stochastic modeling" will add anything to those remediation efforts and it is not required. MDEQ has properly

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required that Pall conduct future monitoring of the plume path and plume concentration. Pall has agreed and has submitted a work plan to meet that requirement.

Finally, and most importantly, the MDEQ has conditioned its approval of the remediation plan on the development of an alternative plan that would require construction of a large treatment facility at Maple Road and the piping of water from significant distances through Unit E back to Maple Road for treatment and then discharge into the Huron River via another pipeline. The alternative insisted upon by MDEQ would require the installation and operation of a treatment system large enough to accommodate 1150 gallons per minute in the commercial area near Maple Road. Pall contends that such a facility is not feasible and would not be safe. The feasibility of the MDEQ proposal is subject to serious question. The acquisition and rezoning of enough land to site both the treatment facility and the required ponds in this congested area would take considerable time, if it ever could be done. Such a facility would require location and storage of an amount of liquid oxygen equal to that currently used at the Wagner Road treatment facility and five times the amount used at the current Maple Road mobile facility. Locating such a facility in this retail commercial area does pose significant dangers.

Most importantly, the alternative in this MDEQ condition means that thousands, perhaps millions, of gallons of contaminated water would need to be piped under the City to be treated at the proposed Maple Road facility. This would require the installation of three to four miles of pipelines, including at least 1½ miles of pipelines in residential Ann Arbor neighborhoods. To say that the residents in the

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affected areas would be reluctant to agree to have pipelines containing 1,4 dioxane running through their neighborhoods is an understatement by several degrees of magnitude. Public hearings have demonstrated overwhelming opposition to such a plan. While the City of Ann Arbor has filed a pleading agreeing with the construction a Maple Road facility, notably missing from its brief is any commitment to facilitate the location of the required dioxane-bearing pipelines in Ann Arbor neighborhoods. In 1998 it took months, and this Court eventually had to intervene with an Order, to force the installation of 1000 feet of a pipeline near the Wagner Road facility--and that pipeline was only running under a freeway.

Whether the concerns of residents about such pipelines are scientifically justified or not, the political and practical reality is that the required pipeline rights-of-way and construction could not begin to take place for years, if ever. This contamination was discovered twenty years ago and this lawsuit to get it cleaned up has been pending for sixteen of those years. The water in the Unit E aquifer continues to flow and the plume of 1,4 dioxane continues to expand within it. We simply do not have the years it would take for the MDEQ alternative to begin to remove any contamination from the leading edge of the Unit E. plume. After careful examination of the MDEQ alternative set forth in its conditions, the Court finds that it is not feasible, is unwarranted, and is not supported by competent, material, and substantial evidence.

Conclusion

The parties have worked diligently to address the question of how the contamination of the Unit E aquifer should be addressed and have investigated

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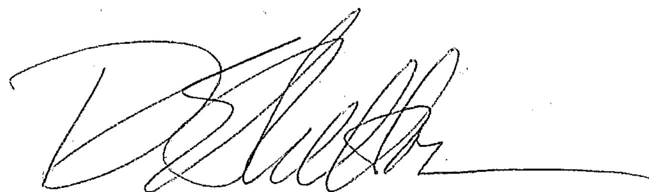
several alternatives. The process has been exhaustive but not expeditious. In the meantime the plume of 1,4 dioxane continues to spread. It is not the role of this Court to devise or fashion remedies for the spreading pollution of this deep aquifer. It is the role of this Court to enforce the Consent Judgment and to assure that whatever remedy is implemented conforms to that Judgment and to the pollution statutes of the State. The overriding guideline for that enforcement is the health and welfare of the public. The health and welfare of the public demands that the cleanup of the contamination of this large body of underground water begin, and proceed, as soon as humanly possible. The parties are ordered to implement the holdings in this Opinion and Order forthwith.

IT IS SO ORDERED



Donald E. Shelton
Circuit Judge

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EXHIBIT

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{00185111}

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STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

JENNIFER M. GRANHOLM, Attorney
General for the State of Michigan, *ex rel*,
MICHIGAN DEPARTMENT OF
ENVIRONMENTAL QUALITY,

Plaintiffs,

File No. 88-34734-CE

v

Honorable Donald E. Shelton

GELMAN SCIENCES, INC.,
a Michigan corporation,

Defendant.

ORDER PROHIBITING GROUNDWATER USE

At a session of said Court held in the City of Ann Arbor, County of Washtenaw, Michigan, on the 17th day of May, 2005.

PRESENT: HONORABLE DONALD E. SHELTON
Circuit Court Judge

On December 17, 2004, this Court issued its Opinion and Order Regarding Remediation of the Contamination of the "Unit E" Aquifer. That Opinion and Order resolved a dispute between the Parties regarding the September 1, 2004 Decision Document issued by the Michigan Department of Environmental Quality (MDEQ) regarding remediation of the "Unit E" groundwater contamination emanating from the Pall Life Sciences (PLS) (formerly known as Gelman Sciences, Inc.) facility in Scio Township, Washtenaw County.

Among other things, this Court determined that in order to satisfy the requirements of MCL 324.20118(6)(d) and MCL 324.20120b(5) for institutional controls preventing

unacceptable exposure to 1,4-dioxane in the groundwater, it is necessary and appropriate to supplement the Washtenaw County Rules and Regulations for the Protection of Groundwater adopted February 4, 2004, with a legally enforceable order of this Court prohibiting certain groundwater uses in specifically defined areas and addressing the relevant conditions identified in the MDEQ's September 1, 2004 Decision Document.

ACCORDINGLY, pursuant to the December 17, 2004 Opinion and Order, based upon further information provided by the Parties, for the reasons stated by the Court in its May 4, 2005 ruling on Plaintiffs' Motion to Enter Order Prohibiting Groundwater Use, and in the exercise of this Court's statutory and inherent authority to enforce its orders and judgments,

IT IS HEREBY ORDERED:

1. The prohibitions imposed by this Order apply to the zone identified in the map attached hereto as Figure 1 (Prohibition Zone).

2. The installation by any person of a new water supply well in the Prohibition Zone for drinking, irrigation, commercial, or industrial use is prohibited.

3. The Washtenaw County Health Officer or any other entity authorized to issue well construction permits shall not issue a well construction permit for any well in the Prohibition Zone.

4. The consumption or use by any person of groundwater from the Prohibition Zone is prohibited.

5. The prohibitions listed in paragraphs 2, 3, and 4 do not apply to the installation and use of:

(a) groundwater extraction and monitoring wells as part of response activities approved by MDEQ or otherwise authorized under Parts 201 or 213 of NREPA, or other legal authority.

(b) dewatering wells for lawful construction or maintenance activities, provided that appropriate measures are taken to prevent unacceptable human or environmental exposures to hazardous substances and comply with MCL 324.20107a.

(c) wells supplying heat pump systems that either operate in a closed loop system, or if not, are demonstrated to operate in a manner sufficient to prevent unacceptable human or environmental exposures to hazardous substances and comply with MCL 324.20107a.

(d) emergency measures necessary to protect public health, safety, welfare or the environment.

(e) any existing water supply well that has been demonstrated, on a case-by-case basis and with the written approval of the MDEQ, to draw water from a formation that is not likely to become contaminated with 1,4-dioxane emanating from the PLS facility. Such wells shall be monitored for 1,4-dioxane by PLS at a frequency determined by the MDEQ.

6. PLS shall provide, at its expense, connection to the City of Ann Arbor municipal water supply to replace any existing private drinking water wells within the Prohibition Zone. Within thirty (30) days after entry of this Order, PLS shall submit to MDEQ for review and approval a work plan for identifying, or verifying the absence of, any private wells within the Prohibition Zone, for the abandonment of any such private wells and for replacement of private drinking water wells with connection to the municipal water supply. Well abandonment and replacement shall be performed in accordance with all applicable regulations and procedures at the expense of PLS. PLS shall implement the work plan and schedule approved by MDEQ.

7. This Order shall be published and maintained in the same manner as a zoning ordinance.

8. This Order shall remain in effect in this form until such time as it is amended or rescinded by further order of this Court, with a minimum of thirty (30) days prior notice to all Parties.

9. Either Party may move to amend the boundaries of the Prohibition Zone to reflect material changes in the boundaries or fate of the groundwater contamination plume as described by future hydrogeological investigation or MDEQ approved monitoring of the fate of the groundwater contamination.

10. In the event the boundary of the Prohibition Zone is expanded, PLS shall, within thirty (30) days after entry of such an Order, submit to the MDEQ for review and approval, a work plan for identifying, or verifying the absence of any private wells within the modified Prohibition Zone, for the abandonment of any such private wells, and for the connection to the municipal water supply to replace any drinking water wells within the modified Prohibition Zone.

11. Either Party or a local unit of government having jurisdiction within the Prohibition Zone may seek enforcement of this Order by the Court.

12. This Order shall not affect the rights, liabilities, or defenses of any party in any other legal or administrative proceeding, nor shall it constitute evidence of either the presence or absence of 1,4-dioxane at any location inside or outside the Prohibition Zone in any such proceeding.

/s/DONALD E. SHELTON

HONORABLE DONALD E. SHELTON
Circuit Court Judge

APPROVED AS TO FORM:

Robert P. Reichel

Robert P. Reichel (P31878
Assistant Attorney General
Attorney for Plaintiffs

Michael L. Caldwell by RPR with consent

Michael L. Caldwell (P40554)
Alan D. Wasserman (P39509)
Attorneys for Defendant

Gelman/1989001467/Order3

EXHIBIT

10

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City of Ann Arbor

301 E. Huron St.
Ann Arbor, MI 48104
http://a2gov.legistar.com/Calendar.aspx

Legislation Details (With Text)

File #:	14-1557	**Version:** 1	**Name:**	12/15/14 - Deed Covenant Ann Arbor City Landfill
Type:	Resolution		**Status:**	Passed
File created:	12/15/2014		**In control:**	City Council
On agenda:	12/15/2014		**Final action:**	12/15/2014
Enactment date:	12/15/2014		**Enactment #:**	R-14-399

Title: Approval of a Restrictive Deed Covenant on the City of Ann Arbor Landfill Property

Sponsors:

Indexes:

Code sections:

Attachments: 1. RDC for AALF 12-1-14.pdf

Date	Ver.	Action By	Action	Result
12/15/2014	1	City Council	Approved	Pass

Approval of a Restrictive Deed Covenant on the City of Ann Arbor Landfill Property
The City of Ann Arbor maintains a closed landfill located at the southwest corner of Platt and Ellsworth Roads. A release from the Ann Arbor landfill (AALF) of the volatile organic compound vinyl chloride was discovered in 1992 in Southeast Area Park. The City of Ann Arbor has been actively recovering the affected groundwater and has been completing quarterly groundwater sampling to monitor the plume in accordance with an agreement with the Michigan Department of Environmental Quality (MDEQ).

The City of Ann Arbor is finalizing an Offsite Remedial Action Plan (Offsite RAP) with MDEQ for final remediation requirements. As part of this process, MDEQ requires that the AALF parcel have a groundwater use restriction attached to the property.

The purpose of this Offsite RAP is to: 1) describe how the practical and technically feasible remedies presented in the Onsite Remedial Action Plan (approved by the State in March, 1994) for the AALF and subsequent documents address offsite groundwater impacts; 2) present a schedule to implement and maintain the remedies; and 3) explain how the remedies address relevant offsite exposure pathways. This Offsite RAP follows the MDEQ Remediation and Redevelopment Division's *Suggested Format and Content for Remedial Action Plans and Plans for Interim Response Activities Designed to Meet Criteria (*March, 2004). The Offsite RAP was prepared pursuant to the requirements of Section 20120a(1) of Michigan's Natural Resources and Environmental Protection Act (NREPA), 1994 Public Act (PA) 451, as amended. Potential exposure pathways are evaluated and compared to applicable criteria outlined in the *MDEQ Remediation Division, Operational Memorandum No. 1: Part 201 Cleanup Criteria and Part 213 Risk-Based Screening Levels*, dated March 25, 2011 (Part 201 Criteria) for residential groundwater impacts. This Offsite RAP demonstrates how Part 201 and Part 115, Rule 444 of the MDEQ's landfill rules are satisfied using multiple components including: 1) maintenance of the existing slurry wall around the majority of the exterior portions of Phases I and II; 2) maintenance of an active groundwater recovery system near the northern AALF property boundary; 3) continuation of groundwater monitoring; 4) recording of deed restrictions on affected offsite properties; 5) recording of a deed restriction on the landfill for

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Phase I; 6) maintenance of the landfill gas collection system; and, 7) ongoing landfill cap inspections and maintenance.

As part of the Offsite RAP, the City is required to place a groundwater use restriction on two City properties (the AALF property and Southeast Area Park), and approve an environmental license agreement with the Michigan Department of Transportation (MDOT) for a section of MDOT right-of-way north of Southeast Area Park.

A groundwater use restriction implemented by deed restriction is a common precautionary approach by MDEQ to insure that there is no human contact with potentially contaminated groundwater. As a practical matter, this restriction does not impose a substantive change on the use of the property because Ann Arbor City Code prohibits the installation and use of wells for drinking water purposes and requires parcels within the city to connect to the City's water supply.

Attached for your approval is the restrictive deed covenant for the AALF. Upon approval, the document will be recorded with the Washtenaw County Register of Deeds.

Budget/Fiscal Impact
The work to implement this resolution will not have any budget/fiscal impacts.

Sustainability Framework
In addition to meeting the MDEQ requirements for the RAP, the work to implement this resolution also moves the city towards implementing recommendation furthers the Clean Air and Water goal of the City's Sustainability Framework.
Prepared by Matthew Naud, Environmental Coordinator
Reviewed by Craig A. Hupy, P.E., Public Services Area Administrator
Approved by Steven D. Powers, City Administrator
Whereas, The City of Ann Arbor maintains a closed landfill located at the southwest corner of Platt and Ellsworth Roads;

Whereas, A release from the landfill of the volatile organic compound vinyl chloride was discovered in 1992 in Southeast Area Park;

Whereas, The City of Ann Arbor has been actively recovering the affected groundwater and has been completing quarterly groundwater sampling to monitor the plume in accordance with an agreement with the Michigan Department of Environmental Quality (MDEQ);

Whereas, The City of Ann Arbor is finalizing an Offsite Remedial Action Plan (Offsite RAP) with MDEQ for final remediation requirements;

Whereas, MDEQ requires that certain parcels have a groundwater use restriction attached to the property;

Whereas, A groundwater use restriction implemented by deed restriction is a common precautionary approach by MDEQ to insure that there is no human contact with potentially contaminated groundwater; and

Whereas, The restriction implemented by the proposed restrictive deed covenant for the AALF does not impose a substantive change on the use of the property because Ann Arbor City Code prohibits

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the installation and use of wells for drinking water purposes and requires parcels within the city to connect to the City's water supply;

RESOLVED, That the Ann Arbor City Council approves the attached restrictive deed covenant to place restrictions on use of the City of Ann Arbor landfill property;

RESOLVED, That the Mayor and City Clerk are authorized and directed to execute the restrictive deed covenant for the City of Ann Arbor landfill property after approval as to substance by the City Administrator and approval as to form by the City Attorney; and

RESOLVED, That the City Administrator and City Attorney be authorized and directed to take the necessary administrative actions to implement this resolution, including the recording of the approved restrictive deed covenant with the Washtenaw County Register of Deeds.

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EXHIBIT

11

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STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

ATTORNEY GENERAL FOR THE STATE OF MICHIGAN, *ex rel*, MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT,

Plaintiffs,

File No. 88-34734-CE

v

Honorable Donald E. Shelton

GELMAN SCIENCES, INC.,
a Michigan corporation,

Defendant.

Celeste R. Gill (P52484)
Assistant Attorney General
Environment, Natural Resources and
Agriculture Division
P.O. Box 30755
Lansing, MI 48909
(517) 373-7540
Attorney for Plaintiffs

Michael L. Caldwell (P40554)
Zausmer, Kaufman, August,
Caldwell & Taylor, P.C.
31700 Middlebelt Road, Suite 150
Farmington Hills, MI 48334
(248) 851-4111
Attorney for Defendant

STIPULATED ORDER AMENDING PREVIOUS REMEDIATION ORDERS

At a session of said Court, held in the County of Washtenaw
City of Ann Arbor, State of Michigan, on MAR - 8 2011

PRESENT: Hon. DONALD E. SHELTON
CIRCUIT COURT JUDGE

RECITALS

A. A Consent Judgment was entered in this case on October 26, 1992. The Consent Judgment requires Defendant, Gelman Sciences, Inc., to implement various response activities to address environmental contamination in the vicinity of Defendant's property in Scio Township, subject to the approval of the Michigan Department of Natural Resources and Environment ("MDNRE"). The original Consent Judgment was amended by stipulation of the Plaintiffs and Defendant (collectively the "Parties) and Order of the Court on September 23, 1996 and October 20, 1999 (collectively the "Consent Judgment").

B. On November 15, 2010, counsel for the Parties presented the Court with a Notice of Tentative Agreement on Proposed Modifications to Remedial Objectives for Gelman Site ("Notice"), which described proposed changes that the parties had tentatively agreed to make to the remediation program for the Gelman Site.

C. During a hearing held on November 22, 2010, the Court instructed the parties to prepare an amendment to the October 26, 1992 Consent Judgment that was consistent with the proposed changes described in the Notice.

D. Contemporaneously with this Stipulated Order, the Parties are submitting the proposed Third Amendment to the Consent Judgment ("Third Amendment"), which memorializes the changes to the cleanup program described in the previously submitted Notice. By their signatures on the Third Amendment, the Parties stipulate and agree to its entry by the Court.

E. The Court has also supplemented the Consent Judgment with several cleanup related orders, based on information about the nature and extent of contamination acquired after the Consent Judgment and the Amendments were entered, including, Remediation and

Enforcement Order ("REO") dated July 17, 2000, the Opinion and order Regarding Remediation of the Contamination of the "Unit E" Aquifer ("Unit E Order"), dated December 17, 2004, and the Order Prohibiting Groundwater Use ("Prohibition Zone Order"), dated May 17, 2005.

F. Since entry of the REO and the Unit E Order, the parties have further refined their understanding of the nature and extent of contamination at the Gelman Site, which is reflected in the Third Amendment.

The Parties, through their legal counsel, stipulate and agree:

1. To the extent the Third Amendment is inconsistent with any of the requirements of the REO and/or the Unit E Order, the Third Amendment shall govern. In particular, the Third Amendment eliminates and supersedes the following remedial objectives of the REO and Unit E Order:

a. The REO's requirement that Defendant maintain a combined purge rate for the Evergreen System extraction wells of at least 200 gpm.

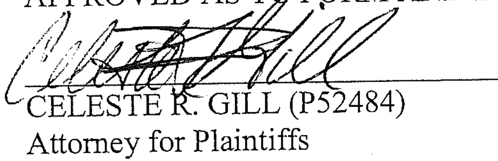
b. The REO's requirement that Defendant implement a plan to reduce the 1,4-dioxane in all affected water supplies below legally acceptable levels within five years.

c. The Unit E Order's requirement that Defendant prevent, to the extent feasible, groundwater in the Unit E aquifer containing 1,4-dixoane in concentrations above 85 parts per billion (ug/l) from migrating east of Wagner Road.

2. The Court's Prohibition Zone Order will continue in force and is incorporated by reference by the Third Amendment and shall now apply to the "Expanded Prohibition Zone" as described in the Third Amendment, provided that the ability of the Parties under Paragraph 9 of

the Prohibition Zone Order to move the Court to alter the boundaries of the Prohibition Zone (and now Expanded Prohibition Zone) is modified as described in Section V.A.2.b. of the Third Amendment with regard to the northern boundaries.

APPROVED AS TO FORM AND SUBSTANCE:



CELESTE R. GILL (P52484)
Attorney for Plaintiffs

MICHAEL L. CALDWELL (P40554)
Attorney for Defendant

IT IS SO ORDERED.

/S/DONALD E. SHELTON

CIRCUIT COURT JUDGE

LF/Gelman/88-34734-CE/Stip and Order Amending Previous Remediation Orders

EXHIBIT

12

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Allen Creek Drain Monitoring

Ann Arbor
Washtenaw County, MI

Prepared for
Gelman Sciences Inc.

for submittal to the

Michigan Department of Environment,
Great Lakes and Energy (EGLE)

April 2021
Project No. 806500

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LIST OF ACRONYMS

EGLE	Michigan Department of Environment, Great Lakes, and Energy
F&V	Fleis & VandenBrink Engineering, Inc.
QA/QC	Quality Assurance/Quality Control
VOC	Volatile Organic Compound
ug/L	micrograms per liter
US EPA	United States Environmental Protection Agency
WCWRC	Washtenaw County Water Resources Commissioner

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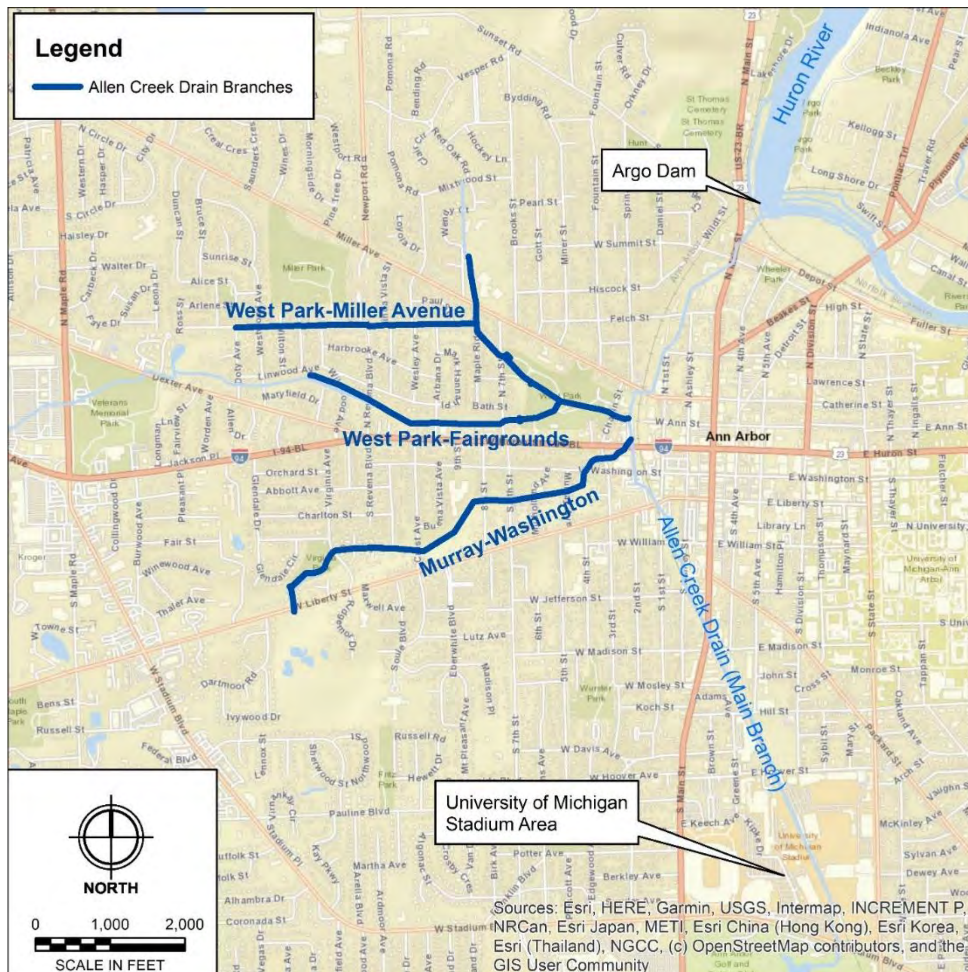
1.0 INTRODUCTION

The Allen Creek Drain is an underground drain that is located predominantly within the City of Ann Arbor, Washtenaw County, Michigan. The Allen Creek Drain and its branches were historically natural drainage areas. The drainage has been engineered into underground drains to more efficiently convey water, facilitate urbanization, and control flooding. The Allen Creek Drain and its branches are managed under the jurisdiction of the Washtenaw County Water Resources Commissioner (WCWRC).

The main branch of the Allen Creek Drain begins near the University of Michigan Stadium area and drains northward to an outlet on the Huron River just south of Argo Dam. There are three branches that originate west of the main branch and flow generally towards the east that are the focus of this proposed work. These branches are shown on Figure 1 and include:

- West Park-Miller Avenue
- West Park-Fairgrounds
- Murray-Washington

Figure 1 – Allen Creek Drain and its Branches



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In 2019, Gelman Sciences, with the cooperation of the WCWRC office implemented an EGLE-designed water sampling program that involved the collection of monthly water quality samples from locations along the three branches of the Allen Creek Drain for a period of six months. Results from this sampling program established that 1,4-dioxane is consistently present in the downstream reach of the West Park-Fairgrounds branch and periodically present at trace levels in the Murray-Washington branch. 1,4-Dioxane was determined not to be present in the West Park-Miller Avenue branch. The findings of this work were summarized by EGLE in the report titled: Allen Creek Drain Sampling Investigation, West Park Area of the City of Ann Arbor, November 2019 (https://www.michigan.gov/documents/egle/egle-rrd-GS-AllenCreekDrainSummaryReport-11-20-19_673069_7.pdf).

Years of mapping of the Gelman plumes, groundwater flow data, and shallow groundwater investigations by Gelman completed in 2016 indicate that the West Park-Miller Avenue and Murray-Washington branches are not in a position relative to the Gelman plumes to receive groundwater containing significant concentrations of 1,4-dioxane related to the Gelman site. In particular, these branches would not be expected to receive concentrations that would approach the threshold set forth in EGLE's updated MS4 Compliance Assistance Document, which would be 280 ug/L for 1,4-dioxane.[1] This interpretation is consistent with the findings of EGLE's 2019 drain sampling investigation, which did not identify 1,4-dioxane in the West Park-Miller Avenue branch and found only trace concentrations of 1,4-dioxane in the Murray-Washington branch. That same conclusion cannot be confirmed with respect to the West Park-Fairgrounds branch without further investigation. As such, the primary focus of this investigation will be on the West Park-Fairgrounds branch.

The objectives of this work plan are as follows:

1. Determine the locations where groundwater is entering the West Park-Fairgrounds branch by:
    a. Examining videos of the drain.
    b. Collecting and analyzing flow data from the drain.
    c. Collecting and analyzing 1,4-dioxane data from the drain.
2. Determine the likelihood of an exceedance of the MS4 compliance option threshold for 1,4-dioxane in the West Park-Fairgrounds branch through the evaluation of mass loading data.
3. Monitor 1,4-dioxane concentrations and other water quality parameters in the West Park-Miller Avenue and Murray-Washington branches to compare to early data.
4. To the extent 1,4-dioxane related to the Gelman site is determined to be entering the Allen Creek Drain/branches, use the collected data to help determine what MS4 compliance option(s) developed by EGLE is the most appropriate and to identify any additional actions to be taken.

2.0 WORK PLAN

2.1 FLOW DATA COLLECTION

F&V proposes to collect flow data at manhole locations along the West Park-Fairgrounds branch between the area of Wildwood Avenue and the confluence with the West Park-Miller Avenue branch, provided these locations are conducive to flow measurements. These proposed locations are shown on Figure 2 below.

[1] This work plan assumes, without acknowledging, that the Allen Creek Drain and its branches are properly classified as MS4 drains.

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Figure 2 – Proposed Flow Monitoring Locations

F&V will first inspect the manhole locations and determine their viability to accommodate flow monitoring equipment. Where the locations are conducive to flow monitoring, F&V will install pressure transducers into the drain channel to measure water level depth in the channels. Data from the pressure transducers will be augmented with periodic channel velocity measurements. These data will be used with drain construction data/drawings to calculate drain flows.

Data will be collected for a period of three months. Depth data will be recorded at a five-minute frequency. The objectives of this work are:

1. to establish the contribution of groundwater into the drain;
2. quantify flows; and

F&V

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3. determine, along with the video information, which segments/areas have groundwater entering the drain and the volume of groundwater entering the drain in those segments/areas.

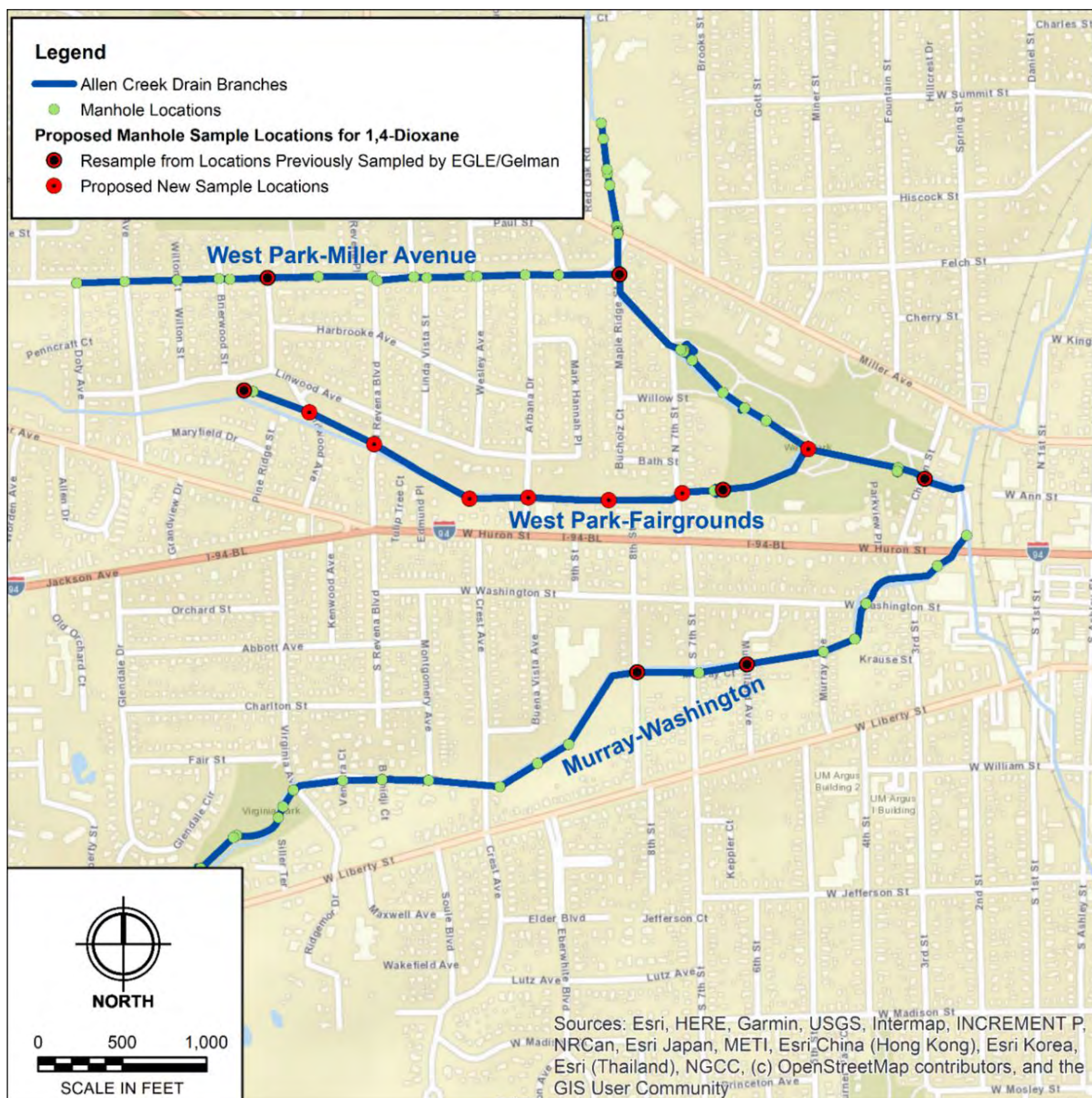
2.2 Precipitation Data Collection

F&V will install an automated rain gauge and data logger in the area of the West Park-Fairgrounds branch. If a secure location for the gauge cannot be found, the rain gauge will be installed at the Gelman Wagner Road facility. The rain gage data will be used to determine potential contribution surface water runoff (vs. groundwater infiltration).

2.3 Water Quality Data Collection

F&V will collect water quality samples from all manhole locations along the West Park-Fairgrounds branch between Wildwood Avenue and the confluence with the West Park-Miller Avenue branch. Additionally, locations previously sampled by EGLE will be resampled. The proposed locations are shown on Figure 3 below.

Figure 3 – Proposed Water Quality Monitoring Locations



Document received by the Washtenaw County Trial Court 04/30/2021.

The samples will be collected monthly for three months (generally equally spaced in time). The following methods will be used:

All sampling locations will be accessed from existing storm sewer manholes. Grab samples of water from the main flow of the storm water conveyance will be collected. The samples will be collected from the manholes directly using an extension rod fitted with a bottle holder at the end, or a nitrile gloved hand if water is accessible at a shallow depth in the manhole. Entering the manhole (confined space entry) will not be conducted. The water sample will be collected by dipping a clean plastic 500 ml bottle with the dip-pole or gloved hand. The sample will be dispensed from the 500 ml collection bottle into laboratory provided sample containers. All personnel handling sample bottles will use nitrile gloved hands. The samples will be transported under chain-of-custody to the Gelman Laboratory and analyzed for 1,4-dioxane using US EPA Method 8260 modified. A selected subset of the samples will also be analyzed for volatile organic compounds (VOCs) by Ann Arbor Technical Services using US EPA method 8260. It is anticipated that EGLE will occasionally split samples with Gelman for analysis by EGLE's environmental laboratory.

The following QA/QC samples will be collected for laboratory analysis of 1,4-dioxane and VOCs:

- Equipment Rinsate Blank – One rinsate blank per sampling event will be collected from the 500 ml plastic bottle using reagent-grade water provided by the laboratory.
- Duplicates – One duplicate sample will be collected per sampling event from a randomly selected location.

2.4 DATA ANALYSIS/REPORTING

Gelman will prepare a report of its findings. The report will include the data collected from this investigation and interpretations of the data. The report will also include recommendations regarding:

1. Longer-term monitoring of the drains.
2. If applicable, investigations of the groundwater outside the drain that would be needed to determine compliance with water quality objectives. Gelman would consider such investigations if the surface water sampling suggests there is a potential for exceedances of the water quality-based standard.

3.0 HEALTH AND SAFETY

F&V will prepare a project specific health and safety plan for this project. F&V staff do not plan on entering manholes for this project. If there becomes a need to enter a confined space, F&V will follow its protocols for confined space entry.

F&V samplers will wear brightly colored reflective vests, safety glasses, and nitrile gloves (when collecting the water samples) during the sample collection events.

F&V will follow required traffic control in areas where traffic control is necessary. This will include obtaining traffic control permits from the City of Ann Arbor (as required).

4.0 SCHEDULE

F&V proposes to implement this investigation within one month of approval by EGLE. F&V will prepare a report of its findings within one to two months of the data collection.

F&V

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EXHIBIT

13

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STATE OF MICHIGAN

DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

April 12, 2021

VIA E-MAIL

Ms. Cheryl L. Newton, Acting Regional Administrator
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Dear Ms. Newton:

SUBJECT: Gelman Sciences, Inc. (Gelman), Site; Washtenaw County, Michigan; USEPA ID No. MID005341813

Enclosed are letters received from, and resolutions by, the city of Ann Arbor, Washtenaw County, and Scio Township seeking listing by the United States Environmental Protection Agency (USEPA) of the Gelman site of contamination in Washtenaw County, Michigan, on the National Priorities List (NPL). As requested by the communities, please reinitiate assessment of the site for the NPL listing process.

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) will work closely with the USEPA and will also ensure that the current remedy continues to protect human health and remains in compliance with Michigan law during the NPL listing process.

If you need further information or assistance, please contact Mr. Mike Neller, Director, Remediation and Redevelopment Division, at 517-512-5859; NellerM@Michigan.gov; or EGLE, P.O. Box 30426, Lansing, Michigan 48909-7926; or you may contact me.

Sincerely,

Liesl Eichler Clark
Director
517-284-6700

Enclosures
cc/enc: Mr. Doug E. Ballotti, USEPA, Region 5
Mr. Matt Ohl, USEPA, Region 5
Ms. Patricia Readinger, Governor's Washington, DC, Office
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Document received by the Washtenaw County Trial Court 04/30/2021.