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August 26, 2009

Kelly A. Roberts, Esq.
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101 E. Huron Street
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RE: Attorney General for the State of Michigan v Gelman Sciences, Inc.
Case No. 88-34734-CE
Our File No. 471-1

Dear Ms. Roberts:

Enclosed are slightly revised copies of the following documents that Defendant Gelman Sciences, Inc. (d/b/a Pall Life Sciences) ("PLS") filed last Tuesday in the above-referenced matter:

1. Motion and Brief to Approve Comprehensive Proposal;

2. Motion and Brief for Approval of Proposed Modifications to Evergreen and Maple Road Remedial Systems; and

3. Brief Regarding Issues In Dispute.

The only changes to these documents from the ones filed last week are specific references to Mr. Fotouhi's Affidavit and other Appendies and correction of a few typographical errors. Also, in the Motion for Approval of Proposed Modifications to Evergreen and Maple Road Remedial Systems, I have added a specific request to approve PLS' Work Plan for the Maple Road-Allison Pipeline that PLS submitted to the MDEQ in November 2008.

I am also enclosing Mr. Fotouhi's Affidavit, which he was able to sign upon his return from England, and two additional Appendices (Nos. 25 & 26), which should be added to PLS' Joint Appendix.

Finally, I wanted to point out that an original copy of PLS' May 4, 2009 Comprehensive Proposal to Modify Cleanup Program was previously provided to the Court. That version has full size (11x17) color copies of some of the maps referenced in PLS' recently filed pleadings. These may be easier to read than the black and white copies attached to PLS' Joint Appendix. Please contact me if you or Judge Shelton would like additional full size/color copies of any of the attachments.

Please do not hesitate to call me if you have any questions regarding the enclosed.

Very truly yours,

ZAUSMER, KAUFMAN, AUGUST,
CALDWELL & TAYLER, P.C.

Michael L. Caldwell

MLC:hlr
Enclosures

Cc: Celeste Gill, Esq. (w/enc)

STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

ATTORNEY GENERAL for the
STATE OF MICHIGAN, et al,
MICHIGAN NATURAL RESOURCES
COMMISSION, MICHIGAN WATER
RESOURCES COMMISSION, and
MICHIGAN DEPARTMENT OF NATURAL
RESOURCES,

Plaintiffs,

Case No. 88-34734-CE

vs

Hon. Donald E. Shelton

GELMAN SCIENCES INC.,
a Michigan corporation,

Defendant.

_____/

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GELMAN SCIENCES INC.'S MOTION TO APPROVE COMPREHENSIVE PROPOSAL TO MODIFY CLEANUP PROGRAM

Defendant, GELMAN SCIENCES, INC., d/b/a Pall Life Sciences ("PLS") asks this Court to approve the modifications to the cleanup program described in PLS' Comprehensive Proposal to Modify Cleanup Program (Appendix 13) for the reasons set forth in the accompanying Brief.

PLS also asks this Court for the opportunity to present live testimony in an evidentiary hearing regarding PLS' Comprehensive Proposal and to cross-examine the witnesses for Plaintiff, to the extent this Court feels that such a hearing would be helpful.

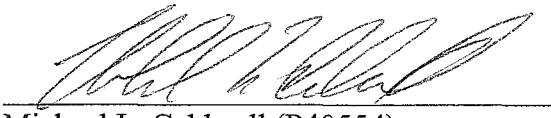
WHEREFORE, PLS asks this Court to:

a. Approve the modifications to the cleanup program described in PLS' Comprehensive Proposal and the accompanying Brief;

b. Schedule an evidentiary hearing at a time and date convenient for the Court, to the extent this Court deems that such a hearing would be helpful in resolving these issues.

Respectfully submitted,

ZAUSMER, KAUFMAN, AUGUST
CALDWELL & TAYLER, P.C.



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Dated: August 18, 2009

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STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

ATTORNEY GENERAL for the
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BRIEF IN SUPPORT OF MOTION TO APPROVE COMPREHENSIVE PROPOSAL

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INTRODUCTION

Defendant, GELMAN SCIENCES, INC., d/b/a Pall Life Sciences ("PLS") has been remediating the groundwater contamination associated with past operations on the 600 South Wagner Road property ("the PLS property") since the late 1980s. This cleanup effort has been a spectacular success given the magnitude and complexity of the task. Unacceptable human exposures to the groundwater contamination have been prevented, and contaminant mass and concentrations have been reduced by orders of magnitude from original levels. Progress has been particularly rapid since this Court intervened in 2000 and allowed PLS to operate the previously installed horizontal well and to increase its overall groundwater extraction four-fold.

Both PLS and the Michigan Department of Environmental Quality ("MDEQ") agree, however, that it is now important to update the cleanup program to ensure that it reflects the progress made to date and the parties' current understanding of the nature and extent of the remaining contamination. Central to this effort is the need to establish a sustainable program with clear and coordinated cleanup objectives. As noted in PLS' Motion to Approve Evergreen/Maple Road Modifications, PLS originally sought permission to implement the relatively straightforward modifications of those systems while the parties jointly developed modifications for the portion of the site west of Wagner Road. The MDEQ, however, required PLS to submit a comprehensive proposal covering all areas of the site before it would consider PLS' original proposal.

PLS submitted the required Comprehensive Proposal to Modify Cleanup Program ("Comprehensive Proposal") on May 4, 2009. Predictably, the MDEQ is now unwilling or unable to approve the Comprehensive Proposal it required PLS to submit. As explained

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below and in the accompanying pleadings, the MDEQ's June 15, 2009 denial of PLS' proposal ("MDEQ Denial") reflects an institutional inability to make the professional judgments necessary to move the cleanup forward rather than any sound technical and/or legal objections.

As set forth in its Evergreen/Maple Road Brief, PLS is frustrated by the fact that the MDEQ's demand that PLS submit a "comprehensive" proposal has thus far prevented PLS from implementing the Evergreen/Maple Road modifications. For that reason, PLS has filed a separate motion seeking approval of those modifications, regardless of what this Court decides to do, if anything, with regard to the rest of the site. PLS, however, strongly believes that the modifications it has proposed for the portion of the remainder of the site will establish a more sustainable and protective cleanup program for this area. PLS asks this Court to approve its Comprehensive Proposal and the modifications described in more detail below.

BACKGROUND FOR MODIFICATIONS

A. PLS Is In Compliance With The Current Cleanup Objectives

PLS submitted the Comprehensive Proposal to improve the current cleanup program so that it could be sustained over the long term, not to avoid cleanup objectives it was not currently satisfying. PLS' original cleanup objectives are spelled out in the October 26, 1992, Consent Judgment ("Consent Judgment"). More recently, this Court issued two Remediation Orders to move the cleanup forward and to address the discovery of the Unit E contamination.[1] This legal framework requires PLS to accomplish the following objectives:

[1] The Remediation Orders include the July 17, 2000, Remediation Enforcement Order ("REO"), which resulted in the subsequent approval of PLS' 5-year plan and the December 17, 2004, Order and Opinion Regarding Remediation of the "Unit E" Aquifer ("the Unit E Order"), which addresses the more recently discovered Unit E contamination.

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Consent Judgment Objectives

a. Prevent the most highly contaminated groundwater in the shallow "C_3" aquifer (designated as the "Core Area") from migrating offsite;

b. Intercept and prevent further migration of the leading edge of the two plumes (the Evergreen/"D_2" plume and the Western plume) that had already migrated offsite by the time the contamination had been discovered;

Unit E Objectives

a. Prevent groundwater in the Unit E aquifer with contaminant levels above 85 parts per billion (ppb) from migrating east of Wagner Road; and

b. Prevent groundwater contamination in the Unit E aquifer above 2,800 ppb from migrating east of Wagner Road.

PLS has consistently satisfied the cleanup objectives listed above by implementing one of the largest and most technologically advanced groundwater extraction and treatment programs in the state, if not the country. (*See* Affidavit of Farsad Fotouhi, ¶¶ 6-13 ("Fotouhi Aff.")

Since the mid-90s, PLS has operated a groundwater extraction and treatment system in the Evergreen Subdivision area to capture the leading edge of contamination in that area. Originally, this system included a treatment unit located within the subdivision, which allowed PLS to inject the treated water back into the aquifer. Later, when additional capacity was required, PLS designed and installed the "Horizontal Well/Deep Transmission Line" – a remediation project that won a prestigious award from the National Groundwater Association. This infrastructure allowed PLS to convey the extracted groundwater back to the Wagner Road treatment system. Despite the operational difficulties with the Allison Street wells chronicled in PLS' Evergreen Brief, PLS has continued to satisfy the Consent Judgment

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capture objective in this area.[2] PLS' proactive request to modify the Evergreen area objective to increase the program's long-term sustainability should not detract from the fact that PLS has successfully prevented further expansion of the Evergreen plume for more than 20 years.

PLS has also more than satisfied the Consent Judgment's "Core Area" objective. Since 1997, PLS has extracted groundwater from 11 extraction wells on or near the PLS Property to remove and contain the highest contaminant levels. This objective has, frankly, been rendered obsolete by the work PLS has undertaken to implement this Court's REO. The REO and the authority given to PLS under the related 5-Year Plan allowed PLS to begin operating the previously installed Horizontal Well and install 11 new extraction wells on or near the PLS property. This additional infrastructure allowed PLS to increase its overall purge rate from approximately 300 to 1,200-1,300 gpm while continuing to contain the leading edge of the offsite plumes.

PLS' efforts have dramatically reduced contaminant concentrations and mass throughout the site. PLS' proprietary treatment systems, including its current state-of-the-art ozone treatment system, have successfully treated 5.1 billion gallons of highly contaminated groundwater to trace levels, removing over 80,000 pounds of 1,4-dioxane. The dramatic decrease in concentrations attributable to the effort mandated by the REO and PLS' 5-Year Plan is illustrated in Attachment 3 to the Affidavit of James Brode, Jr. ("Brode Aff."), which compares groundwater concentrations in the D_2/C_3 aquifers before adoption of the 5-Year Plan to current levels. PLS has achieved similar decreases in concentrations in the subsequently discovered Unit E plume. (Brode Aff., Attachment 3). Another measure of the degree to which PLS has decreased concentrations is the 1,4-dioxane concentrations observed

[2] 1,4-dioxane has never been detected above a few parts per billion in the MDEQ-approved downgradient performance monitoring wells.

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in the combined influent from all of PLS' extraction wells that is collected in PLS' "Red Pond" before treatment. In 1997, when groundwater extraction began on the PLS Property, Red Pond concentrations exceeded 21,000 ppb; currently, Red Pond concentrations are less than 550 ppb. (*See*, Fotouhi Aff., ¶ 32).[3]

More recently, PLS has invested significant resources and technical expertise to comply with the Court's Unit E Order objectives. PLS has designed, constructed and operated active groundwater extraction and treatment systems to accomplish the capture objectives at both Maple and Wagner Roads. The complex remedial systems PLS has designed, installed and operated have successfully satisfied the cleanup objectives at these locations. (*See* Fotouhi Aff. ¶¶ 6-13).

B. Current Understanding of Site Conditions and Need for Modified Program.

The parties have now realized that despite the tremendous progress that has been achieved in reducing contaminant levels, the goal of reducing levels below the DWC cannot be achieved in the foreseeable future given the limits of the available pump and treat remedial technology.[4] This barrier to achieving the parties' ultimate goal of reducing concentrations below the DWC is reflected in the slopes of the concentration curves for PLS' extraction wells. The reduction in concentrations in almost every onsite purge well has flattened out and become asymptotic at levels well above the DWC. (Appendix 13, Figure 2). The United

[3] Although PLS was unable to achieve the REO's goal of reducing contaminant levels in the aquifers below the drinking water criterion ("DWC") within five years, contaminant concentrations throughout the affected area and the risk to the public have been significantly reduced. The "failure" to achieve the REO's five year cleanup goal is due to the limits of pump and treat technology, not PLS' effort or technical competence. No one disputes that PLS has faithfully carried out this Court's instruction to significantly accelerate to pace of the cleanup.

[4] As this Court will recall, PLS has expended significant resources in attempts to develop other types of remedial technologies that PLS might use to further advance the cleanup. For instance, PLS overcame incredible resistance from the MDEQ and citizen groups to test various forms of in situ remediation (e.g., ozone, hydrogen peroxide, Fenton's Reagent). Unfortunately, none of the potential technologies PLS has identified and tested has worked in the field to the degree that it could provide meaningful help.

States Environmental Protection Agency ("USEPA") and others have published materials that confirm that this is a common characteristic of pump-and-treat remedial systems, particularly in areas with complex geology like that present at the Gelman site and a hydrophilic contaminant like 1,4-dioxane.

The parties also understand that their previous approach to the cleanup on an aquifer-by-aquifer basis needs to be modified. Recent investigations have revealed that the degree of separation between aquifers in some areas is not as great as previously believed. For instance, in the Wagner Road area, there is no confining layer (aquitard) between the Unit E and D_2 aquifers, which has complicated PLS' task of confirming (to the MDEQ's satisfaction) that it is in compliance with the Unit E Order's Wagner Road capture objective. (*See* Appendix 15, p. 6). In the Evergreen area a separating layer between the aquifers is generally present, but just south of the Evergreen area there is a shallower portion of the Unit E aquifer (sometimes referred to the E_1). This portion of the Unit E corresponds in depth and geological characteristics to the D_2 and is hydraulically connected to that unit. The reality is that the contamination in the E_1 and D_2 is really part of the same plume. Because the site geology is better understood, the differences between the cleanup objectives established for each aquifer now appear to be arbitrary in these areas. Cohesive cleanup objectives based on the parties' current understanding of the site rather than outdated aquifer designations will result in a more efficient program.

Finally, the parties recognize (or at least PLS does) that the cleanup program needs to be restructured in a way that is both protective of the public and sustainable from an enforcement standpoint. It is simply ludicrous for the parties to continue to expend the resources, time, and effort that they have both spent on fighting over whether certain cleanup

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objectives have been met if alternative, equally protective objectives can be substituted. The primary example of the parties' misallocation of resources in this regard is the Evergreen capture objective. PLS has been operating a groundwater extraction system in this area since the mid-1990s. Yet the MDEQ still contends that PLS has not defined the extent of the contamination in this area to the degree necessary for the MDEQ to conclude that the Consent Judgment objective is being met. (*See* MDEQ June 23, 2008 Correspondence and PLS August 7, 2008 response, Appendices 7 and 8 respectively, for a flavor of both the level of disagreement and the amount of resources being allocated to these issues.) Similar disputes have already arisen from the Unit E mid-plume capture objective at Wagner Road. (*Id.*) Modifying these cleanup objectives is necessary to avoid costly legal disputes, which require scarce technical and legal resources.

ARGUMENT

I. PLS' Comprehensive Proposal Should be Approved

A. PLS' Comprehensive Proposal Will Simplify the Cleanup Program

PLS' Comprehensive Proposal improves the current program by simplifying the legal structure of the cleanup program and reducing the number of remedial systems and cleanup objectives. Under the Comprehensive Proposal, there would only be two remedial systems defined by geography and the presence/absence of an institutional control: (1) the area west of Wagner Road where no property or use restrictions are currently in place (referred to as the "Western Area"); and (2) the area east of Wagner Road, including the area encompassed by the Prohibition Zone (referred to as the "Eastern Area"). (Appendix 13, p. 9). Each area has straightforward cleanup objectives that are intended to increase the sustainability and

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effectiveness of the overall program. These changes address the MDEQ's oft-stated need for clear and enforceable cleanup objectives that the public can understand. (Appendix 15, p. 6.)

B. The Western Area Modifications Will Improve the Cleanup Program[5]

The technical and geological limits discussed above will prevent the parties from achieving everybody's goal of reducing 1,4-dioxane levels below the DWC in a reasonable time frame. Consequently, the parties have agreed to refocus their efforts on protecting the public by preventing unacceptable exposures to the groundwater (although obviously they disagree as to exactly what steps are necessary). Fortunately, this Court has already put the Prohibition Zone in place, which is the type of institutional control that has increasingly been used to protect the public in situations where, as here, simply reducing the contaminant to acceptable levels is not possible.[6] PLS' modifications are focused on the work needed to: (a) ensure that the Prohibition Zone will continue to effectively prevent unacceptable exposures to the groundwater contamination, regardless of what aquifer the contamination is in; and (b) reduce the amount of contamination that ultimately vents to the Huron River.

As detailed in PLS' Comprehensive Proposal, PLS is proposing the following modifications to the cleanup program for the Western Area:

1. Mass Reduction and Increased Wagner Road Extraction

PLS is proposing to focus its efforts on reducing mass and concentrations in the areas west of Wagner Road where relatively high contaminant masses still exist. This includes the MW-94 location near Wagner Road discussed below. In total, PLS plans to operate nine extraction wells in the Western Area. PLS projects that this effort will remove virtually the

[5] The elements of the proposed Eastern Area modifications are described in PLS' Evergreen Brief and will not be repeated here.

[6] Under Part 201, parties are entitled to address their remedial responsibilities by preventing unacceptable exposures with restrictive covenants, institutional controls or engineering controls for any reason, not just when it is not possible to achieve the cleanup criteria through active remediation. MCL 324.20120b.

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same amount of mass as the current program over the next ten years, but in a much more efficient and logical manner. (Brode Aff., ¶¶ 44-45).

PLS will continue to operate each of these wells as long as each well is productive in terms of reducing contaminant mass and concentrations. The criterion PLS will use to determine whether a well is productive is the 1,4-dioxane concentration in the water being extracted by each well. PLS is proposing to operate these wells so long as the 1,4-dioxane concentration of the purged water remains above 500 ppb. If the concentration of an extraction well falls below 500 ppb, PLS will evaluate whether the well can be operated effectively (i.e., with concentrations above 500 ppb) at a lower extraction rate. Wells that are not capable of removing greater than 500 ppb are simply not productive enough to serve as an effective mass removal well. This effort will efficiently reduce contaminant masses and concentrations that will enter the Prohibition Zone to levels that will both ensure that the Prohibition Zone is protective and reduce the contaminant loading to the Huron River.

These changes include replacing the Unit E Order's objective of preventing concentrations above 85 ppb from migrating east of Wagner Road in the Unit E aquifer with the unified goal of reducing concentrations/mass entering the Prohibition Zone, regardless of the aquifer designation. PLS will install a new extraction well in the area of MW-94 near Wagner Road where high concentrations have been detected in what has traditionally been understood to be the D_2 aquifer. This extraction well will serve to cut off groundwater contamination that would otherwise migrate to the Evergreen area. PLS will operate the new extraction well together with TW-18 and the onsite extraction wells to dramatically reduce the mass of contaminants and groundwater concentrations migrating into the Eastern Area throughout the vertical cross section of the entire aquifer system.

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This focused effort will provide multiple benefits. Although PLS vigorously disputes that there is any uncertainly regarding the fate of groundwater contamination and whether the plume will expand beyond the Prohibition Zone boundaries, reducing the mass that enters the restricted area should help assuage the MDEQ's concerns in this regard. It will also provide even more confidence that PLS will be able to satisfy its obligation to prohibit groundwater contamination above 2,800 ppb from migrating east of Maple Road. Finally, it will also ultimately reduce contaminant loading to the Huron River well beyond what is legally required.

The MDEQ suggests that a "compelling case" can be made for requiring PLS to not only continue capturing Unit E groundwater contamination above the DWC, but also to apply this requirement to the shallower D_2 plume as well. (Appendix 15, pp. 4, 6).[7] Such a requirement would not only provide no ascertainable public health benefits, but it would also create an enforcement quagmire that would benefit no one other than PLS' counsel.

PLS has not proposed to prevent a specific concentration from migrating east of Wagner Road for both legal and practical reasons. From a legal perspective, there is no public health benefit to be gained by reducing concentrations migrating into the Prohibition Zone at all: The Prohibition Zone already effectively prevents any unacceptable exposures to groundwater contamination above the DWC. Once the drinking water pathway is eliminated, the groundwater is "safe" from a human exposure perspective so long as 1,4-dioxane concentrations are below **1,700,000 ppb**, which is the level the MDEQ has determined to be

[7] The MDEQ does not suggest how PLS would satisfy this objective within the restraints of its NPDES discharge limitation.

safe for direct human contact.[8] The highest concentrations at the site are orders of magnitude below that criterion. Therefore, imposing a requirement that PLS capture any specific contaminant concentration, whether it be 85 ppb or 500 ppb or something else, would not increase the level of protection to the public.

From a practical perspective, requiring PLS to capture any specific groundwater concentration at Wagner Road would create an enforcement nightmare even more complex and irresolvable than the Evergreen area. First, the MDEQ would undoubtedly require further delineation along Wagner Road to determine the precise location of the 85 ppb contour vertically throughout the aquifer system. The MDEQ has already demanded further delineation along Wagner Road in its June 23, 2008 correspondence. (Appendix 7).

Second, as the parties have realized, it is next to impossible to confirm compliance with a "mid-plume capture" objective, particularly in the Wagner Road area. The MDEQ's standard method of confirming a capture objective is to monitor wells installed downgradient from the point where the plume is to be contained. This procedure will not work when the goal is to capture a groundwater contamination in the middle of the plume. In this case, any wells installed downgradient of Wagner Road already will have levels above the DWC, making it virtually impossible to confirm (at least from the MDEQ's perspective) whether the objective is being met. The inherent problems of crafting a performance monitoring plan to confirm a mid-plume capture objective are exacerbated in this case by the access issues east of Wagner Road. Much of this area consists of small lakes and wetlands that make it

[8] Even the 2,800 ppb criterion that is protective of the aquatic receptors in the Huron River would be a conservative threshold because the contamination would naturally diffuse and dilute before the plume reaches the nearest surface water receptor (Huron River) and because PLS has the ability to capture groundwater contamination above 2,800 at Maple Road. Such a criterion would also be largely irrelevant because there are only isolated pockets of groundwater contamination in the Western Area that have concentrations approaching this criterion.

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impossible to place performance monitoring wells in useful locations. The MDEQ acknowledges these "practical difficulties" in connection with evaluating the Unit E Wagner Road objective. (Appendix 15, p. 6).

Thus, imposing the requirement that PLS capture any specific groundwater concentration – whether it be 85 ppb, 500 ppb or some other number – would both delay implementation of the enhanced Wagner Road extraction while PLS attempted to satisfy the MDEQ's delineation requirements and lead to inevitable legal disputes regarding compliance. PLS' proposal to reduce the mass of contamination migrating into the Prohibition Zone addresses the MDEQ's concerns regarding the uncertainty of the fate of the plume and at the same time avoids all of these technical and legal disputes inherent in a capture cleanup objective.

2. Containment Objective.

PLS will be responsible for preventing the areas impacted by contaminant concentrations of 85 ppb or greater from expanding in directions that do not lead to the Prohibition Zone east of Wagner Road. As explained in Section I.C below, meeting this objective should not require any groundwater extraction at all because groundwater in the area naturally flows east from the site, into the Prohibition Zone (that is why the leading edge of the Evergreen and Unit E plumes are both east of Wagner Road). PLS will, however, continue to operate any groundwater extraction wells (or install new wells) that are necessary to prevent the groundwater contamination that remains west of Wagner Road from migrating in another direction, even if the concentrations in any such well fall below the mass removal threshold of 500 ppb. This will prevent any additional properties from being affected by the groundwater contamination.

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3. Performance Monitoring.

PLS' Comprehensive Groundwater Monitoring Plan ("Monitoring Plan") attached to its Comprehensive Proposal identifies the monitoring wells that will be used to evaluate whether the contaminant plume has expanded in unacceptable directions. PLS supplemented its Monitoring Plan with its June 3, 2009 Plan for Verifying Protectiveness of Proposed Remedial Modifications ("Verification Plan"). (Appendix 14). PLS will further supplement its Monitoring Plan to include specific "compliance" monitoring points so that the MDEQ can satisfy itself that it will be in a position to enforce PLS' commitment in this regard. (*See,* Fotouhi Aff. ¶¶ 22-26).

4. Institutional Controls.

At some point in the future, contaminant levels will be reduced to the point where PLS is no longer required to operate any of the extraction wells to meet either the containment or the mass removal objectives. Even after this occurs, areas with contamination above the DWC will likely remain. PLS understands, however, that it cannot terminate active remediation of these areas unless a restrictive covenant or an institutional control is in place to prevent unacceptable exposures to the groundwater on any affected properties. Consequently, PLS will commit to continuing groundwater extraction in the Western Area until either levels are below the DWC or such restrictive covenants or other acceptable institutional controls are in place.

The MDEQ has demanded that PLS obtain these restrictive covenants from the affected property owners now, years before they will become relevant or necessary. While it is true that the areal extent of the groundwater contamination above the DWC has been virtually unchanged since groundwater extraction began in 1997 (Appendix 15, p. 6), this may

not be true in the future. Assuming that the concentration reduction curves of PLS' groundwater extraction wells do not unexpectedly improve dramatically, PLS will be actively remediating the Western Area for many years. There are a number of areas where there are concentrations just above the DWC that may be reduced to safe levels by the time active remediation might be terminated. There is no reason to guess which properties will ultimately be affected or to restrict all of the properties that are now affected. Moreover, seeking permission from the currently affected property owners to put a restriction on their properties in the future would mean little if ownership changes in the interim.

C. The Proposed Modifications to the Western Area are Feasible

The MDEQ's primary concern with PLS' Western Area proposal is that the MDEQ assumes that groundwater contamination will expand in unacceptable directions once the mass removal threshold is achieved and groundwater extraction is terminated. Specifically, the MDEQ claims that "groundwater contamination migrated to the west and northwest prior to any extraction and those migration pathways are expected to resume upon termination of extraction." (Appendix 15, p. 3). This would only be a concern if the entirety of the parties' remedial investigation of the site prior to commencement of groundwater extraction in 1997 is ignored.

As explained by Mr. Brode, the hydrogeologist in charge of much of the early site work, the data gathered over the last 20 years demonstrate that the proposed Western Area remedial objective of preventing expansion is feasible. (Brode Aff., ¶¶ 31-34.) He explains that groundwater extraction is not required to contain the migration pathways to the west and northwest that the MDEQ is concerned about. Rather, even before groundwater extraction began, the natural downward hydraulic gradients caused any contamination in the shallower

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C_3 aquifer that initially migrated a short distance north and west from the source areas to flow down into the lower D_2 and Unit E aquifers. These downward gradients prevented the historically very high concentrations of groundwater contamination from expanding beyond the current extent of contamination. Once the contamination migrated into the deeper D_2 and Unit E aquifers, the strong groundwater flow carried the contamination to the east, where we now find the leading edge of the D_2 and Unit E plumes. This well-documented natural groundwater flow pattern has historically contained the migration of contamination to the north and west and directed the plume east of Wagner Road. Therefore, expansion of the plume beyond any areas where it historically migrated is extremely unlikely, even if all groundwater extraction is eventually terminated.

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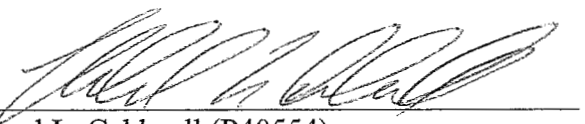
CONCLUSION

For the above-stated reasons, PLS asks this Court to approve PLS' Comprehensive Proposal and the modifications described in that proposal. As noted in PLS' motion, PLS would welcome the opportunity to present its proposed modifications to the Court in an evidentiary hearing if this Court determines such a proceeding would be helpful.

Respectfully submitted,

ZAUSMER, KAUFMAN, AUGUST
CALDWELL & TAYLER, P.C.



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Dated: August 18, 2009

STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

ATTORNEY GENERAL for the
STATE OF MICHIGAN, et al,
MICHIGAN NATURAL RESOURCES
COMMISSION, MICHIGAN WATER
RESOURCES COMMISSION, and
MICHIGAN DEPARTMENT OF NATURAL
RESOURCES,

Plaintiffs,

Case No. 88-34734-CE

vs

Hon. Donald E. Shelton

GELMAN SCIENCES INC.,
a Michigan corporation,

Defendant.
_____/

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GELMAN SCIENCES INC.'S MOTION FOR APPROVAL OF PROPOSED MODIFICATIONS TO EVERGREEN AND MAPLE ROAD REMEDIAL SYSTEMS

Defendant, GELMAN SCIENCES, INC., d/b/a Pall Life Sciences ("PLS") through its attorneys, ZAUSMER, KAUFMAN, AUGUST, CALDWELL & TAYLER, P.C., and WILLIAMS ACOSTA, asks this Court to approve PLS' proposed modifications to the Evergreen and Maple Road remedial systems described in the Brief in support of this Motion.

1. As explained in the attached Brief, PLS has proposed modifications to the Evergeen and Maple Road portions of the current cleanup program that are necessary to address operational difficulties regarding these systems. PLS did not propose any specific modifications with regard to the portion of the site west of Wagner Road, but rather suggested that the parties meet to jointly develop a strategy for arriving at appropriate modifications to that area. PLS advised MDEQ that it did not believe that the straight-forward modifications regarding the Evergreen Subdivision and Maple Road should be delayed while the parties tackle the more difficult Wagner Road issues.

2. The Michigan Department of Environmental Quality ("MDEQ") has informed PLS that it would not consider the proposed modifications to the Evergreen and Maple Road systems unless they were included in a comprehensive proposal that addressed the entire site.

3. After several subsequent meetings with the MDEQ, PLS acquiesced to the DEQ's requirement that any proposed modifications to the cleanup program must address the entire site.

4. Just as PLS feared, inclusion of proposed modifications regarding the portion of the site west of Wagner Road, has complicated and slowed down the process of obtaining approval for the necessary modifications to the Evergreen and Maple Road remedial systems.

5. Consequently, PLS is seeking this Court's approval of the necessary modifications to the Evergreen and Maple Road remedial systems that had originally been

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submitted over a year ago separate from, but without prejudice to, the accompanying Motion for approval of PLS' entire comprehensive remedial proposal.

WHEREFORE, PLS asks this Court to approve the remedial modifications described in the accompanying Brief regarding the Evergreen and Maple Road remedial systems, including PLS' Work Plan for Maple-Allision Pipeline, attached as Appendix 25 to PLS Joint Appendix.

Respectfully submitted,

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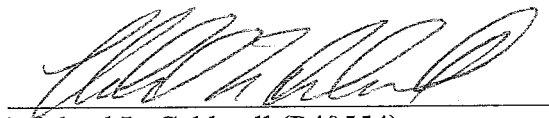
CALDWELL & TAYLER, P.C.



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Dated: August 18, 2009

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BRIEF IN SUPPORT OF MOTION FOR APPROVAL OF PROPOSED MODIFICATIONS TO EVERGREEN AND MAPLE ROAD REMEDIAL SYSTEMS

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INTRODUCTION

Defendant, GELMAN SCIENCES, INC., d/b/a Pall Life Sciences ("PLS") has been remediating the groundwater contamination associated with past operations on the 600 South Wagner Road property ("the PLS property") since the late 1980s. As discussed in PLS Brief in Support of Motion to Approve Comprehensive Proposal to Modify Cleanup Program ("Comprehensive Brief"), this cleanup effort has been a spectacular success given the magnitude and complexity of the task. Both PLS and the Michigan Department of Environmental Quality ("MDEQ") agree, however, that it is now important to update the cleanup program to ensure that it reflects the progress made to date and the parties' current understanding of the nature and extent of the remaining contamination. Central to this effort is the need to establish a sustainable program with clear and coordinated cleanup objectives.

PLS originally sought permission to implement relatively straightforward modifications of the Evergreen Area and Maple Road systems while the parties jointly developed modifications for the portion of the site west of Wagner Road. The MDEQ, however, required PLS to submit a comprehensive proposal covering all areas of the site before it would consider PLS' original proposal. As PLS feared, the MDEQ's demand that PLS submit a comprehensive proposal has only resulted in delaying approval of the more pressing modifications to the Evergreen and Maple Road systems.

For that reason, PLS is now seeking approval of the Evergreen and Maple Road modifications described below, regardless of what modifications this Court decides to make, if any,

with regard to the rest of the site. As set forth below, these modifications are necessary and appropriate.

FACTUAL BACKGROUND

A. Cleanup Objectives/Infrastructure for Evergreen and Maple Road Systems.

The October 26, 1992 Consent Judgment ("Consent Judgment") established the cleanup objective for the "Evergreen Subdivision Area System." Section V.A.1 of the Consent Judgment requires PLS to capture the leading edge of the contamination above the drinking water criterion in the area of the Evergreen Subdivision to prevent it from migrating further east. This objective was established at a time when essentially all of the properties in the Evergreen Subdivision and downgradient areas were serviced by private drinking water wells.

To meet this objective, PLS currently operates two extraction wells (LB-1 and LB-3) on Evergreen Street, roughly in the middle of the Evergreen Subdivision, and one extraction well (AE-1) located further east on Allison Drive. PLS originally operated a treatment system within the Evergreen Subdivision and injected the treated groundwater into the Unit E aquifer. In part because of the risks associated with operating an industrial treatment system within a residential subdivision, PLS installed the horizontal well and deep transmission line in approximately 1998. The deep transmission line connected the Evergreen extraction wells to PLS' Wagner Road treatment system. This allowed PLS to transport up to 200 gallons per minute (gpm) of water from the Evergreen area to the Wagner Road treatment facility. This Court's July 14, 2000 Remediation Enforcement Order ("REO") established a minimum combined purge rate for the Evergreen extraction wells of 200 gpm. Thus, PLS is currently utilizing 100% of the transmission line's capacity.

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The Maple Road remedial system was installed to accomplish the cleanup objective established by this Court's December 17, 2004 Order and Opinion Regarding Remediation of the Contamination of the "Unit E" Aquifer (the "Unit E Order"). The Unit E Order required PLS to prevent groundwater contamination with concentrations above 2,800 parts per billion (ppb) from migrating east of Maple Road. To accomplish this objective, PLS has installed an extraction well in the parking lot of the Maple Village Shopping Center, just west of Maple Road. The groundwater is extracted, then transported by shallow pipelines to a nearby mobile treatment unit located north of the extraction well. After ozone treatment, the treated water is then reinjected back into the aquifer via two injection wells located north and south of the extraction well. PLS has installed a third injection well in an attempt to address operational problems associated with the first two injection wells. Groundwater contamination with concentrations above 2,800 ppb of 1,4-dioxane has not reached the Maple Road extraction well.

B. Operational Difficulties Requiring Program Modifications.

1. Evergreen System Problems

PLS has experienced operational difficulties with the Evergreen System that center around the leading edge extraction well on Allison Street. (*See* Affidavit of Farsad Fotouhi, ¶¶ 14-21("Fotouhi Aff.")). When first installed, AE-1 yielded 50 gallons per minute. The amount of groundwater PLS can extract from the Allison Street location has declined steadily over the years due to falling water levels and the relatively poor geology of the aquifer in the

Allison area.[1] PLS is only able to withdraw 15 gpm from the current Allison Street well. PLS has attempted to address the falling purge rates of the original Allison Street well (AE-1) by replacing the failing well with a new well on two separate occasions. However, the current Allison Street well, AE-3, is experiencing the same problems as its predecessors.

Disagreements regarding PLS' inability to sustain the minimum purge rate required by the MDEQ and whether the reduced purge rate is sufficient to capture the leading edge of the plume have been the source of repeated and wasteful technical and legal disputes between PLS and the MDEQ. In 2001, the MDEQ attempted to fine PLS when the AE-1 purge rate fell below the required rate despite a subsequently submitted capture zone analysis ("CZA") demonstrating the reduced rate was sufficient to capture the leading edge.[2] The documentation associated with the parties' technical disputes regarding whether PLS is continuing to meet its capture obligation at this location is simply too voluminous to attach to this brief.

Most recently, in April, 2007, the maximum purge rate of AE-3 fell below the MDEQ-required minimum purge rate of 25 gpm. PLS was forced to declare that circumstances constituting a "force majeure" existed because it was no longer possible to maintain the rate determined by the

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[1] The extraction wells located on Evergreen Street (LB-1, LB-2 and LB-3) have served their mass removal function well for many years with only routine maintenance. The disparity between the performance of the LB wells and the wells located on Allison Street is due in large part to the poor aquifer conditions in the Allison Street area. Because of the poor aquifer conditions, operation of the Allison Street wells creates a greater and steeper "drawdown". This effect, combined with falling water levels, causes air to be drawn into the screen of the extraction well. The presence of air in the screen creates "bio-fouling" that clogs the screens and creates even greater problems. In order avoid/minimize these conditions, PLS is forced to reduce its purge rates.

[2] Applying the standards for review set forth in the Consent Judgment, this Court found that there was a "substantial basis" for PLS' defense to this claim and did not impose the stipulated penalties.

MDEQ to be necessary to capture the leading edge of the Evergreen plume. (Appendix 1).[3] The MDEQ denied PLS' force majeure claim, asserting that PLS could, among other things, install and simultaneously operate a system of four extraction wells along Allison Street, each of which could theoretically extract a few gallons per minute. (Appendix 2). PLS was thus forced to file a Petition for Dispute Resolution with this Court, and the MDEQ again sought stipulated penalties. PLS' subsequent CZA established that a reduced purge rate of 15 gpm was sufficient to capture the leading edge of the plume, and the MDEQ ultimately agreed to waive its claim for stipulated penalties. In exchange. PLS agreed to further investigate the Evergreen area to, among other things, establish PLS' compliance with the Consent Judgment objective for this location.

Although PLS spent all fall and winter of 2007-2008 investigating this area, PLS has been unable to satisfy the MDEQ that it is in compliance with its Consent Judgment obligation. As indicated in correspondence dated June 23, 2008, the MDEQ believes that PLS' investigations have not established PLS' compliance. (Appendix 7, pp. 1-4). Although PLS rebutted the MDEQ's assertions in a lengthy technical and legal response dated August 7, 2008 (Appendix 9), it is clear that the technical and legal disputes regarding PLS' ability to comply with the existing Consent Judgment obligation for the Evergreen area will continue to be the source of ongoing legal and technical disputes. As recent as July 20, 2009, the MDEQ informed PLS that it would file a motion seeking to enforce this obligation. (Appendix 18). Furthermore, while PLS has been able to coax 15 gpm out of AE-3, PLS does not believe that continuing to capture the leading edge of the

[3] In that correspondence, PLS noted that there were no data that suggested that the containment objective was not being met by the reduced rate PLS was able to maintain.

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contamination at this location is practical in the long term. (*See*, Fotouhi Aff., ¶ 16).[4] For these reasons, PLS is seeking to modify its obligations at this location.

2. Maple Road Sustainability Issues

PLS began operating the Maple Road system shortly after entry of this Court's Unit E Order. (*See*, Fotouhi Aff., ¶ 15). PLS did so even though groundwater concentrations above 2,800 ppb have not yet reached Maple Road (i.e., PLS is not required to operate this system at this point). PLS' early operation of the Maple Road system, however, has provided crucial information regarding the sustainability of the existing system. It has become clear that PLS' plan to inject treated groundwater back into the aquifer north and south of the Maple Road extraction well (TW-19) is not reliable. Within 1 month of beginning operations, PLS began experiencing problems with the injection wells. After numerous attempts to rehabilitate the original two wells failed to improve their performance, PLS installed a third injection well, IW-5, in the area of IW-3. Unfortunately, PLS began experiencing similar operational problems with IW-5 shortly after it began operating. Consequently, although the extraction well and mobile treatment units have performed extremely well, the sustainability of the existing Maple Road system is poor. PLS has only been able to consistently inject approximately 50 gpm, which may not be sufficient to capture the plume of groundwater contamination above 2,800 ppb when and if it reaches Maple Road. Given the variable reliability and capacity of the injection wells in the Maple Road area, PLS believes it is prudent to install a more robust system in this area. (*See*, Fotouhi Aff., ¶ 19).

[4] Nor is there is a practical location at which to capture the leading edge further east of Allison Street, primarily because the Unit E contamination plume is only a few hundred feet downgradient of Allison Street.

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C. Elements of PLS' Remediation Proposal.

PLS has proactively sought to address the operational problems experienced by both the Maple Road and Evergreen remedial systems. In June 2008, PLS submitted its Proposed Modifications To Cleanup Program. (Appendix 6). The proposed modifications included the following elements:

- Installation of a pipeline connecting the Maple Road system to the transmission line. The proposed pipeline would run from the Maple Road groundwater extraction system to the Evergreen Subdivision, where it would be connected to the existing deep transmission line. This would allow PLS to convey the groundwater extracted from the Maple Road extraction well back to the Wagner Road facility for treatment. This modification would permit PLS to maintain the current groundwater and reinjection disposal method as a backup system rather than as the front line method.

- Expansion of the Prohibition Zone. Because compliance with the existing Consent Judgment cleanup objective for the Evergreen system requires PLS to fully utilize the 200 gpm capacity of the deep transmission line, modifications to the Evergreen system cleanup objective would be necessary before PLS could transmit groundwater from the Maple Road area back to the Wagner Road treatment system. Consequently, PLS proposed to expand the existing Prohibition Zone to include the Evergreen Subdivision area. (Appendix 13, Figure 4). Consistent with the Unit E Order requirements, PLS would replace the six existing private drinking water wells in the Evergreen area with connections to municipal water.

- Modification of Evergreen containment cleanup objective. The Consent Judgment cleanup objective for the Evergreen system of capturing the leading edge of contamination above 85 ppb would be eliminated. This would allow PLS to terminate groundwater extraction from the Allison Street area and to reduce purging from the LB wells. Remnants of the Evergreen plume in this area would migrate east and merge with the Unit E plume, ultimately venting to the Huron River within the expanded prohibition zone. PLS would continue to be responsible for preventing contaminant concentrations above 2,800 ppb from migrating past Maple Road in this area as well.

- Continued Evergreen groundwater extraction. PLS has proposed to continue to operate the LB wells at reduced levels in order to reduce mass and concentration levels. Operation of these wells would ensure that groundwater concentrations migrating past Maple Road would remain well below 2,800 ppb.

- Installation of additional monitoring wells. PLS proposed to install (and subsequently has installed) monitoring wells at 3 additional locations within the Evergreen Subdivision area.

- Continued operation of Maple Road extraction well. Upon installation of the Maple Road/Evergreen pipeline, PLS would continue to operate the Maple Road extraction well (TW-19) as necessary to ensure that contaminant concentrations above 2,800 do not migrate past Maple Road (and to remove mass as appropriate).

- Prohibition Zone monitoring. PLS proposed to expand its downgradient and monitoring program for the Unit E plume to include the expanded prohibition zone area.

These modifications would serve a dual purpose of both providing a reliable water treatment/disposal method for the Maple Road system and providing a sustainable and more protective remedy for the Evergreen area. (*See*, Fotouhi Aff., ¶¶ 14-21).

D. The MDEQ Has Prevented PLS from Implementing Necessary Modifications.

PLS explicitly asked the MDEQ to allow PLS to move forward with its proposed modifications to the Evergreen and Maple Road systems while the parties continued to discuss potential changes to the portion of the site located west of Wagner Road. (Appendix 6, p. 3). PLS did not believe the straight-forward modifications necessitated by the significant operational difficulties associated with the Evergreen and Maple Road systems should be delayed while the parties attempted to resolve the Wagner Road issues. PLS informed the MDEQ that it would like to begin construction of the proposed Maple Road/Evergreen pipeline before the end of 2008.[5] PLS also believed that it would be better for the parties to collaborate in developing an acceptable approach to the Wagner Road issues than to have the MDEQ respond to a specific proposal from PLS. (Appendix 6, p. 3).

[5] Although the MDEQ has said it would allow PLS to install the proposed pipeline, it specifically denied PLS permission to use it. Not surprisingly, the City of Ann Arbor has indicated that it would not grant PLS permission to tear up its right-of-ways to install a pipeline unless the MDEQ approved its use. (*See*, Fotouhi Aff., ¶ 21).

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Unfortunately, the MDEQ responded to PLS' proposed Evergreen/Maple Road modifications by demanding that PLS also provide comprehensive modifications that would address the portion of the site west of Wagner Road. As a result of the MDEQ's refusal to approve the proposed Evergreen/Maple Road modifications, PLS has been prevented from making the proposed modifications to improve the reliability of those systems. Rather, PLS has been forced to put these prudent changes on hold while the parties debated the specifics of various comprehensive proposals. PLS is seeking approval of these changes separately from its proposal to modify the area west of Wagner Road to ensure that these important modifications are not further delayed.[6]

LEGAL ARGUMENT

A. Approval of the Evergreen/Maple Road Modifications Is Necessary.

1. The Sustainability Issues Affecting the Maple Road/Evergreen Systems Should Be Addressed Independent of Any Issues Affecting the Western Area.

The ongoing difficulties with the Allison Street extraction wells will make it increasingly difficult, if not impossible, to continue to capture the leading edge of the Evergreen plume at that location. Modifications to the existing program are needed so that the unsustainable objective of continuing to capture the leading edge of the plume can be set aside without affecting the protectiveness of the cleanup program. Similarly, the Maple Road system may not be sustainable as currently configured. Groundwater reinjection does not appear to be a reliable long-term method of disposing of treated groundwater. The existing program must be modified to provide a reliable disposal method for water purged by the Maple Road extraction system. (Fotouhi Aff., ¶¶ 14-21).

[6] The Evergreen area and Maple Road modifications included in PLS' May 4, 2009 Comprehensive Proposal to Modify Cleanup Program ("Comprehensive Proposal") are identical to those originally set forth in the June 2008 Proposal. (*See* Appendix 13).

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Almost as important as addressing the operational issues is eliminating the costly and wasteful technical and legal disputes arising from the complex geology in the Evergreen Subdivision area. Debates over whether PLS is successfully capturing the leading edge of the 85 ppb plume and the MDEQ's incessant demands for additional monitoring wells in this area have occupied an inordinate portion of both parties' time and resources. (*See* Fotouhi Aff., ¶¶ 17-18). The MDEQ has claimed that it needs to be able to demark an imaginary contour line of 85 ppb of 1,4-dioxane in the Evergreen area and to distinguish between the Evergreen plume and Unit E aquifers with precision so that it can determine if the Consent Judgment capture requirement has been met. This is an essentially meaningless exercise from a public health and safety standpoint because the D_2 and Unit E aquifers are interconnected. Modification of the Evergreen cleanup objective in the manner suggested by PLS should eliminate the MDEQ's need for exceedingly precise delineation and render irrelevant many of the most intractable disputes between the parties. If PLS is no longer required to capture the groundwater contamination above 85 ppb in the Evergreen area, there will be no basis or need for the MDEQ to demand the type of investigation that it demanded in its June 23, 2008 correspondence. (Appendix 7). Nor will PLS be required to further disturb the residents on Allison Street in order to comply with the MDEQ's calls for a multi-well groundwater extraction system.

This improvement in both operational and administrative sustainability would be achieved without diminishing the protectiveness of the cleanup program for the residents of the Evergreen Subdivision and surrounding areas. PLS is currently monitoring the six Evergreen area drinking water wells to insure that they do not become contaminated. Although this monitoring has never suggested that any of these wells are threatened with unacceptable exposures, PLS' agreement to pay

to connect these properties to municipal water will remove any concerns regarding the long-term reliability of these private water supplies.

The proposed modifications would also make the objectives of the Evergreen and Maple Road systems consistent with and reflective of the current circumstances. In 1992 when the Evergreen capture objective was established, all of the residents of this area were utilizing private wells (other than the properties that had already become contaminated, which PLS connected to municipal water). That objective has remained unchanged even though municipal water now services almost the entire subdivision and downgradient areas. Consequently, allowing the Evergreen plume to migrate to the Huron River will no longer affect the residents in the Evergreen area. In 2004, this circumstance allowed the Court to establish the Prohibition Zone to address the Unit E contamination with little or no impact on the residents.

Finally, consistent cleanup objectives for the Evergreen and Unit E plumes make sense because the parties now realize that the Evergreen plume and the shallower portion of the Unit E plume located just south of the Evergreen Subdivision are hydraulically connected and, in reality, part of the same plume. (Brode Aff., ¶ 63). Operating at their current purge rates, the Evergreen extraction wells may in fact be pulling contaminated groundwater from the Unit E plume north into the Evergreen Subdivision area. (Brode Aff., ¶ 64). It is also clear that, if allowed to migrate east, the Evergreen plume will simply rejoin the Unit E plume and migrate to the Huron River safely within the Prohibition Zone. Consequently, PLS' proposed change to the Evergreen cleanup objective would reflect the parties' current understanding of the relationship between the Unit E and Evergreen plumes and would achieve a consistent cleanup objective.

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B. The MDEQ's Objections to the Evergreen/Maple Road Modifications Are Without Basis.

1. Reducing the Evergreen Extraction Rates Will Not Change Groundwater Flow Direction.

The MDEQ does not disagree that PLS' proposed modifications to the Evergreen/Maple Road systems have merit. The MDEQ is, however, concerned that the proposed reduction of the combined Evergreen system groundwater extraction may cause the current easterly groundwater flow direction to change to the north or northeast. The MDEQ is concerned that, if this were to occur, the plume might migrate past the northern boundary of the expanded Prohibition Zone and might eventually reach the City's Huron River municipal water intake, which is located in Barton Pond, some 11,000 feet northeast of the Evergreen plume and well upstream from the discharge point of the Unit E into the Huron River.[7] The MDEQ's objections are not based on any data that suggest that either of these events would occur. Rather, the MDEQ is not satisfied that PLS has provided enough data to prove the negative.

It should go without saying that PLS would not have proposed modifications that included reduced Evergreen extraction if there was any reason to believe that the plume would shoot off to the northeast beyond the proposed Prohibition Zone boundary, let alone reach Barton Pond. PLS thoroughly investigated whether reduction or even termination of the Evergreen groundwater extraction will affect the flowpath of the Evergreen plume before PLS submitted its Comprehensive Proposal:

[7] MDEQ Denial, Appendix 15, p. 12. PLS does not dispute that reduction of the Evergreen groundwater extraction is likely to allow a portion of the plume to migrate east to the Huron River. (*See* "DEQ Comments, B2," Appendix 15, p. 8). In fact, that is the assumption underlying PLS' proposal. The remnant plume will follow (and merge) with the Unit E, and will discharge well downstream of the City's Barton Pond intake.

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- PLS studied the natural groundwater flow patterns that existed in the Evergreen area before PLS began purging from the LB area in 1992. These early investigations show that groundwater in the Evergreen area naturally flows due east as it passes through the subdivision. (Brode Aff., ¶ 52). There is, therefore, no reason to believe that the natural groundwater flow pattern will not continue to control the migration of the plume after the Evergreen extraction is reduced or terminated.

- PLS agreed to install three new monitoring well clusters (MW-120, 121, and 122) to further define the extent of contamination and to provide additional data points from which to gather groundwater elevation data.

- After hearing the MDEQ's continued concerns regarding the possible change in groundwater flow direction, PLS agreed to further study what effect, if any, reducing and terminating the Evergreen extraction would have. With significant input from the MDEQ technical staff, PLS developed a testing procedure for determining whether lowering purge rates in this area would affect groundwater flow direction. The MDEQ approved that work plan. The results of this investigation were described in PLS' March 2009 Report on Water Level Testing Under Reduced Flow Conditions Evergreen Area (the "Evergreen Groundwater Flow Report") (Appendix 11). This investigation unequivocally demonstrated that even with no extraction, groundwater in the area continues to flow east, consistent with the natural flow pattern observed before purging began. (Appendix 11, pp. 11-12).[8]

The MDEQ, however, has not fully accepted PLS' conclusion that the groundwater flow direction will not change. The MDEQ has asserted that PLS' MDEQ-approved test was not conclusive because it relied on data collected during the test from the northern-most monitoring well cluster (MW-120). The MDEQ has claimed that these data were not valid, even though the MDEQ acknowledged that it had no basis for discounting these data:

> We have no technical reason for dismissing the data from MW-120s&d; however, we would not make a decision regarding pumping rates in the Evergreen Area without confirming the flow pattern inferred on [PLS' maps], or without further monitoring to the north-northeast.

[8] The City of Ann Arbor hired its own consultant to review and comment on PLS' Evergreen Groundwater Flow Report. The City consultant commented favorably on PLS' testing procedure and methodology and agreed with the Report's conclusion that groundwater flow was to the east regardless of the pumping conditions. (Appendix 17, pp. 3, 6-7).

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(Appendix 12, p. 4 (emphasis added)). In other words, because the groundwater flow path indicated by PLS' study relied on this data point, the MDEQ did not feel comfortable making a decision without additional data from new monitoring wells. In what has now become an unfortunate but familiar pattern in this case, the MDEQ could not make the technically obvious conclusion even after an agreed upon study, and instead ducked the issue, claiming it needed more information and demanding that PLS install two additional well clusters for the sole purpose of corroborating the data from MW-120.

PLS reluctantly agreed to install one of the two requested well clusters. (PLS concluded that the second location was too far away from MW-120 to provide any useful data.) PLS installed well cluster MW-123 and provided updated potentiometric maps that confirmed that groundwater flow was to the east. (Brode Aff., ¶¶ 56-57). Again, the MDEQ refused to accept the obvious and make a decision. As set forth in Mr. Mandle's June 15, 2009 Memo attached to the MDEQ Denial, the MDEQ continues to discount the data from MW-120s, concluding that this well is "more reflective of local conditions" – i.e., that it is separated from the aquifer where the Evergreen plume is located. (Appendix 15, 06/15/09 Mandle Memo, p. 2). This conclusion flies in the face of Mr. Mandle's early observation that MW-120s was "hydraulically connected to the same aquifer from which the Evergreen Area wells extract groundwater." (Appendix 12, p. 4). Ironically, only by ignoring the data from all three of the shallow monitoring wells the MDEQ asked PLS to install prior to the Evergreen Groundwater Flow test (MW-120s, 121s, and 122s) can the MDEQ manipulate the data to show any northeast flow direction – and even then, the flow in that direction is only temporary before it returns to a easterly flow. (Appendix 15, 06/16/09 Mandle Memo, Figure 5).

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Despite the internal inconsistency of the MDEQ's own conclusions, PLS has continued to attempt to address the MDEQ's misplaced concerns so that it could finally make a decision that was already dictated by the field data and geology. PLS recently retained Dr. Neven Kresic, a world-renowned hydrogeologist[9], to review all of the data from the Evergreen area and make his own conclusion. His report, "Analysis of Groundwater Flow Direction, Evergreen Subdivision" (MACTEC, August 5, 2009) ("MACTEC Report"), is attached to his Affidavit.

In the MACTEC Report, Dr. Kresic presents his own analysis of the groundwater flow directions in the Evergreen subdivision area. He concludes that both the shallower (D_2) and deeper (E) aquifers are flowing to the east (Unit E is generally east-southeast). (MACTEC Report, pp. 4-5). His conclusions are based upon "textbook" hydrogeology, and take into account groundwater elevations, regional topology and geology, the tendency for groundwater to follow that geology, and the actually data gathered by PLS. According to Dr. Kresic, the possibility that contamination from either the D_2 or Unit E aquifers could migrate north of the proposed Prohibition Zone boundary is "non-existent," even if PLS stops purging from the Evergreen wells altogether. (Affidavit of Neven Kresic, PG, PhD ("Kresic Aff."), ¶¶ 12-13).

One might legitimately ask at this point that if "textbook" hydrogeology leads to the conclusion that Dr. Kresic and PLS reached independently that the groundwater is not flowing north, how is it that the MDEQ decided that it did not have adequate information to reach that conclusion? Dr. Kresic answered this question in the MACTEC Report:

> The analysis of groundwater flow direction in the Evergreen area performed by Michigan Department of Environmental Quality (DEQ,

[9] Dr. Kresic literally "wrote the book" on modern hydrogeology – six of them actually. Dr. Kresic, among many other postings, served as a groundwater modeling consultant for the United Nations. (See Dr. Kresic's CV, Attachment A to Kresic Aff.).

> 2009) fails to account for the role of geologic, hydrogeologic, and hydrodynamic conditions in the subsurface. Groundwater elevations recorded in various monitoring wells are interpreted incorrectly, and groundwater contour maps are created by arbitrarily excluding various monitoring wells and/or mixing data from wells screened in different aquifers.

(MACTEC Report, p. 9). In short, if the MDEQ did not have adequate information, this was because it was unaware of or did not use some of the information (geologic, hydrogeologic, and hydrodynamic conditions), it excluded additional information (various monitoring wells), and it misinterpreted other information (groundwater elevations in various monitoring wells). More specifically, the MDEQ did "not recognize" that groundwater flows away from topographically high areas, which are areas of recharge, and toward areas of lower hydraulic head. (MACTEC Report, p. 9). This explains why the data from MW-120 was not "anomalous" as hypothesized by the MDEQ. Also, the MDEQ mixed groundwater elevations from two aquifers (D_2 and E) that are separated by confining layers in the study area, which "ignores standard industry practice" and which, as Dr. Kresic points out, leads to an "erroneous potentiometric map which would not be representative of true groundwater flow directions in either shallow or deep aquifers." (MACTEC Report, pp. 9-10). Finally, Dr. Kresic notes: "The results of the reduced pumping test performed by PLS are interpreted incorrectly by DEQ, including failure to account for the natural aquifer recovery due to increased recharge and the influence of barometric pressure on groundwater elevations recorded in monitoring wells." (MACTEC Report, p. 10).

There is no data that suggests that groundwater contamination will suddenly start flowing to the north or northeast if PLS reduces or even terminates extraction from the Evergreen area. Not only is there ample information available for the MDEQ to reach the obvious conclusion that

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groundwater in both aquifers will flow east (or east-southeast, in the case of Unit E), the MDEQ-hypothesized change in flow would be contrary to scientific principles and all of the data PLS has painstakingly gathered and presented to the MDEQ as well as the natural groundwater flow patterns observed before purging was initiated. The MDEQ's conjecture in this regard is not supported by data and therefore renders its denial of PLS' proposed modifications arbitrary and capricious.

2. There is No Need for, Nor Even a Basis for Developing, a Contingency Plan for the Evergreen System.

The MDEQ has also demanded that PLS develop a contingency plan to address two concerns: a) that the Evergreen plume might expand north beyond the proposed Prohibition Zone boundary; and b) a separate, less plausible, concern that groundwater contamination might migrate the 11,000 feet cross gradient to the City's Barton Pond water intake. Such a contingency plan is unnecessary for several reasons. First, as discussed above, all of the data and the analysis of two experts is that the chance that either of these contingencies would happen is "non-existent." (See Kresic Aff., ¶¶ 12-13, 16; Brode Aff., ¶¶ 60-62). Second, the Court's orders establishing the Prohibition Zone already permit the parties to seek to expand the Prohibition Zone boundary as needed to maintain its protectiveness if the plume expands to the point that it gets close to the boundary.[10] Therefore, a

[10] Contrary to the MDEQ's unsupported statements in its Denial, there are no areas immediately north of the proposed Prohibition Zone boundary where municipal water is unavailable or where there are a significant number of private drinking water wells. (Appendix 15). While PLS is not suggesting that the Prohibition Zone boundary should be casually expanded in the future, there is no compelling reason a limited expansion could not be done with little impact on area residents in the extremely unlikely event the plume expands to the point where it reaches the proposed boundary.

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contingency plan already exists if there is some slight infringement on the proposed boundary.[11]

PLS has not proposed a contingency plan for addressing the risk that groundwater contamination would migrate all the way to the Barton Pond intake because even proposing such a plan gives this "risk" more credence that is warranted and would again immerse the parties in an endless debate regarding the merits and viability of any such plan. Such a migration would require a significant change in groundwater flow direction, the risk of which is "non-existent." Moreover, even if such a change occurred, it would take approximately 30 years for the plume to reach the pond (assuming a conservatively rapid groundwater flow velocity). (Brode Aff., ¶ 62). Clearly, the parties and this Court would have sufficient time to respond if this exceedingly unlikely event were to actually occur. Delaying approval of necessary modifications to the cleanup program while debating the merits of a contingency plan to address a non-existent risk would be unconscionable.

Although it is not possible now to develop a plan to address a "non-existent" risk, PLS did bolster its monitoring plan in the Evergreen area in an attempt to address the MDEQ's concerns and commit to undertake additional investigations if contaminant levels in certain boundary wells reached 20 ppb. (*See* June 3, 2009 Evergreen Plan for Verifying Protectiveness of Proposed Remedial Modifications ("Verification Plan"), attached as Appendix 14). PLS' Verification Plan includes the installation of monitoring wells at three additional locations along the northern border of the proposed Prohibition Zone. (Appendix 14, p. 4). With these new wells, there would be a total of

[11] The Part 201 rules regarding contingency plans, cited throughout the DEQ Denial, do not require the type of contingency planning the MDEQ is demanding here. Only two MDEQ cleanup rules address contingencies: Rule 538(2)(g) provides for a contingency plan to address mechanical failures in a system component; and Rule 540(2)(k) provides for a contingency plan to address "ineffective monitoring." These rules do not require any planning beyond the narrow scope of the subjects covered, and certainly do not touch on planning for unanticipated changes in the environment, such as movement of a plume 11,000 feet cross-gradient.

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five monitoring points along the northern border of the Prohibition Zone in the immediate area of the Evergreen Subdivision. These monitoring wells would provide important data and serve as backup boundary wells if contaminant concentrations in one or more of the current boundary wells (located further south, nearer the current plume boundary) rise above the cleanup criterion.[12]

These wells would also serve as sentinel wells. PLS has agreed to undertake additional investigations if 1,4-dioxane concentrations in these wells ever exceed 20 ppb. The goal of the investigations will be to determine the flow path of the 1,4-dioxane that may migrate north of the Prohibition Zone boundary. Such investigations will include the installation of monitoring wells to evaluate groundwater flow directions and water quality north of the Prohibition Zone. Based on the results of this investigation, PLS and the MDEQ will determine what additional investigations and/or response actions, if any, are appropriate to prevent migration of the plume into Barton Pond. Thus, PLS will have time to conduct an investigation to obtain the information needed to develop an appropriate contingency plan if that investigation shows that one is needed. There is no reason to conduct this investigation now precisely because all available data show that the risk to be addressed will not occur.

[12] The proposed reduction in groundwater extraction and migration of the groundwater contamination is expected to result in some slight "swelling" of the plume, even absent any change in groundwater flow direction. If this occurs, concentrations in the existing border wells – which are quite close to the current plume boundary – might exceed 85 µg/L. In that event, the plume would remain defined by the modified well network.

CONCLUSION

For the above-stated reasons, PLS asks this Court to approve PLS' proposed modifications to the Eastern Area and the Evergreen and Maple Road systems, independent of how this Court resolves the issues related to the Western Area.

Respectfully submitted,

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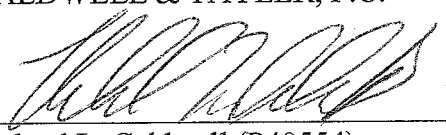

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Dated: August 18, 2009

STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

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STATE OF MICHIGAN, et al,
MICHIGAN NATURAL RESOURCES
COMMISSION, MICHIGAN WATER
RESOURCES COMMISSION, and
MICHIGAN DEPARTMENT OF NATURAL
RESOURCES,

Plaintiffs,

Case No. 88-34734-CE

vs

Hon. Donald E. Shelton

GELMAN SCIENCES INC.,
a Michigan corporation,

Defendant.

_____/

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BRIEF REGARDING ISSUES IN DISPUTE

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INTRODUCTION

This Court has asked the parties to identify any disputes arising from the proposed modifications to the cleanup program described in Defendant, Gelman Sciences, Inc., d/b/a Pall Life Sciences' ("PLS") May 4, 2009 Comprehensive Proposal to Modify Cleanup Program ("Comprehensive Proposal"). PLS has moved separately for approval of its proposed modifications to both the Western and Eastern Areas. This document identifies the disputes between the parties that need to be resolved in order to determine how best to modify the cleanup program. Disputes that affect both sets of proposed modifications are discussed first, followed by those directly related to the Western and Eastern Areas.

AREAS OF DISPUTE

Although it is somewhat difficult to determine from the Michigan Department of Environmental Quality's ("MDEQ") June 15, 2009 correspondence denying approval of PLS Comprehensive Proposal ("MDEQ Denial") what is a real concern and what is merely grumbling, it appears that the following issues are in dispute:

Disputes Affecting Entire Comprehensive Proposal

1. Legally Enforceable Agreement (Discussed below)

   Whether, as a prerequisite to approval of its Comprehensive Proposal, PLS should be required to enter into a "legally enforceable agreement" with the MDEQ in addition to the Consent Judgment that would require PLS, among other things, to pay the Plaintiffs' future oversight costs and provide a financial assurance mechanism to fund future response actions where neither of these is required by the Consent Judgment.

2. Contingency Plans (Discussed below and in PLS' Evergreen/Maple Road Brief)

   Whether, as a prerequisite to approval of its Comprehensive Proposal, PLS should be required to prepare and obtain approval of detailed contingency plans to address the remote risks identified in the MDEQ Denial.

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3. Contaminant/Source Delineation (Discussed below)

Whether, as a prerequisite to approval of its Comprehensive Proposal, PLS should be required to conduct the extensive remedial investigation of the entire site as described in the MDEQ's Denial and the attached memorandum authored by James Coger to address the MDEQ's concerns about the "uncertainty" allegedly created by PLS' proposed modifications.

4. Performance Monitoring Plan (Discussed below and in PLS' Comprehensive Proposal Brief)

Whether, as a prerequisite to approval of its Comprehensive Proposal, PLS should be required to supplement its proposed performance monitoring plan, beyond the compliance monitoring points PLS has agreed to add.

Disputes Affecting Western Area

1. Feasibility of Containment Objective (Discussed in Comprehensive Proposal Brief)

Whether PLS' proposed cleanup objective to prevent expansion of the plume in the Western Area in directions other than toward the Prohibition Zone is feasible.

2. Mass Removal Estimate/Milestones (Discussed below)

Whether as a prerequisite to approval of its Comprehensive Proposal, PLS should be required to undertake the investigation specified by the MDEQ and calculate/estimate the contaminant mass remaining in the aquifer system for the purpose of establishing mass removal milestones where making mass removal an enforceable cleanup objective serves no purpose.

3. Ann Arbor Cleaning Supply Well (Discussed below)

Whether as a prerequisite to approval of its Comprehensive Proposal, PLS should be required to agree to continue "batch purging" from the only location in what has historically been called the Western "System" when contaminant levels are already declining and barely above the cleanup criterion, and there is no indication that continuation of batch purging will help.

4. Restrictive Covenants (Discussed in Comprehensive Proposal Brief)

Whether as a prerequisite to approval of its Comprehensive Proposal, PLS should be required to obtain consent from the property owners currently affected by the groundwater contamination to restrict their properties even though such restrictions will not need to be recorded for many years.

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Disputes Affecting Eastern Area

1. Groundwater Flow In Evergreen Area Under Reduced Extraction (Discussed in Evergreen/Maple Road Brief)

   Whether as a prerequisite to approval of its Comprehensive Proposal, PLS should be required to continue to investigate the effect, if any, that the proposed reduction in Evergreen groundwater extraction may have on groundwater flow directions.

2. Veterans Park Performance Monitoring Well (Discussed below)

   Whether as a prerequisite to approval of its Comprehensive Proposal, PLS should be required to install a performance monitoring well immediately downgradient from the Maple Road extraction well when the presence of subterranean boulders has twice prevented PLS from doing so and when there is an existing monitoring well that is well suited for use as a performance monitoring well?

3. Northern Boundary of Prohibition Zone (Discussed below)

   Whether as a prerequisite to approval of its Comprehensive Proposal, PLS should be required to agree never to seek to modify the northern border of the proposed expanded Prohibition Zone when such expansion might be prudent in the future?

I. DISPUTES ARISING FROM COMPREHENSIVE PROPOSAL

A. PLS Need Not Enter Into a "Legally Enforceable Agreement" That Is Inconsistent with the Consent Judgment in Order to Have its Modifications Approved.

In its Denial, the MDEQ asserts that in order to obtain the MDEQ's approval of its proposed modifications, PLS must abandon the October 26, 1992 Consent Judgment ("Consent Judgment") and enter into a new enforceable agreement that is consistent with the form document the MDEQ has developed. (Appendix 15, pp. 1-2, 13-14).[1] This form document contains requirements that are utterly inconsistent with the terms the parties negotiated, including those specifically requested by the MDEQ regarding financial assurance and payment of

[1] The MDEQ's form implementation agreement can be found at: http://www.michigan.gov/deq/0%2c1607%2c7-135-3311_4109_4214-58107--%2c00.html (Agreement to Implement a Limited Remedial Action). One can only imagine how long PLS' proposed modifications would be delayed while the parties negotiated the language of a new agreement of this magnitude.

oversight costs. Once again, the MDEQ is holding PLS' attempt to improve the cleanup program hostage in order to gain some advantage on a completely unrelated issue. Such an attempt to unilaterally and drastically alter the basic terms of the Consent Judgment is not permitted, nor does anything in Part 201 suggest that such a result is required.[2]

A consent decree is a judicial "hybrid," with characteristics of both a voluntary settlement agreement and a final judicial order. *Vanguards of Cleveland v City of Cleveland*, 23 F3d 1013, 1017 (CA6 1994). "[J]udicial approval of a consent decree places the power and prestige of the court behind the agreement reached by the parties." *Id.* at 1018. Accordingly, "[t]he injunctive quality of a consent decree compels the approving court to: (1) retain jurisdiction over the decree during the term of its existence, (2) protect the integrity of the decree with its contempt powers, and (3) modify the decree if 'changed circumstances' subvert its intended purpose." *Id.*

Most relevant to the issue raised by the MDEQ: "A modification will be upheld if it furthers the original purpose of the decree in a more efficient way, without upsetting the basic agreement between the parties." *Heath v DeCourcy*, 888 F.2d 1105, 1110 (CA6 1989). PLS is seeking appropriate modifications to the Consent Judgment for precisely this purpose – to allow the parties to address the groundwater contamination in a "more efficient way." The MDEQ, on the other hand, is attempting leverage PLS' desire to improve the cleanup program to "upset[] the basic agreement between the parties." Specifically with respect to the MDEQ's demand that PLS pay its oversight costs, the "basic agreement" was that in exchange for PLS' commitment to reimburse the State's past costs and cleanup the groundwater contamination, PLS would not be

[2] Nor is such an attempt necessary to ensure that PLS' proposals are in compliance with Part 201. PLS' proposals do comply with the substantive Part 201 provisions (e.g., PLS' Western Area containment objective is specifically intended to comply with R 299.5705(5) (Comprehensive Proposal, p. 10). The only statutory provisions PLS makes no attempt to comply with are those like MCL 324.20120b(3) that could be interpreted to require additional approvals from the MDEQ. The MDEQ argues that that Part 201 applies precisely so that it will have a pretext for making other demands presumably as a quid pro quo for exercising its authority. While this may not be "arbitrary," it is capricious and an abuse of statutory authority.

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required to pay the MDEQ's future oversight costs. (Consent Judgment, Section XVIII.B.5, p. 51). Nor does the Consent Judgment contain any requirement that PLS post a bond or provide some other form of financial assurance now being demanded by the MDEQ.[3]

The MDEQ attempts to argue that changed circumstances brought about by PLS' proposal make rewriting the Consent Judgment appropriate. The MDEQ claims that PLS' Comprehensive Proposal would:

> 1) increase the uncertainty about the fate of contamination; 2) increase the potential for additional response actions to be necessary in the future to address unintended consequences; and 3) increase in the length of long-term monitoring required.

(Appendix 15, p. 14). Nothing that has occurred since the MDEQ agreed to enter into the Consent Judgment justifies this demand. In fact, changes that have occurred since 1992 make it even more inappropriate to eviscerate the Consent Judgment in the manner suggested by the MDEQ.

While the parties can argue about the effect of PLS' proposal using today as the baseline, there can be no dispute that the MDEQ is and will be in a much better position than it could have foreseen in 1992 when it agreed to forego claims for future oversight costs/financial assurance. The parties' original agreement only required PLS to conduct modest onsite remediation and to capture the leading edge of the offsite plumes. There was no timeframe for completing the cleanup. PLS' efforts since then, particularly since this Court issued its REO, have greatly reduced the level of uncertainty going forward and the MDEQ's likely future oversight cost expenditures. Therefore, there are no changed circumstances that justify "upsetting the basic agreement between the parties." *Heath,* 888 F2d at 1110. If the MDEQ was really concerned about reducing costs, it would stand up to the political pressure it gets from a few fringe activists

[3] Considering the amount of money and resources PLS has poured into this project since purchasing Gelman, this request is particularly galling.

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and stop treating PLS like a recalcitrant polluter and work with PLS as a partner in moving this cleanup forward.

The MDEQ also relies on Section 20102a of Part 201, MCL 324.20102a, in support of its argument that if PLS wants to improve the cleanup program it must enter into an entirely new agreement with the MDEQ and ensure that its modifications comply with Part 201. The actual intent of this Section of Part 201 is to permit a party implementing a response activity to have the choice of whether to proceed under the previous authorities in effect prior to May 1, 1995 or under the sometimes more flexible Part 201 standards adopted on that date. Section 20102a provides, in pertinent part:

> (1) Notwithstanding any other provision of this part, the following actions shall be governed by the provisions of this part that were in effect on May 1, 1995:
>
> a. Any judicial action. . . that was initiated by any person on or before May 1, 1995 under this part.
>
> * * *
>
> c. An enforceable agreement with the State entered into on or before May 1, 1995 by any person under this part.
>
> * * *
>
> (3) Notwithstanding subsections 1 and 3, upon request of a person implementing response activity, the department **shall** approve changes in a plan for response activity to be consistent with Sections 20118 and 20120a.

MCL 324.20102a (emphasis added). The intent behind this Section was to allow a responsible party to take advantage of the flexibility offered by Sections 20118 and 20120a if desired. In such a case, the MDEQ is required to approve the modification.[4] The converse, however, is not

[4] Section 20118 sets forth various options for achieving an acceptable cleanup (including the waiver provisions this Court relied upon to authorize the Prohibition Zone in its Unit E Order). Section 20120a requires the MDEQ to promulgate cleanup criteria for various property use assumptions (e.g., residential, commercial, industrial) and mandates that a less restrictive cancer risk tolerance be used to generate those criteria. MCL 324.20120a(1) and (4).

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true: Modifications to pre-1995 agreements do not have to conform to Part 201 or its rules. There is nothing in the language of Subsection 20102a(3) that requires that result. Such an interpretation would fly in the face of the flexibility granted to the responsible party ("upon request of . . .") by Subsection 20102a(3) and clear the protections granted to pre-1995 agreements granted by Subsection 20102a(1). Certainly, there is nothing in this provision that would require PLS to enter into a completely new agreement with the MDEQ. Thus, the MDEQ's suggestion that the previously agreed upon structure set forth in the Consent Judgment must be jettisoned in favor of standards adopted well after the date of that agreement is without basis.[5]

By overstating its statutory authority, the MDEQ has again created a pretext for denying approval of improvements to the cleanup program in the interest of furthering a financial agenda. This Court may recall a similar situation in 2000 when the MDEQ refused to allow PLS to operate the Horizontal Well even though objective observers, including the geologist previously assigned to this site, thought its operation would benefit the cleanup. Unfortunately, the MDEQ could not approve its operation without undermining its claim for millions of dollars of stipulated penalties. Now the MDEQ is again willing to sacrifice system improvements for financial gain. PLS is again compelled to seek this Court's intervention and to focus the parties on what is important for the cleanup program.

B. Neither Part 201 Nor Common Sense Requires PLS to Develop Contingency Plans for Future Risks Not Likely to Occur.

In its Denial, the MDEQ demands from PLS numerous contingency plans it says are needed as a predicate for even considering approving a change in the Eastern or Western Areas.

[5] Section 20102(a) does not apply to PLS' proposed modifications for another reason. The MDEQ has already denied PLS' request for MDEQ approval. (*See* Appendix 15). Thus PLS is no longer seeking the MDEQ's approval, but rather is once again forced to impose on this Court to obtain the common sense approvals necessary to move this cleanup program forward.

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Specifically, the MDEQ makes mention of a contingency or the need for a plan no fewer than nine times covering the following various topics: a) to address unanticipated expansion of the plume west of Wagner Road (Appendix 15, pp. 6-7); b) to address the potential need for additional pipeline capacity to transport both treated and untreated groundwater from the Eastern Area (Appendix 15, p. 10); c) to address the potential need for increased purging at Maple Village and associated treatment and discharge capacity that might be needed (Appendix 15, p. 10); d) to prevent migration of the plume in the Evergreen area north of the proposed expansion of the PZ boundary (Appendix 15, p. 12); and e) and to prevent the migration of 1,4-dioxane into the Huron River proximate to the City of Ann Arbor water intake (Appendix 15, p. 13).

Even an observer unfamiliar with the MDEQ's approval process would quickly conclude from this list that PLS would have to spend the next several years debating the details and the merits of plans to address remote and inflammatory contingencies. One can readily guess, for example, that even discussing a plan for interdicting a plume proximate to the Barton Pond municipal water intake would inevitably lead to the perception that such migration is realistic, when it is not, a public uproar over this eventuality, and a insoluble debate over what should be done to address a risk that does not realistically exist.[6] Similarly, as discussed in PLS' Western Brief, the area affected by the plumes west of Wagner Road has not changed since groundwater extraction was initiated even though concentrations have declined precipitously. It is very unlikely that the changes in objectives proposed by PLS will lead to migration that is contrary to the natural flow patters observed before PLS began extracting groundwater.

The Part 201 rules cited in the MDEQ Denial say nothing about the necessity for the type of contingency planning the MDEQ is demanding here. Only two MDEQ cleanup rules address

[6] As PLS has demonstrated in its Evergreen Brief, the risk that contamination will extend beyond the proposed Prohibition Zone northern boundary, let alone migrate the 11,000 feet to the Barton Pond water intake is "non-existent."

contingencies: Rule 538(2)(g) provides for a contingency plan as part of an operation and maintenance plan to address a failure in a system component (i.e., a mechanical failure) and Rule 540(2)(k) provides for a contingency plan to address "ineffective monitoring." These rules do not require any planning beyond the narrow scope of the subjects covered, and certainly do not touch on planning for unanticipated changes in the environment. To suggest that such planning is a necessity now that PLS wants to amend some of its existing systems, when such planning was not previously necessary, strains credulity. There is no reason that it is necessary to resolve now any possible unanticipated future change in circumstances as a pretext for not approving the PLS proposal.

Finally, PLS has a long history of addressing operational issues in a proactive manner, before they affect the protectiveness of the cleanup program. PLS has not needed a shelf full of contingency plans in order to keep its cleanup program in compliance. For instance, PLS installed the Horizontal Well/Transmission pipeline (despite the MDEQ's objections) before the limited capacity of its original Evergreen remedial system threatened PLS' ability to achieve that Consent Judgment objective. Whenever PLS' remedial systems have become outdated or inadequate due to changing conditions, PLS has proposed and implemented improved systems and/or appropriate repairs or substitutions without the need to identify the such solutions in advance.[7] Ironically, it is PLS' attempt to take such responsible steps with regard to the Evergreen and Maple Road systems that the MDEQ is now thwarting by its demand for unnecessary contingency plans.

[7] As a side note, true contingency plans are generally reserved for situations where a public health emergency could occur in the event of an unanticipated breakdown or event, such as a spill out of containment, an explosion, an act of terrorism in vulnerable areas, or a nuclear meltdown. Although not demanded here by MDEQ, PLS has spill response plans and homeland security contingency plans in place, for example.

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C. Further Delineation Should Not Be a Prerequisite to Approval of PLS' Comprehensive Proposal

The MDEQ's demands for further delineation and its expressed concerns regarding the alleged uncertainty as to the fate of the contamination after it migrates into the Prohibition Zone are not valid technical objections, but rather excuses not to make a decision. This tiresome habit of demanding more data as a means of avoiding the need to make a decision should be rejected out of hand.

To read the MDEQ Denial and the level of investigation being demanded, one would think that PLS had yet to install its first monitoring well. Nothing could be further from the truth. The PLS site is one of the most thoroughly investigated sites in the State of Michigan. PLS has been investigating the site for over 20 years – *with the MDEQ's involvement at every step of the way.*

As Mr. Brode testifies in his affidavit, PLS has installed over 200 monitoring wells and borings to define the extent of contamination throughout the entire aquifer system. (Brode Aff., ¶ 3). Although PLS and the MDEQ have from time to time agreed to supplement the monitoring well network by adding certain monitor wells, the current monitoring well network has been deemed to be sufficient to define the extent of groundwater contamination west of Wagner Road for at least the last ten years. The last time the parties agreed to supplement the approved monitoring well network west of Wagner Road to refine the plume delineation was in 2007 (soil boring MW-109). (Brode Aff., ¶ 18). The MDEQ's sudden demand for numerous new monitoring well clusters (i.e., two or more wells at different depths at each location) flies in the face of its previous satisfaction with the plume delineation and approval of PLS' existing monitoring well network.

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If anything, the Eastern Area has been even more thoroughly investigated than the Western Area. The Evergreen area has been the subject of numerous investigations and technical review over the years. The MDEQ, however, asserts that additional monitoring wells are needed to "define the western extent of contamination and to establish that the source of contamination in DuPont Circle is not from an area west of, or outside of the proposed expanded PZ." (Appendix 15, 06/15/09 Coger Memo, p. 8). As Mr. Brode explains, PLS has repeatedly installed monitoring wells in locations approved by the MDEQ to debunk the MDEQ's unsupported hypothesis that groundwater contamination is flowing into the Evergreen area from the west. The data from all of these wells has shown that the plume enters the Evergreen area from the southwest as PLS has depicted. (Brode Aff., ¶¶ 46-51). PLS should not be required to undertake additional investigations to disprove an already disproved theory that had no data to support it in the first place.

The MDEQ also mischaracterizes the parties' previous source area investigation as inadequate, claiming that there is only a limited understanding of the sources of the remaining groundwater contamination. To the contrary, PLS, the MDEQ, and even the USEPA have all thoroughly investigated and characterized the "source areas." (Brode Aff., ¶¶ 12-16). Although there are small pockets of relatively high contaminant concentrations (e.g., MW-5d) in the shallower zones, they contain very little mass because these areas are very low-producing water-bearing zones in thin, discontinuous seams. (Brode Aff., ¶ 11).

Nor should the Unit E – the deeper aquifer to which 1,4-dioxane has migrated <u>from</u> the source areas – be characterized as "source area." This characterization is contradicted by the fact that all available data indicate that it is a receiving aquifer with steadily declining 1,4-dioxane concentrations. This dramatic decrease in observed concentrations indicates there is no

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significant area within the Unit E that could be considered a source area. For example, 1,4-dioxane concentrations at TW-11 and TW-17 (and all surrounding monitoring wells) would not be declining if there were a significant mass/source of 1,4-dioxane hydraulically upgradient (west) of these wells. Similarly, it is clear that there is no ongoing *source* of 1,4-dioxane upgradient of TW-12. This Unit E extraction well near Wagner Road was turned off after concentrations being extracted fell below 85 micrograms per liter (µg/L). Since the well was turned off a few years ago, concentrations in this area have stayed below the DWC and have not rebounded, which is what would have happened if there was an ongoing source within the Unit E. Data from MW-65s/i/d, nearby monitoring wells, indicate this is not the case. (Brode Aff., ¶ 15).

Finally, PLS' proposal to set cleanup objectives for the entire aquifer system, rather than on an aquifer by aquifer basis reduces rather than increases the need to further characterize the Unit E. Consequently, there is no technical reason to, or benefit from, further characterizing the Unit E. (Brode Aff., 16).

D. PLS' Performance Monitoring Plan is Adequate

As Mr. Fotouhi explains, a lot of thought went into PLS' performance monitoring plan so that it will provide the data the parties will need to evaluate the performance of PLS' remedial systems. (*See* Fotouhi Aff. ¶¶ 22-26). PLS supplemented the proposed monitoring plan included with its Comprehensive Proposal, which the MDEQ acknowledges improved PLS' monitoring plan.

As described in Mr. Fotouhi's Affidavit, PLS has again committed to augment its monitoring plan to include specified "compliance monitoring wells" that the MDEQ can monitor to determine if any of the cleanup objectives have violated. (*See* Fotouhi Aff. ¶¶ 25-27;

Appendix 27). Although PLS does not find the data from these wells to be useful, it understands that the MDEQ wants to have a "line in the sand" beyond with unacceptable levels of contamination cannot pass so that it can seek stipulated penalties or take other enforcement action.

Hopefully, this latest supplementation will move the parties closer to resolution of these issues. PLS will continue to attempt to reach resolution or at least narrow any remaining disputes in this regard.

I. Disputes Affecting Western Area

A. PLS Should Not be Required to Provide Mass Removal Milestones

To date, PLS' groundwater extraction system has successfully reduced contaminant concentrations across the site. One measure of that success is the concentration of the influent water from the extraction wells that goes to PLS' treatment system. These concentrations have fallen from over 20,000 ppb in 1997 when PLS began groundwater extraction to approximately 550 ppb currently. With the relatively low levels in the Western Area, it no longer makes sense from a technical standpoint to operate wells that are extracting low concentrations of 1,4-dioxane, so long as any residual contamination above the Drinking Water Criterion (DWC) flows into the Prohibition Zone where use of the groundwater is illegal.

Consequently, as discussed in Mr. Fotouhi's Affidavit, PLS is proposing to focus its efforts in the Western Area on removing mass from the areas where relatively high mass remains. PLS is not, however, proposing mass removal as an enforceable cleanup objective in and of itself. PLS has proposed to operate on-site purge wells until concentrations in the individual purge wells fall below 500 ppb in order to:

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a. reduce the MDEQ's concerns regarding any uncertainty associated with the possibility that the plume contamination could expand outside of the Prohibition Zone boundaries; and

b. reduce mass loading to the Huron River when the plume ultimately vent to that surface water body.

This rationale for conducting mass removal does not require monthly or annual mass removal benchmarks, as suggested by the MDEQ, to measure progress. Progress will be measured by the efficiency of the groundwater extraction wells, i.e., by the 1,4-dioxane concentrations in the water being extracted. (*See* Fotouhi Aff. ¶¶ 32-38).

Previous attempts by both parties to estimate the amount of mass in the aquifer systems was, frankly, a time-consuming and ultimately futile exercise. Moreover, the MDEQ has demanded that PLS install numerous additional groundwater monitoring wells that it feels will be necessary before this calculation can be performed. It is not logical to further delay implementation of the proposed modifications in order to conduct an investigation designed to allow the parties to make a calculation that is not necessary or relevant.

B. Further Batch Purging of the Ann Arbor Cleaning Supply Well Is Not Necessary

The Ann Arbor Supply extraction well is the only monitoring point in what has historically been referred to as the "Western System" where contaminant levels are above the DWC. The data from the extraction well have been trending down since it was first sampled, and with latest sampling data from the extraction well showing 1,4-dioxane at 93 ppb, just above the 85 ppb DWC. The monitoring well immediate adjacent to the extraction well and all surrounding wells have been below the DWC for some time.

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Because this location is remote from the other extraction wells located west of Wagner Road, the MDEQ has required PLS to actively remediate this area.[8] There is no method of disposing purged water so PLS has used a tanker truck to collect the water and bring it back to the Wagner Road facility for treatment. The volume of water that PLS can manage in this manner is too small to meaningfully affect the rate of decline in contaminant levels.

PLS is proposing to discontinue active remediation of this isolated pocket of contamination above the DWC because it will naturally attenuate. PLS will continue to monitor the area monitoring wells to confirm that the small area of contamination above the DWC does not migrate. This methodology is not only logical, it is consistent with Part 201's requirement that active remediation continue until either the cleanup criterion is achieved or restrictive covenants are in place. The parties have agreed to simplify the cleanup program by dividing the site into two areas. This location will be within the Western Area. Active remediation of this isolated "warm spot" will no longer be necessary because other extraction wells within the Western Area will continue to operate well after this small area of contamination attenuates below the DWC.

III. Disputes Affecting Eastern Area Modifications

A. The Veterans Park Performance Well in Unnecessary

There is a long history regarding the MDEQ's attempt to force PLS to install yet another performance monitoring well immediately downgradient of its Maple Road response system. This dispute is actually premature because levels above 2,800 ppb have not reached and may

[8] The other option would be to obtain restrictive covenants from the several property owners affected by this small plume. Unfortunately, one of the potentially affected properties is owned by the Sunward Co-Housing organization. PLS has previously been required to petition this Court just to obtain access to install a monitoring well and it is unlikely that PLS would be able to obtain the owner's permission to record a restrictive covenant.

never reach Maple Road. Nevertheless, the DEQ has required PLS to have a performance monitoring network in place.

PLS has acceded to the MDEQ's demands and installed the requested network of wells, save one, which the MDEQ wanted PLS to install immediately downgradient of TW-19, the Maple Road extraction well. PLS initially protested this requirement because an existing well – MW-84s-d – was perfectly suited to serve as a performance monitoring well. The MDEQ, however, claimed that although this well is at the correct depth, it is a few hundred feet further downgradient (east) of Maple Road than the MDEQ's preferred location. In other words, the MDEQ does not want to miss any violations based on elevated contaminant levels that might dilute to below acceptable levels while the groundwater migrates that few hundred additional feet to MW-84. The MDEQ took this position even though the closest receptor – the Huron River – is about 15,000 feet further downgradient.

In a valiant attempt to avoid burdening this Court with yet another dispute, Mr. Fotouhi agreed to install the well at the requested location in Veterans Park, immediately east of Maple Road. Proving that no good deed goes unpunished, subterranean boulders twice prevented the installation of this well and caused costly drilling augers to be ruined. (*See* Fotouhi Aff. ¶¶ 27-31).

The MDEQ continues to demand that PLS employ extraordinary efforts to drill through these obstacles to install a well whose only purpose is to catch PLS in a "paper violation" that could not harm any potential receptor. PLS respectfully asks this Court to put a halt to this nonsense.

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B. PLS' Proposed Northern Boundary is Appropriate and Protective

The MDEQ has demanded that PLS expand the Prohibition Zone to include the triangle shaped parcel adjacent to M-14 in the Evergreen area that is currently excluded. (Appendix 15, p. 7) There is absolutely no basis for this requirement.

PLS installed MW-121(s-d) immediately between this property and the nearest edge of the Evergreen Plume. These wells have consistently been non-detect for 1,4-dioxane. Moreover, groundwater flows east from this location toward the Evergreen Plume (i.e., this property is upgradient of the groundwater contamination). (Brode Aff., ¶¶ 46-51).

The MDEQ has never considered this private well supply to be threatened by the Evergreen plume. As set forth in PLS' Evergreen/Maple Road Brief, nothing PLS is proposing to do that will increase the risk to this homeowner. Connecting this property to municipal water would be especially burdensome on the homeowner and unnecessarily expensive for PLS because, as the MDEQ notes, there is no water main that currently services this large parcel (which would have to be annexed into the City). Absent any increased risk, there is no reason to undertake the steps that would be necessary in order to include the property in the expanded Prohibition Zone.

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CONCLUSION

For the above stated reasons, PLS asks that this Court resolve these disputes in the manner discussed above and to approve PLS' Comprehensive Proposal.

Respectfully submitted,

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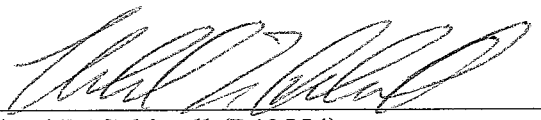

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