Joro Walker, USB #6676
Charles R. Dubuc, USB #12079
WESTERN RESOURCE ADVOCATES
Attorney for Petitioners
150 South 600 East, Ste 2A
Salt Lake City, Utah 84102
Telephone: 801.487.9911
Email: jwalker@westernresources.org
rdubuc@westernresrouces.org

BEFORE THE BOARD OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH

Living Rivers,	:	
	:	
	:	**MEMORANDUM IN OPPOSITION**
Petitioner,	:	**TO RED LEAF'S MOTION IN**
	:	**LIMINE**
vs.	:	
	:	
Division of Oil, Gas and Mining,	:	**Docket No. 2012-17**
	:	
Respondent.	:	**Cause No. M/047/0103**
	:	
Red Leaf Resources, Inc.,	:	
	:	
Intervenor-Respondent.	:	

Living Rivers respectfully submits this Memorandum in Opposition to Red Leaf Resources, Inc.'s (Red Leaf) Motion in Limine submitted in this matter on June 11, 2012.

INTRODUCTION

In its motion, Red Leaf asks this Board to deny Living Rivers' expert, James Kuipers, the opportunity to offer his expert testimony in this matter. In support of this request, the company asks this Board to deviate from its customary practice of permitting a party to present evidence in a matter, and claims without basis that Living Rivers has the burden of demonstrating that Mr.

Kuipers' testimony is appropriately before this body. As Living Rivers has already demonstrated in presenting Mr. Kuipers' resume as an attachment to his expert report, *see* Exhibit A, attached, and as we further demonstrate below, Mr. Kuipers is more than qualified to offer his opinions on this matter and should be allowed to do so.

LEGAL STANDARD

The "threshold question when considering admissibility of any piece of evidence is whether it is relevant." *State v. Bluff*, 2002 UT 66, ¶ 42, 52 P.3d 1210. Evidence is relevant if it possesses "*any* tendency to make the existence of *any* fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." Utah R. Evid. 401 (emphasis supplied). Accordingly, "even evidence that is only slightly probative in value is relevant." *State v. Martin*, 2003 UT 34, ¶ 31, 44 P.3d 805 (citing *State v. Colwell*, 2000 UT 8, ¶ 27, 994 P.2d 177; *see also Robinson v. All-Star Delivery, Inc.*, 1999 UT 109, ¶¶ 26-27, 992 P.2d 969; *State v. Jaeger*, 1999 UT 1, ¶ 12, 973 P.2d 404). In other words, "the standard for determining the relevancy of the evidence is 'very low,' and even evidence with the 'slightest probative value' is relevant." *State v. Smedley*, 2003 UT App 79, ¶15, 67 P.3d 1005 (quoting *State v. Jaeger*, 1999 UT 1, ¶¶ 12, 16, 973 P.2d 404). As a result of this "very low" threshold, "relevant evidence is generally admissible." *State v. Toki*, 2011 UT App 293, ¶ 43, 263 P.3d 481.

Relevant evidence is inadmissible, however, "if its probative value is substantially outweighed by the danger of unfair prejudice." Utah R. Evid. 403. Evidence is unfairly prejudicial

> if it has a tendency to influence the outcome of the trial by improper means, or if it appeals to the jury's sympathies, or arouses its sense of horror, provokes its instinct to punish or otherwise causes a jury to base its decision on something other than the established propositions of the case.

Toki, 2011 UT App at ¶ 44 (quoting *State v. Burk*, 839 P.2d 880, 883 (Utah Ct.App. 1992)).

Where evidence has "no probative value to a fact at issue, it is irrelevant and is inadmissible." *Smedley*, 2003 UT App at ¶ 15. As the Utah Court of Appeals has noted, "[d]etermining questions of relevance and the balancing of probative and prejudicial values are both tasks for which the trial court is granted discretion, and we will reverse the trial court's decision on these matters only when it abuses such discretion." *State v. Schwenke*, 2009 UT App 345, ¶ 9, 222 P.3d 768.

The Board's Rules of Practice and Procedure state that the Utah Rules of Evidence shall be used in the Board's determinations. Utah Admin. Code R641-108-200. Under the Utah Rules of Evidence, an individual may be qualified as an "expert" based on "knowledge, skill, experience, training, or education," and an expert "may testify in the form of an opinion or otherwise." Utah R. Evid. 702(a). An expert's testimony may be based on "scientific, technical, or other specialized knowledge" that "will help the trier of fact to understand the evidence or to determine a fact in issue." *Id.* An expert's testimony must pass a "threshold showing" that it is reliable, based upon sufficient facts and data, and has been reliably applied to the facts. *Id.* at (b)(1) – (3). The "threshold showing" requires "only a basic foundational showing of indicia of reliability for the testimony to be admissible, not that the opinion is indisputably correct." Utah R. Evid. 702, Advisory Committee Notes. The threshold showing is "broad enough to permit testimony that is the product of competing principles or methods in the same field of expertise. Contrary and inconsistent opinions may simultaneously meet the threshold; it is for the factfinder to reconcile--or choose between--the different opinions." *Id.*

While the Advisory Notes state that the trier of fact is in the position of "gatekeeper" in order to screen out unreliable expert testimony and that he or she should view proposed expert testimony with "rational skepticism," such skepticism

> is not so rigorous as to be satisfied only by scientific or other specialized principles or methods that are free of controversy or that meet any fixed set of criteria fashioned to test reliability. The rational skeptic is receptive to any plausible evidence that may bear on reliability. She is mindful that several principles, methods or techniques may be suitably reliable to merit admission into evidence for consideration by the trier of fact. The fields of knowledge which may be drawn upon are not limited merely to the 'scientific' and 'technical', but extend to all 'specialized' knowledge.

Id.

Accordingly, the Board should view an expert's testimony "not in a narrow sense, but as a person qualified by 'knowledge, skill, experience, training or education.'" *Id.* The Board should "take care to direct [its] skepticism to the particular proposition that the expert testimony is offered to support." *Id.* Finally, an evidentiary hearing is not necessary "in order for the trial judge to fulfill his role as a rationally skeptical gatekeeper." *Id.* Instead, "[i]n the typical case, admissibility under the rule may be determined based on affidavits, expert reports prepared pursuant to Utah R. Civ. P. 26, deposition testimony and memoranda of counsel." *Id.*

ARGUMENT

Red Leaf makes the fundamentally flawed argument that Mr. Kuipers is not qualified to offer an opinion regarding either the technical or the economic viability of Red Leaf's proposal. In other words, Red Leaf asks this Board to completely disregard his expert opinion. In support of its motion, Red Leaf argues that Mr. Kuipers is not qualified as an expert in this matter, and that his testimony is unsupported by reliable and relevant facts, data and methods. However, such an argument flies in the face of the extensive experience and expertise outlined in Mr. Kuipers' resume, and on that basis alone Red Leaf's request to exclude Mr. Kuipers testimony

should be denied. However, in order to demonstrate the futility of the company's argument, Living Rivers reiterates below aspects of Mr. Kuipers' credentials that are directly relevant to Red Leaf's proposal.

I. Mr. Kuipers' Opinions are Based on Fundamental Engineering Methods and Approaches

Broadly speaking, Mr. Kuipers' opinions are based on reliable and fundamental engineering methods and approaches, they are supported by facts or data to the extent any such facts or data have been presented by the proponent, and they are based on extensive review of available information contained in literature and on consultation with professional colleagues with experience in oil shale processing. Because no direct example of a similar capsule retort design exists – much less one using Bentonite-Amended Soil (BAS) system technology – Mr. Kuipers relied on his extensive experience in hardrock mining and mineral processing, as well as facts derived from closely analogous mineral processing sites, to form his opinion. In addition to his experience and recognized expert knowledge relative to the reclamation and closure of mining facilities, Mr. Kuipers has been primarily responsible for the design, operation and closure of containment systems for tailings and heap leach operations, as well as mercury retort design and operation.

II. Mr. Kuipers has the Necessary Technical Training and Expertise to Form the Basis for a Reliable Opinion on the Technical Viability of Red Leaf's Capsule Design

Red Leaf makes the argument that Mr. Kuipers has no practical experience with the type of mineral processing to be used as part of the company's proposal. Since the technology to be used by the company has not been previously demonstrated, much less deployed, no expert has any "practical" experience with similar technology other than the individuals directly involved in the demonstration project. Additionally, since the company has not provided either engineering

reports or data related to its experience on the prototype project for this technology, Red Leaf is essentially arguing that it is impossible for anyone other than company personnel and its consultants to have an informed opinion on its proposal.

In offering his expert opinion, Mr. Kuipers is relying on his considerable practical experience with analogous mineral processing operations where containment systems similar to those being proposed have been employed. Mr. Kuipers' experience includes BAS liners for tailings and heap leach operations, typically 6-12 inches in depth, without or in combination with geomembrane liners. Mr. Kuipers is also relying on his experience in the design and operation of mercury retort systems, which function on the same fundamental physical and chemical principles as the proposed system, and which extract gas and liquid phase products from solid materials. Mr. Kuipers has extensive expertise with respect to the design, operation and performance of these systems, and the practices he is familiar with are standard technology in typical metals mining mineral processing applications.

In preparing for his expert testimony, Mr. Kuipers conducted extensive research on the proposed BAS system and found no similar designs, either in terms of the proposed system itself, or in terms of the proposed application. Based on the factual paucity of information available regarding the capsule technology or BAS system, from either reliable sources or from the proponent itself, Mr. Kuipers did what any qualified expert would do in accordance with industry practice – he used analogs and applied his knowledge and experience with respect to those analogs in order to evaluate the proposed technology and form his opinions.

In contrast to Red Leaf's assertion that Mr. Kuipers has been associated with advocacy rather than production after leaving the industry in 1996, since that time Mr. Kuipers has been the principal of his own engineering and consulting firm which has provided technical assistance

on a wide range of subjects to a variety of clients. While some of those clients have included public interest organizations, he has also done extensive work for county, state, federal and tribal governments, as well as foreign governments, and for industry service providers such as insurance and banking firms. Since leaving the industry, Mr. Kuipers' work has focused on mine and mineral process facility permitting, operations monitoring, reclamation and closure, as well as related cost estimation.

In contrast to Red Leaf's assertion that he has no experience or training in engineering geology, mining engineering, or civil engineering, Mr. Kuipers has functioned in the role as the principal responsible party for containment systems designs for tailings and heap leach facilities, which required a thorough knowledge of related engineering geology, mining engineering and civil engineering aspects of those designs, particularly with respect to their reliability. He has participated in the evaluation of numerous containment facilities, where his knowledge of overall fundamental engineering principles – including geological, mining and civil engineering – as well as an intimate knowledge of chemical, biological, hydrometallurgical, pyrometallurgical and environmental engineering, have been applied. It is this experience and training, in addition to his extensive professional experience and his experience with analogous technologies and applications, that Mr. Kuipers used to form the basis for his opinions about the capsule system and BAS liner contained within Red Leaf's proposal.

In contrast to Red Leaf's assertion that Mr. Kuipers' opinions regarding the stability of the backing walls and the integrity of the BAS liner are unreliable because he has not evaluated comparable designs, Mr. Kuipers will testify that it is well established in the literature, and is basic engineering knowledge, that bentonite, as well as many other soil and soil-like materials' physical and chemical properties, will be adversely affected by conditions such as heat and

pressure. He will also testify that it is well established that changes in physical and chemical properties can lead to geotechnical stability issues, particularly in critical design areas. Because he was unable to locate any similar design and therefore could not evaluate test data or information from anything comparable, he used standard engineering principles and his analogous experience to form the basis for his concerns.

As noted above, Mr. Kuipers' experience includes liner system designs consisting of soil and amended soil materials alone, in addition to those using geomembranes. Based on his experience with similar containment materials, Mr. Kuipers will testify that there is no fundamental scientific reason why the proposed BAS system would not be susceptible to the physical and chemical processes which have been shown to cause degradation of soil and amended soil liners in other applications and that could lead to the instability of the floors, walls, or ceilings of the proposed capsules.

III. Mr. Kuipers has the Necessary Economic Training and Expertise to Form the Basis for a Reliable Opinion on the Economic Viability of Red Leaf's Capsule Design

In contrast to Red Leaf's assertion that he has no economic training or expertise that would lend credence to his opinion of the economic viability of Red Leaf's capsule design, Mr. Kuipers' opinion regarding the economic viability of Red Leaf's capsule design relies on standard industry cost-estimating practices consistent with the fundamentals of engineering cost analysis and on his economic education and training as a professional engineer. Mr. Kuipers has over 25 years' experience in cost-estimation related to the range of phases particular to mine and technological development, including research and development, design and implementation, capital construction, operations, reclamation, closure, and long-term post-closure. As noted in his extensive resume, Mr. Kuipers has published, provided presentations on, and provided

training courses on the matter of mine and mineral processing facility reclamation and closure cost estimation and financial assurance.

One example for the Board's consideration is his current involvement as a participant in the New Mexico Water Quality Commission's Copper Mines rule-making process. Mr. Kuipers serves as a primary source of technical and regulatory expertise on both the Technical Advisory Committee and the Advisory Committee responsible for drafting rules for the Commission. In these capacities, he provides expertise in the areas of state-of-the-art containment designs and specifications, which commonly use bentonite-amended soils or similar designs for heap leach, tailings, waste rock, solution impoundments and other mine and mineral process facilities relative to groundwater discharge permit requirements. He also provides his expertise to the committees in the areas of reclamation and closure as well as financial assurance cost estimation. Mr. Kuipers similarly offers his expertise to the Board in this matter. Notwithstanding his extensive experience with containment systems and retorting processes based on standard mining and mineral processing, Mr. Kuipers concedes that there is an important distinction between past experience and what is being proposed by Red Leaf. However, these differences do not detract from the validity of his testimony.

Mr. Kuipers has over 30 years' experience working in the mining industry, and over 40 years' experience if his family mining background is included. Anyone with a similar length of association with mining knows that the industry as a whole is highly susceptible to failures, including economic failures leading to company bankruptcy. While Mr. Kuipers is not privy to the specific financial situation of Red Leaf, and does not intend to testify regarding the company's financial viability, he does have both personal experience as an employee of a bankrupt mining operation and professional experience advising various government entities on

the economic considerations of failed mines. It is based on his significant engineering and business experience in the development of novel technologies such as the capsule and BAS system proposal that he offers his opinion on the high-risk nature of such proposals in terms of the likelihood of both technical and economic failure.

IV. A Discussion of the Adequacy of the Reclamation Bond is Directly Relevant to the Matter Before the Board

Throughout this matter, and specifically in its Request for Agency Action, Living Rivers has consistently pointed to the possibility of the failure of Red Leaf's capsule design, the resultant release of deleterious materials into the environment, and the resultant impact of the release of those deleterious materials on local ground water resources. Living Rivers has also consistently pointed to the inadequacy of the information provided by the company in its Notice of Intention (NOI) regarding its ability to properly reclaim the area following mining operations. Living Rivers was not required in its initial pleading to provide expert testimony regarding specific deficiencies in the company's reclamation plan. Rather, testimony specific to the shortfalls in the company's reclamation plan is properly presented during the formal hearing process before the Board. Mr. Kuipers therefore offers his detailed expert opinion on the inadequacy of the reclamation plan based on the impacts resulting from the deficiencies of Red Leaf's capsule design.

V. It is Proper for Mr. Kuipers to Refer to the Draft PEIS in His Testimony

Mr. Kuipers used the Oil Shale and Tar Sands Draft Programmatic Environmental Impact Statement (Draft PEIS) to demonstrate that a broad programmatic assessment identified that oil shale development might result in sources of contamination leading to degradation of groundwater. Mr. Kuipers will testify that the Draft PEIS only confirms what is clearly obvious in terms of a contaminant source and receptor relationship. The findings within the Draft PEIS

on which Mr. Kuipers relied are based on referenced information which an engineer would use. In forming his opinions, Mr. Kuipers also used the Draft PEIS to confirm his own findings – based on his extensive research – that no similar oil-shale technology had been previously proposed or demonstrated, and that even those developed by major energy companies had not proven to be economically viable. Because of the nature of this government report, testimony related to information contained within the Draft PEIS is properly before this Board pursuant to Utah R. Evid. 803(8).

Based on the arguments outlined above, Living Rivers respectfully requests that this Board deny Red Leaf's Motion in Limine related to the testimony of Mr. Kuipers. Respectfully submitted this 20th of June, 2012.

ROB DUBUC
JORO WALKER
Attorneys for Living Rivers

CERTIFICATE OF SERVICE

I hereby certify that on this 20th day of June, 2012, I served a true and correct copy of this Memorandum in Opposition to Red Leaf's Motion in Limine by email and via first-class mail to Julie Ann Carter, Secretary to the Board of Oil, Gas and Mining,

Julie Ann Carter
Utah Oil, Gas and Mining
1594 W North Temple, Ste 1210
PO Box 145801
Salt Lake City, UT 84114
juliecarter@utah.gov

and to each of the following persons via email:

Dana Dean
Associate Director of Mining
Division of Oil, Gas & Mining
1594 West North Temple, Ste 1210
Salt Lake City, UT 84116
danadean@utah.gov

Denise A. Dragoo
Snell & Wilmer, LLP
15 West South Temple, Ste 1200
Salt Lake City, UT 84101
ddragoo@swlaw.com

Steven Alder
Utah Assistant Attorney General
1594 West North Temple
Salt Lake City, UT 84114
stevealder@utah.gov

ROB DUBUC