

---

**BEFORE THE EXECUTIVE DIRECTOR OF  
THE UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY**

---

In the Matters of:

Red Leaf Southwest #1 Mine  
Ground Water Discharge Permit and  
Construction Permit Associated with  
Ground Water Discharge Permit  
No. UGW470002

Order Adopting Findings of Fact,  
Conclusions of Law and  
Recommended Order

April 19, 2016

---

On August 11, 2014, Petitioners Living Rivers, the Southern Utah Wilderness Alliance, Grand Canyon Trust, Great Old Broads for Wilderness, and the Sierra Club (collectively "Living Rivers") timely refiled a consolidated request for agency action challenging the December 20, 2013, Ground Water Discharge Permit, Permit No. UGW470002, and the May 30, 2014, Construction Permit, No. UGW470002, issued by the Director of the Division of Water Quality ("Director") to Red Leaf Resources, Inc. ("Red Leaf") to allow Red Leaf to construct and test its Ecoshale In-Capsule™ technology to extract kerogen (petroleum) from oil shale at its open pit Southwest #1 Mine in Uintah County, Utah.<sup>1</sup> Pursuant to UTAH CODE ANN. § 19-1-301.5, Carol Clawson was appointed as the administrative law judge to conduct a permit review adjudicative proceeding in accordance with UTAH CODE ANN. § 19-1-301.5 and UTAH

---

<sup>1</sup> Doc. 20, WQ001252-65, Ground Water Discharge Permit No. UGW470002 (effective December 20, 2013); Doc. 29, WQ001573-1666, Letter to Jay Vance from Walter L. Baker, P.E. Subject: Construction Permit for Red Leaf Resources Early Production System (EPS) Capsule Located in the SE ¼ of Section 20, T. 13 S., R. 23 E., Salt Lake Base Meridian (May 20, 2014). The Ground Water Discharge Permit and Construction Permit authorize Red Leaf to construct, operate and close a single "Early Production System" test capsule to allow Red Leaf to evaluate the capsule technology. Red Leaf must modify its permits to construct any additional capsules for commercial operation. Doc. 20, WQ001266 ((Statement

ADMIN. CODE R305-7. On January 19, 2016, Administrative Law Judge Clawson issued *Findings of Fact, Conclusions of Law and Recommended Order* (“*Recommended Order*”).

I received no comments from the parties regarding the *Recommended Order*. I have reviewed the Recommended Decision and pertinent portions of the adjudicatory and administrative records and independently considered this matter.

### Standard of Review

Having received the Administrative Law Judge’s *Recommended Order* (proposed dispositive decision), I may now: (1) adopt, adopt with modifications or reject the proposed dispositive decision; or (2) return the proposed dispositive decision to the Administrative Law Judge for further action as directed.<sup>2</sup> I must “uphold all factual, technical, and scientific agency determinations that are not clearly erroneous based on the [Petitioners’] marshaling of the evidence.”<sup>3,4,5</sup>

---

of Basis, Red Leaf Resources Southwest #1 Oil Shale Mine, Ground Water Discharge Permit No. UGW470002).

<sup>2</sup> UTAH CODE ANN. § 19-1-301.5(14)(a).

<sup>3</sup> UTAH CODE ANN. § 19-1-301.5(14)(b).

<sup>4</sup> A finding is clearly erroneous if that “finding is without adequate evidentiary support or was induced by an erroneous view of the law.” *R.V. v. L.B.*, 2014 UT App 270, ¶ 26, 339 P.3d 137 (citing *Halve v. Big H. Constr., Inc.*, 2012 UT App 283, ¶ 9, 288 P.3d 1046; see also *Recommended Order* at 2 (citing *R.V. v. L.B.*, 2014 UT App 270 ¶ 26; *United States v. U.S. Gypsum Co.*, 333 U.S. 364, 395 (1948) (internal quote omitted)).

<sup>5</sup> Petitioners have a duty to marshal the evidence. UTAH CODE ANN. § 19-1-301.5(14)(b). Respondents assert that Petitioners failed to marshal all the evidence; nevertheless, the Administrative Law Judge, in her discretion, did not address whether Petitioner properly marshalled the evidence. *Recommended Order* at n.1. Similarly, I find it unnecessary to address whether Petitioner properly marshalled all the evidence to reach my decision in this matter.

## ORDER

**WHEREFORE**, it is ORDERED that the January 19, 2016, *Findings of Fact, Conclusions of Law and Recommended Order* in its entirety is ADOPTED and INCORPORATED as if fully set forth herein, with the following typographical or citation corrections:

1. All citations to "Utah Code" should be "Utah Code Ann."
2. Page 1, first ¶, citation should be "Utah Code Ann. § 19-1-301.5 (2015)."
3. Page 1, the date that UGW470002 Ground Water Discharge Permit was "signed and authorized" should be December 20, 2013.
4. Page 2, ¶ 1, "Petitioner's" should be "Petitioners'."
5. Page 2, ¶ 1, citation should be "Utah Code Ann. § 19-1-301.5(13)(c)."
6. Page 2, last ¶, quote should be "uphold all factual, technical, and scientific agency determinations that are not *clearly erroneous* based on the petitioner's marshaling of the evidence."
7. Page 3, ¶ 1, first case citation should be "*R.B. v. L.B.*, 2014 UT App 270, ¶ 26, 339 P.3d 137."
8. Page 3, ¶ 1, last case citation should be "*State ex rel. Z.D.*, 2006 UT 54, ¶ 38, 147 P.3d 406."
9. Page 3, ¶ 2, case citation should be "*Utah Chapter of the Sierra Club v. Bd. Of Oil, Gas, and Mining*, 2012 UT 73, ¶ 10, 289 P.3d 558."
10. Page 3, last ¶, citation should be "Utah Code Ann. § 19-1-305.1."
11. Findings of Fact ¶ 5 (page 5), citation should be "Utah Code Ann. § 19-5-102(8)(a)."
12. Findings of Fact ¶ 6 (page 5), "June 21, 2014" should be "June 21, 2013."
13. Findings of Fact ¶ 8 (page 5), "monitoring data" should be "monitoring plan."

14. Findings of Fact ¶ 10 (page 6), last citation, "Add. Cmt. Resp." should be "Supp. Cmt. Resp."
15. Findings of Fact ¶ 11 (page 7), "DPS" should be "EPS."
16. Findings of Fact ¶ 19 (page 8), last citation should be "Supp. Cmt. Resp., WQ001769, 1776."
17. Findings of Fact ¶ 20 (page 8), after second sentence, insert "*See Order Re: Motion to Strike Surreply and Cross Motion to Strike Portions of Reply Brief* (November 14, 2015)."
18. Findings of Fact ¶ 20 (page 8), last sentence should read "Red Leaf moved to strike portions of Living Rivers' Reply . . . ."
19. Findings of Fact ¶ 21 (page 9), include "WQ000209" with citations.
20. Findings of Fact ¶ 25 (page 10), first citation should be "SOB, WQ001268; Ap., WQ000111-115, 124-125."
21. Findings of Fact ¶ 29 (page 11), "water courses" should be "watercourses," "thereof" should be "of the state" and "identical" should be "substantively identical."
22. Findings of Fact ¶ 32 (page 12), last citation "1280" should be "1297."
23. Findings of Fact ¶ 33 (page 13), citation should be "See SOB, WQ001269-72."
24. Findings of Fact ¶ 37 (page 14), include "Permit, WQ001253" with citations on first line.
25. Findings of Fact ¶ 37 (page 14), citation "Hearing Tr. T104:5-13" should be "Oral. Arg. Trans., T105:4-12 (November 24, 2015)."
26. Findings of Fact ¶ 39 (page 14), "Figure 7" should be "Figure 5."
27. Findings of Fact ¶ 39 (page 14), last citation should be "Ap., Fig. 5, WQ000130."
28. Findings of Fact ¶ 40 (page 15), "may" should be "[may]" and "sedimentary column, depending" should be "sedimentary column . . . ., depending."

29. Findings of Fact ¶ 42 (page 16), citation "1281-82, 84-86, 90-92" should be "Cmt. Resp., WQ001281-82, 84-86, 90-92, 93, 96."
30. Findings of Fact ¶ 43 (page 16), last citation should be "WQ001293."
31. Findings of Fact ¶ 44 (pages 16-17), the quote should be:

Red Leaf [] investigated ground water conditions in the shallow subsurface [] with a drilling program[,] aquifer testing and water quality sampling . . . Red Leaf drilled six rotary holes designed to be completed as monitor wells. Each boring was drilled to an unnamed sandstone unit that occurs beneath the B Groove. Five of these six monitor wells displayed evidence of water in the upper and lower parts of the bore holes. To evaluate possible ground water occurrences in the horizons penetrated in the upper parts of the bore holes, a shallower boring was drilled adjacent to each of these five deeper monitor wells, resulting in a total of eleven monitor wells with pairs of shallow and deep wells completed at the same sites. After drilling, water levels in the wells were allowed to stabilize and aquifer tests were conducted on those wells . . . A recovery test was also conducted in suitable wells . . . Hydraulic conductivities of the surrounding rocks were estimated from this data and [results] in the six wells tested ranged from  $1.42 \times 10^{-7}$  to  $9.52 \times 10^{-7}$  cm/sec. SOB, WQ001270; Ap., WQ000139-144, Fig. 7, WQ000140.

32. Findings of Fact ¶ 46 (page 17), last citation should be "Ap., WQ000143, App. D, WQ000243-245; Supp. Cmt. Resp., WQ001777."
33. Findings of Fact ¶ 47 (page 17), after second sentence, add "Utah Admin. Code R317-6-3.7" to first citation.
34. Findings of Fact ¶ 47 (page 17), last citation "Ap., WQ000144" should be "Ap., WQ000144, 294-296."
35. Findings of Fact ¶ 48 (page 17), citation "1783" should be "1783-84."
36. Findings of Fact ¶ 49 (page 18), first citation "WQ000206-247" should be "Ap., WQ000206-240, 139."
37. Findings of Fact ¶ 49 (page 18), second citation "WQ000241-440" should be "Supplemental Seep and Spring Inventory, WQ000412-440."

38. Findings of Fact ¶ 49 (page 18), quote in last sentence should be "understand . . . the occurrence of seep and springs and to locate any previously unreported water sources in the inventory area."
39. Findings of Fact ¶ 49 (page 18), last citation "WQ00418" should be "WQ000418."
40. Findings of Fact ¶ 50 (page 18), first citation "Ap., App. D, WQ00206 *et. seq.*" should be "Ap., App. D, WQ000206 *et. seq.*."
41. Findings of Fact ¶ 51 (page 18), first line, insert quotation mark between "the" and "water."
42. Findings of Fact ¶ 51 (page 18), first citation should be "SOB, WQ001270; see also Ap., App. D, WQ000206; Supplemental Seep and Spring Inventory, WQ000412-440."
43. Findings of Fact ¶ 51 (page 18), last citation should be "SOB, WQ001270; Cmt. Resp., WQ001351-52."
44. Findings of Fact ¶ 52 (page 19), citation should be "Supp. Cmt. Resp., WQ001778-1785; SOB, WQ001270; Cmt. Resp., WQ001294-1297."
45. Findings of Fact ¶ 54 (page 19), last sentence "protection of" should be "to protect."
46. Findings of Fact ¶ 55 (page 19), first sentence should read "As previously noted, the samples from ten of the eleven wells drilled near the site show TDS levels ranging from 20,600 to 58,600 mg/l."
47. Findings of Fact ¶ 55 (page 19), citation should be "SOB, WQ001271; Supp. Cmt. Resp., WQ001783-84; see also Ap., WQ000249-286."
48. Findings of Fact ¶ 56 (page 20), should read: The evidence also supports the Director's conclusion that any discharges from the mine site would be of better quality than the shallow ground water (Supp. Cmt. Resp., WQ001787; Ap., WQ000306-393) and that the "time frame for any liquid to discharge from the capsule is on the order of hundreds of years." Cmt. Resp., WQ001290-1291, 1349 ("time necessary . . . to reach field capacity, . . . 911 years").
49. Findings of Fact ¶ 57 (page 19), citation to second sentence should be "Permit, WQ001253."

50. Findings of Fact ¶ 57 (page 19), "WQ001278; Oral Arg. Trans., T104:5-13" should be "Cmt. Resp.; WQ001278; Oral. Arg. Trans., T105:4-12."
51. Findings of Fact ¶ 60 (page 21), include with citation "SOB, WQ001278."
52. Findings of Fact ¶ 68.a. (page 23), citation should be "Permit, WQ001254."
53. Findings of Fact ¶ 68.g. (page 24), both occurrences of "compaction" should be "[compaction]."
54. Findings of Fact ¶ 70 (page 24), citation "Const. Ap., WQ001456-1544" should be "Const. Ap., WQ001456-42."
55. Findings of Fact ¶ 75 (page 26), first citation "Cmt. Resp., WQ001292-94" should be "Cmt. Resp., WQ001292-98, 1278, 1280-82."
56. Findings of Fact ¶ 75 (page 26), second citation "*Id.*" should be "Cmt. Resp., WQ001293-94."
57. Findings of Fact ¶ 76.d. (page 27), citation "Ap., WQ000139-143" should be "Ap., WQ000136, 143-144" and "Supp. Exp. Resp." should be "Supp. Cmt. Resp.."
58. Findings of Fact ¶ 77 (page 27), first citation should be "Cmt. Resp., WQ001281, 1294-1296, 1312, 1351-1352; Supp. Cmt. Resp., WQ001779, 1782-83, 1785."
59. Findings of Fact ¶ 77 (page 27), second citation "SOB, WQ001271" should be "SOB, WQ001270-71."
60. Conclusions of Law ¶ 2 (page 29), citation "1271, 1272" should be "SOB, WQ001271-72; Cmt. Resp., WQ001281."
61. Conclusions of Law ¶ 4 (page 29), citation "Trans. T104:5-13" should be "Oral. Arg. Trans. T105:4-12."
62. Conclusions of Law ¶ 6 (page 2), quotation should read as follows:  

[The] monitoring plan, sampling and reporting requirements are satisfied because Red Leaf has evaluated which contaminants may be leached from spent shale [that comes into] contact with rainwater or snowmelt. [The] analysis showed some metals and organic compounds may leach from spent shale, and the leachate will likely have a high pH.

These tests further showed low levels of [TDS] and non-detectable results for most metals and organic compounds. To [] fully evaluate which contaminants may be present in leachate, additional analyses are required in the permit as described in the SOB Part VI. The permit requires [representative sampling of] capsule contents . . . for a specific suite of organic and inorganic parameters. The sampling method will be determined following Red Leaf's assessment of capsule conditions following cooling.

It is further ORDERED that the *Order Re: Motion to Strike Surreply and Cross Motion to Strike Portions of Reply Brief* (November 14, 2015) is AFFIRMED.

It is further ORDERED that ALJ Clawson's recommended finding that "Petitioners cannot satisfy the four elements for a stay" is AFFIRMED and ADOPTED.<sup>6</sup>

It is further ORDERED, for the reasons stated in the *Recommended Order*, that Ground Water Discharge Permit, No. UGW470002, issued to Red Leaf Resources, Inc., effective December 20, 2013 is AFFIRMED.

It is further ORDERED, for the reasons stated in the *Recommended Order*, that Construction Permit for Red Leaf Resources Early Production System (EPS) Capsule, issued May 30, 2014, is AFFIRMED.

It is further ORDERED, for the reasons stated in the *Recommended Order*, that Living Rivers' *Motion and Memorandum Requesting Stay of the Permits* (April 13, 2015) is DENIED.

And, it is further ORDERED, for the reasons stated in the *Recommended Order*, that *Consolidated Request for Agency Action*, filed by Living Rivers, the Southern Utah Wilderness Alliance, Grand Canyon Trust, Great Old Broads for Wilderness, and Sierra Club, on August 11, 2014, is DENIED and HEREBY DISMISSED WITH PREJUDICE.

## Notice of Right to Petition for Judicial Review

Judicial review of this final ORDER may be sought in the Utah Court of Appeals in accordance with Sections 63G-4-401, 63G-4-403, and 63G-4-405 of the UTAH CODE ANN. and the UTAH RULES OF APPELLATE PROCEDURE by filing a proper petition within thirty (30) days after the date of this ORDER.

DATED this 19<sup>th</sup> day of April 2016.



ALAN MATHESON  
Executive Director  
Utah Department of  
Environmental Quality

---

<sup>6</sup> *Recommended Order at 31.*

**CERTIFICATE OF SERVICE**

I hereby certify that on this 19<sup>th</sup> day of April 2016, I caused a copy of the foregoing *Order Adopting Findings of Fact, Conclusions of Law and Recommended Order* to be delivered via electronic mail to the following:

Carol Clawson  
Administrative Law Judge  
[clawsonlaw@centurylink.net](mailto:clawsonlaw@centurylink.net)

Administrative Proceedings  
Record Officer  
Utah Department of  
Environmental Quality  
[DEQAPRO@utah.gov](mailto:DEQAPRO@utah.gov)

Denise A. Dragoo  
Stewart O. Peay  
Stephen W. Smithson  
Snell & Wilmer L.L.P.  
Attorneys for Red Leaf  
Resources, Inc.  
15 West South Temple, Suite 1200  
Gateway Tower West  
Salt Lake City, Utah 84101  
[ddragoo@swlaw.com](mailto:ddragoo@swlaw.com)  
[speay@swlaw.com](mailto:speay@swlaw.com)  
[ssmithson@swlaw.com](mailto:ssmithson@swlaw.com)  
(Additional copy via U.S. mail)

Paul M. McConkie  
Sandra K. Allen  
Utah Attorney General's Office  
Attorney's for the Director of the  
Division of Water Quality  
195 North 1950 West, Second Floor  
Salt Lake City, Utah 84116  
[pmcconkie@utah.gov](mailto:pmcconkie@utah.gov)  
[skallen@utah.gov](mailto:skallen@utah.gov)

Walt L. Baker, Director  
Utah Division of Water Quality  
195 North 1950 West, Third Floor  
Salt Lake City, Utah 84116  
[Wbaker@utah.gov](mailto:Wbaker@utah.gov)  
(Additional copy via hand delivery)

Joro Walker  
Charles R. Dubuc, Jr.  
Western Resources Advocates  
Attorneys for Living Rivers, *et al.*  
150 South 600 East, Ste. 2A  
Salt Lake City, Utah 84102  
[jwalker@westernresources.org](mailto:jwalker@westernresources.org)  
[rob.dubuc@westernresources.org](mailto:rob.dubuc@westernresources.org)

---

/ s / Shane Bekkemellom  
Shane Bekkemellom