

PROTEST

PROTEST FEE PAID

\$15.00 25-03529

Fee Rec'd BY: ONLINE

July 14, 2025

Protestant: BLM WEST DESERT DISTRICT
c/o JARED DALEBOUT
491 N JOHN GLENN RD
SALT LAKE CITY, UT 84116

RE: Protest of Water Right Application 18-795

A hearing is requested.

Please refer to attached letter.

JARED DALEBOUT

Enclosure

RECEIVED

JUL 14 2025

WATER RIGHTS

ONLINE

SCANNED



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Utah State Office
440 West 200 South, Suite 500
Salt Lake City, UT 84101-1434

In Reply Refer To:
L1160 (UT-933)

July 15, 2025

DELIVERED ELECTRONICALLY

Teresa Wilhelmsen, P.E., State Engineer
Utah Division of Water Rights
P.O. Box 146300
1594 West North Temple, Suite 220
Salt Lake City, UT 84114-6300
waterrights@utah.gov

Subject: Bureau of Land Management (BLM) Protest to Application to Appropriate A84685 (Water Right No. 18-795)

Dear Ms. Wilhelmsen:

The following protest is being submitted on behalf of the Bureau of Land Management (BLM) concerning Application to Appropriate A84685 (Water Right No. 18-795) (Application), filed by Lithium Snake, LLC (Applicant) of 611 Sage Thrasher, San Antonio, TX 78523. A credit card payment in the amount of \$15.00 has been made to cover the protest filing fee.

According to the Division of Water Rights' (Division's) online database, the Applicant seeks to divert up to 4,500 acre-feet per year (AFY) of water from four yet-to-be-developed wells that will be constructed from 1,000 to 5,000 feet in depth. The proposed wells are located in Section 1, T16S R19W, SLBM. The Applicant proposes to use the wells for lithium extraction from January 1 to December 31 annually, and states that the completed project will consist of one production well and one injection well. The Application states that the Applicant does not propose to divert fresh water and instead seeks to divert lithium brine.

The BLM protests the Application for the following reasons:

- 1. BLM is not opposed to the development of lithium resources, but BLM is very concerned that development of lithium resources in this location will likely interfere with groundwater rights and surface water rights owned by BLM and other parties. BLM has this concern because it is well established in scientific literature that the shallow alluvial aquifer, which is the source for groundwater rights from wells and for**

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surface water rights from springs in Snake Valley, is in direct communication with the underlying carbonate aquifer.

Communication Between Carbonate Aquifer and Alluvial Aquifers

Based on geologic maps, it appears that the Applicant's proposed wells would tap geologic formations comprised of dolomite that are below the shallow alluvial aquifer (United States Geological Survey (USGS), 2002). These dolomite formations are part of the carbonate aquifer that underlies much of the Great Basin. Communication between the carbonate aquifer and alluvial aquifer in the Great Basin Carbonate and Alluvial Aquifer System (GBCAAS) has been studied in Snake Valley. Those studies have concluded that aquifers in the consolidated carbonate bedrock and unconsolidated valley fill are generally well connected hydrologically and often act as a single aquifer unit. (Masbruch and Brooks, 2017, p.7).

Aquifer pump tests for deep wells screened within the carbonate aquifer are available in the Utah Geological Survey (UGS) Bulletin 135 which compiled data within Snake Valley. Chapter 7 of this report contains the results from a UGS-led aquifer pump test of an abandoned deep petroleum exploration well southeast of Garrison, Utah (Jordan et al., 2014). The prior well was drilled through about 470 feet of basin-fill sediments and about 2,000 feet of the Ely Limestone. The well was plugged at a depth of 1,340 feet, redeveloped, and several pump tests were conducted with the well open to the limestone from a depth of 520 to 1,340 feet.

Results from this test clearly showed that the observation well located within the basin-fill sediments experienced drawdown (~2 feet) due to the pumping well in the carbonate aquifer. These results indicate that the two aquifers are not isolated but are hydrologically connected (Jordan et al., 2014, p. 222). The results also showed that the aquifer transmissivity decreased with depth, indicating a three-fold reduction in transmissivity at the deepest interval (~1,200 feet depth). If there is a similar aquifer response at the pumping location proposed in the Application, it would indicate that the deep aquifer is not isolated from the shallow basin-fill sediments and that the aquifer will be less productive at greater well depths. Similarly, the USGS' GBCAAS Version 1.0 model simulated low vertical gradients between the two aquifers throughout much of this basin (Brooks and others, 2014, Figure 41), suggesting some level of hydrologic connection is expected between the two aquifers.

Due to this expected hydrologic connection between the shallow alluvial and deep carbonate-rock aquifer systems in the model, current pumping from the alluvial aquifer in Snake Valley may already be impacting the underlying carbonate aquifer by inducing upward leakage of groundwater from the carbonate aquifer to the alluvial aquifer. Pumping 4,500 AFY from depths below 1,000 feet as proposed in the Application could possibly induce downward leakage of groundwater from the alluvial aquifer. If downward leakage from the alluvial aquifer to the carbonate aquifer is induced by the proposed deeper pumping, this would likely accelerate downward trends in water levels that have already been observed in this portion of Snake Valley.

The broad range of pumping depths proposed by the Applicant, which could be anywhere from 1,000 to 5,000 feet below ground surface, does little to assure existing water rights owners that there will be no impairment to their water rights. The Applicant does not exclude the possibility that pumping could occur at depths shallower than the Applicant's current target of 4,900 below ground surface, if productive lithium layers are encountered at shallower depths. In addition, the Applicant does not point to any known geologic barriers between the proposed pumping depth and the shallow basin fill aquifer. Given the known communication between the shallow basin fill aquifer and deep carbonate aquifer, the only potential benefit of targeting deeper aquifer layers at 4,900 below ground surface is that the potential impacts on existing water rights might be somewhat delayed as the cone of depression would require more time to propagate through additional geologic layers. Finally, the Applicant does not provide any information concerning the percentage of pumped water that will be reinjected to the aquifer or at what depth reinjection will occur.

Groundwater Level Trends Near Gandy

The proposed pumping could exacerbate existing groundwater level declines and spring discharge declines that have been observed at locations within four miles of the proposed pumping. Monitoring at Well SG27A (USGS Monitoring Site 392756113563401) shows a gradual decline in groundwater levels since 2010. Monitoring of discharge from Gandy Salt Marsh North Spring (USGS Monitoring Site 392906113550301), Foote Reservoir Spring (USGS Monitoring Site 392456113521301), and Twin Springs South (USGS Monitoring Site 392411113514301) also show a gradual decline in discharge since 2010.

Groundwater modeling conducted by USGS also shows that springs in this area are likely to experience groundwater drawdowns based on existing and approved pumping in Snake Valley. For example, modeling predicts groundwater level drawdowns of one to three feet at Gandy Salt Marsh Seep (Water Right No. 18-759), Springs Feeding Salt Marsh Lake (18-537), and Gandy Salt Marsh Spring Complex (18-575) over the next 100 years (Masbruch and Brooks, 2017, Table 3, Sites 8, 9, and 10).

2. BLM believes that approval of the Application could impair multiple BLM water rights.

Achieving BLM's multiple-use mandate is highly dependent on discharge from springs, wells, and streams located in Snake Valley. BLM relies on these water sources to provide water for wildlife watering and habitat, livestock watering, wild horses, and recreation uses. BLM also relies on groundwater discharge to maintain the stability and productivity of phreatophyte communities.

Regardless of whether BLM's water rights rely upon discharge from the alluvial aquifer or carbonate aquifer, BLM believes that these water rights could be directly impaired by the proposed pumping. Impairment of BLM's water rights could occur through modification of carbonate aquifer conditions, which could impede upward leakage from the carbonate aquifer toward the land surface where flow can discharge from springs, streams, or wells.

Alternatively, BLM's water rights could be impaired if the proposed pumping induces downward leakage from the alluvial aquifer to the carbonate aquifer, removing water in storage that would otherwise discharge at springs, streams or wells.

The following is a list of BLM water rights that BLM believes are most likely to be impaired by the proposed pumping:

Water Right No.	Name	Type of Right	Amounts	Uses	Distance From Proposed Wells
18-328	Dave's Spring	Application to Appropriate	0.011 CFS 7.95 AFY	1000 ELUs 5 EDUs	5 miles
18-307	Water Well	Application to Appropriate	0.015 CFS	100 ELUs 5 EDUs	6 miles
18-476	Twin Springs	Diligence Claim	0.5 CFS	1,260 ELUs (Gandy Allotment) Wildlife	4 miles
18-579	Salt Marsh Seep	Diligence Claim	0.288 CFS 208.51 AFY	3541 ELUs (Gandy Allotment) Wildlife	4 miles
18-537	Unnamed Seeps	Diligence Claim	0.034 CFS	3541 ELUs (Gandy Allotment) Wildlife	4 miles
18-575	Salt Marsh Lake Spring Complex (36 Points of Diversion)	Diligence Claim	2.98 CFS 2,161.14 AFY	3541 ELUs (Gandy Allotment) Wildlife	1 to 4 miles
18-623	Gandy Diversion (Warm Creek)	Segregation	0.02 CFS 14.48 AFY	Irrigation of 3.62 acres	5 miles
18-617	Warm Creek Point-To-Point	Diligence Claim	0.034 CFS	929 ELUs 2 EDUs Wildlife	4 miles

The springs listed in the table above also meet the standards that enable BLM to claim federal reserved water rights on each spring. Federal reserved water rights apply to important public springs and water holes and are reserved pursuant to Public Water Reserve (PWR 107) No. 107, 51 L.D. 457, Executive Order of April 17, 1926, under authority of Section 10 of the Stock-Raising

Homestead Act of December 29, 1916 (see 43 U.S.C. § 300 repealed Pub. L. 94-579, Title VII, § 704(a), October 21, 1976), and the Pickett Act of June 25, 1910 (see 43 U.S.C. § 141, repealed Pub. L. 94-579, Title VII, § 704(a), October 21, 1976). Although the Pickett Act and Section 10 of the Stock Raising Homestead Act were repealed by Section 704(a) of the Federal Land Policy and Management Act, withdrawals made prior to October 21, 1976, remain in effect until modified or revoked. BLM is continuing to review its records regarding the adjudication process in this watershed and the status of BLM's claims. If confirmed during an adjudication process, the federal reserved water rights would hold a 1926 priority date.

3. BLM is concerned that the Application does not comply with the Division's Appropriation Policy for Area 18.

The appropriation policy states:

Applicants are allowed to appropriate a limited amount of water up to the amount of water needed for: the irrigation of 136 acres (which is the acreage irrigated by a full pivot with end gun, 544 acre-feet); year-round domestic requirements of 1.0 equivalent domestic unit (0.45 acre-foot); and the stock watering of 200 head of livestock (in cattle or horses or equivalent species, 5.6 acre-feet). However, in an effort to protect the resource from over development, and to provide for an orderly and carefully monitored development of the water resource while carefully reviewing each application for speculation or monopoly in the Snake Valley area, applicants, their successors, or related entities will be limited to the quantities stated above which must be placed to beneficial use and certificated before any subsequent application can be approved.

BLM believes that the rationale behind the Area 18 policy is that the Division has not seen any scientific evidence supporting the contention that deep aquifers can be developed without substantial impacts to shallower aquifer systems in Area 18. The Division develops appropriation policies by calculating aggregate recharge to a groundwater basin and subsequently determining safe yield for all aquifers that underlie a groundwater basin. If there is evidence that an aquifer is hydrologically isolated from the other aquifers in the basin, and has unused water, the basin appropriation policy typically includes a provision that allows for development of that groundwater source. There is no such provision stated in the appropriation policy developed for Area 18.

BLM appreciates the Applicant's efforts to avoid and minimize impacts and impairment to other water users. However, BLM is concerned that the Application is based on substantial conjecture regarding deep subsurface conditions and that insufficient information has been presented in the Application to determine if deep groundwater may be available for new uses

without impairing existing uses. Accordingly, BLM believes that prior to permitting this water right, the Applicant should be required to provide scientific evidence demonstrating that deep aquifers exist and are isolated from the other aquifers in the basin such that they can be developed without impairment to existing water rights and water uses. Without such evidence, for which the Applicant carries the burden, the Area 18 policy cannot be modified to allow for approval of the Application.

For the reasons set forth in this section of the BLM protest, the Application does not appear to meet the statutory criteria of the Utah Code Ann. § 73-3-8, specifying that there must be unappropriated water at the source. In addition, the Application does not appear to comply with U.C.A. § 73-5-15, because the Applicant must provide scientific evidence supporting a change in safe yield.

4. Approval of the Application, as currently formulated, would likely be detrimental to public welfare.

Impacts To BLM Grazing Permittees

Springs located on BLM lands in the Gandy Salt Marsh area have been one of the very few reliable sources of water that are available without significant pumping and related infrastructure costs. Two permittees who are permitted to run livestock on the Gandy Grazing Allotment rely on discharge from these springs. Any substantial reduction or cessation of flow on these springs would likely necessitate burdensome, time-consuming, and expensive measures such as water hauling or the installation of a new underground water well (in an area where there is no readily available source of power) to enable the continued use of the allotment.

Impacts To Water-Dependent Sensitive Species

The area around the proposed pumping location provides habitat for a high number of water-dependent sensitive species. BLM has recognized the importance of this habitat by designating 2,270 acres in and around the Gandy Salt Marsh as an "Area of Critical Environmental Concern. (BLM, 1993). Similarly, the BLM and the State of Utah are signatories to "Conservation Agreement and Strategy for Least Chub," "Conservation Agreement and Strategy for Columbia Spotted Frog," and Conservation Agreement for Springsnails in Nevada and Utah (Utah Division of Wildlife, 2006, 2014, 2017). These agreements specifically recognize the importance of habitat for these two species in and around Gandy Salt Marsh and make a commitment to restoring and maintaining hydrologic conditions that support the two species.

The following table shows locations and species that could be impacted by the proposed pumping if groundwater levels, and spring discharge are reduced:

Location	Species Present	Species Type	Species Status
Bishop Spring / Twin Springs Complex	Columbia Spotted Frog Least Chub	Amphibian Fish	BLM Sensitive and State Species of Greatest Conservation Need
Gandy Salt Marsh Complex	Columbia Spotted Frog Least Chub	Amphibian Fish	BLM Sensitive and State Species of Greatest Conservation Need
South Twin Springs	Pyrgulopsis pilsbryana	Mollusk	BLM Sensitive and State Species of Greatest Conservation Need
North Bishop Springs	Cloaked Physa	Mollusk	BLM Sensitive and State Species of Greatest Conservation Need
Gandy Warm Springs	Sub-Globose Snake Pyrg	Mollusk	BLM Sensitive State Species of Greatest Conservation Need

If flows from these springs were to be reduced or cease, there would not only be significant impacts to sensitive aquatic species populations in this area, but also to terrestrial wildlife species. The springs located on BLM lands support substantial wetland, riparian, and terrestrial wildlife habitat in an arid valley. Species dependent on these springs include deer, pronghorn antelope, migratory and resident birds, pygmy rabbit, small mammals, amphibians, and aquatic insects.

For the reasons set forth in this section of the BLM protest, the Application does not appear to meet the statutory criteria set forth in Utah Code Ann. § 73-3-8, which specifies that the proposed use must not impair existing rights and would not prove detrimental to the public welfare.

5. Summary of BLM's Protest

As detailed above, the Application does not appear to satisfy the statutory criteria in U.C.A. § 73-3-8, which governs Applications to Appropriate. Specifically, the Application in its current format fails to meet the following criteria:

- There does not appear to be unappropriated water at the proposed source.
- The proposed use will likely impair existing water rights.
- The proposed plan would prove detrimental to public welfare.

BLM requests a hearing before the State Engineer on the Application so the Applicant has an opportunity to provide scientific evidence that the proposed pumping will not impair existing

water rights. If the Applicant meets this burden of proof, BLM will request specific terms and conditions in any approval that restrict pumping to aquifer layers that have been proven to be isolated from the alluvial aquifer that supplies BLM's water rights. BLM reserves the right to submit additional information and evidence in support of this protest at the hearing.

Please have a copy of any notice, correspondence, or decision concerning the Application mailed to me at the Bureau of Land Management, Utah State Office, 440 West 200 South, Suite 500, Salt Lake City, UT 84101.

Thank you for your consideration of this protest. Please contact me if you have questions at (801) 593-4015.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael D. Gates", with a stylized flourish at the end.

Michael D. Gates
District Manager
West Desert District

cc: VIA EMAIL

Cindy Ledbetter, Fillmore Field Office
Jared Dalebout, Utah State Office
Roy Smith, Colorado State Office

Literature Reviewed

BLM, 1987 and 1993. House Range Resource Management Plan and Record of Decision and amendments.

Brooks and others, 2011. Scientific Investigations Report 2010-5193. Conceptual Model of the Great Basin Carbonate and Alluvial Aquifer System. <https://pubs.usgs.gov/sir/2010/5193/>

Brooks and others, 2014. USGS Scientific Investigations Report 2014-5213: Steady-State Numerical Groundwater Flow Model of the Great Basin Carbonate and Alluvial Aquifer System. <https://pubs.usgs.gov/sir/2014/5213/pdf/sir2014-5213.pdf>

Brooks, 2017. USGS Scientific Investigations Report 2017-5072: Groundwater Model of the Great Basin Carbonate and Alluvial Aquifer System Version 3.0: Incorporating Revision from Southwestern Utah and East Central Nevada. <https://pubs.usgs.gov/sir/2017/5072/sir20175072.pdf>

Jordan, J.L., Inkenbrandt, P., Hurlow, H., and Sabbah, W., 2014, Aquifer tests, Chapter 7 in Hurlow, H., editor, Hydrogeologic studies and groundwater monitoring in Snake Valley and adjacent hydrographic areas, west-central Utah and east-central Nevada: Utah Geological Survey Bulletin 135, p. 195-232

Masbruch and Brooks, 2017. USGS Open File Report 2017-1026. Potential Effects of Existing and Proposed Groundwater Withdrawals on Water Levels and Natural Groundwater Discharge in Snake Valley and Surrounding Areas, Utah and Nevada

Utah Division of Wildlife, 2006. Conservation Agreement and Strategy for the Columbia Spotted Frog (*Rana luteiventris*).

Utah Division of Wildlife, 2014. Conservation and Strategy for Least Chub (*Lotichthys phlegethontis*).

Utah Division of Wildlife, 2017. Conservation Agreement for Springsnails in Nevada and Utah.