

The history of watershed enlightenment in southeast Utah

SEPTEMBER 04, 2009
BY JOHN WEISHEIT



J. J. WARD from a sketch by J. S. NEWBERRY.

T. H. BAKER & Son, Phila.

CASA COLORADO & LA SAL - MOUNTAINS.

**A tinted drawing from the Newberry report of 1876
John Macomb & John Strong Newberry**

The first professional geographer to explore the watershed of southeast Utah was **John Strong Newberry** in 1859, and specifically in today's San Juan County. The public would not immediately review Newberry's professional paper due to the outbreak of the Civil War, but the report was eventually published in 1876 and is available [here](#) and at [Google Books](#).

Newberry would later become a charter member of the National Academy of Sciences and the First Professor of Geology and Paleontology at Columbia University in New York.

Newberry was the expedition's physician and naturalist and started on horseback from Santa Fe, New Mexico under the command of **John N. Macomb** of the Army Corps of Topographical Engineers. The ultimate destination was the Confluence of the **Green River** and **Grand River** in what is now **Canyonlands National Park**.

In Newberry's day the combining flows of these two rivers was the mapmaker's beginning for the Colorado River. That beginning was moved in 1921 to the headwaters in the Rocky Mountains when the state of Colorado requested that the Grand River be **formally changed** to the Colorado River, which was amicably accepted by all interested parties.

Newberry and McComb never actually gazed upon the joining streams due to lack of time and resources in a rough and arid terrain, but they got close enough to recognize the drainage patterns correctly. They did succeed in naming some of the remaining blank spots for the map making project of the federal government. Newberry coined the name for this greater physiographic province we call the **Colorado Plateau**.

Newberry described the scientific importance of the Colorado Plateau by saying, "Nowhere on the earth's surface, so far as we know, are the secrets of its structure so fully revealed as here."

Captain John N. McComb, who shared the opinion from the viewpoint of conventional wisdom, declared the landscape as "worthless and impractical."

After this journey Newberry also wrote a paper on the geologic importance of the **Abajo Mountains**, which is a doming mountain structure caused by intrusive magma, but without an eruption on the surface (volcano). A protégé of Newberry, **Grove Karl Gilbert**, would study these types of mountains more thoroughly for the Powell Survey in 1875 at the Henry Mountains on the west side of the Colorado River in Wayne County. Gilbert called these mountains of granite, a **laccolith**. Southeast Utah has four laccolithic mountains and here arranged by descending height: **La Sals**, **Henry's**, **Abajos**, and **Navajo**.

The learning experience from this scientific expedition that first penetrated the watershed for understanding is: though the entire flow of the Colorado River headwaters consolidate here, the water is basically unattainable. In fact, no community, prehistoric or modern, relied on river water as their permanent source of drinking water. Instead, they use the groundwater and surface water that flows by gravity from the laccolithic mountains to the Colorado River complex of tributary streams.

The modern-day distribution of electricity and energy fuels has changed the natural paradigm somewhat for a few fortunate farmers who lift river water from the Colorado with mechanical pumps to irrigate crops (mostly alfalfa), but that only occurs where the river system is not entrenched in deep canyons. This activity occurs in Grand County where the Dolores River confluence serves as the center point of the radius, and along the San Juan River near Bluff.

The farms of Spanish Valley (Moab) are gravity fed by surface water from the La Sal Mountains and stored at **Ken's Lake**, which was completed in 1981. The farms near Monticello and Blanding likewise use surface water from the Abajos in reservoirs called **Monticello** and **Recapture**.

Additionally, mechanical pumps have allowed the municipalities to increase their yield of water flowing from the laccoliths for growth, but it is important to understand that this particular system has a natural advantage of working without electricity.

The National Surveys

Ten years after Newberry's visit, in 1869, additional gaps of knowledge were filled by [John Wesley Powell](#), who wisely consulted with Newberry beforehand in Washington DC. Powell's famous visit to the Confluence via river boats provided the proper latitude and longitude for the federal map makers.

A geographic reconnaissance of Grand County was not initiated by Powell's river trip, since he approached the Colorado Plateau via the Green River and not the Grand River. In 1875 a team of geographers on horseback, from a federal survey directed by [Ferdinand Hayden](#) (who did not participate in the trip), completed the first reconnaissance of Grand County. That team included [Henry Gannett](#), [James Gardner](#) and [Albert Peale](#), the latter whom the tallest peak of the La Sal Mountains is named after.

The country at the time was inhabited by roving tribes of the [Ute Nation](#) who were resistant to visits by foreign people. For example, the early [Mormon pioneers](#) in 1855, and the Hayden survey in 1875, did experience serious skirmishes with Ute warriors in Grand and San Juan Counties.

In the late 1870s reservations for the Ute Nation were established, which allowed development of southeast Utah to begin. Unfortunately, the dominant white society discovered mineral wealth in the original reservation lands and consequently the treaties were greatly modified to the disadvantage of the Utes. Ironically, more modern discoveries of oil and gas reserves in the San Juan River basin have since made the [Southern Utes](#) one of the richest tribes in the United States.

The Reclamation Era

The national surveys that immediately followed the Civil War were consolidated into one agency by 1879 and called the United States Geological Survey (USGS). Click [here](#) for a history of the USGS.

The first director of the Survey was [Clarence King](#), who was replaced by John Wesley Powell in 1881. Much of the focus by the USGS in the West was to provide data and maps for the development of water resources.

In the same year the USGS was formed, Powell's national survey was the first to publish a comprehensive water resource document called [Lands of the Arid Region of the United States with a more detailed account of the lands of Utah](#). The later publications of the USGS were a series called Water Supply Papers (WSP).

For the Colorado River basin one of the first comprehensive Water Supply Papers was written by E. C. La Rue in 1916 ([WSP 395](#)), which quantified the annual yield of the

river's water supply and also recommended potential damsites, including locations in Grand and San Juan Counties. In 1914, LaRue completed several river trips in Canyonlands by paddlewheel with boatman Tom Wimmer. Click [here](#) to read a report (1969) on potential damsites in Grand and San Juan Counties.

In 1917 the upper basin of the Colorado River was mapped in detail and published under the direction of W. H. Herron in [WSP 396](#) (detailed maps of this survey are not yet available on the worldwide web).

From 1921 to 1923 the USGS partnered with Southern California Edison and Utah Power and Light for mapping the whitewater canyons of the Green, Colorado and San Juan Rivers for dams and power plants. They hired local boatmen from southeast Utah, such as [Bert Loper](#) and [Elwyn Blake](#). See also [Colorado Riverbed Case](#).

The Water Supply Papers from these river surveys are as follows:

[WSP 538](#) (1924) by Hugh D. Miser: The San Juan Canyon, southeastern Utah, a geographic and hydrographic reconnaissance.

[WSP 556](#) (1925) by E. C. LaRue: Water power and flood control of the Colorado River below Green River, Utah.

[WSP 617](#) (1929) by Robert Follansbee: Upper Colorado River and its utilization.

[WSP 618](#) (1930) by Ralf R. Woolley: The Green River and its utilization.

As it turned out, most of the dams proposed in Grand or San Juan Counties were never built, but Arizona's Glen Canyon Dam and reservoir, Lake Powell, did drown the Colorado River canyons of San Juan County.

Mineral and Petroleum Exploration

The USGS also sent surveys into southeast Utah to assess the potential for mineral and petroleum development. These surveys defined federal lands that would be reserved for the [stockpiling of natural resources](#) for national defense, such as the oil shale reserves of the Uinta Basin to the north and the helium reserves of the San Rafael Swell to the west. Prior to, and after World War II, uranium studies too were a dominant focus of many USGS scientists.

Oil and gas exploration occurred as early as 1909 with limited success. Oil and gas traps were typically exhausted before profits materialized. In fact [Harry Aurand](#), a petroleum geologist, always felt the Canyonlands region had more economic potential as a national park than as an oil field, and championed that alternative with the Department of Interior in 1934.

Technology has recently increased the yield of petroleum products in the region, but these increases will have absolutely no effect on resolving our difficult energy problems, and the industry's impacts will actually contribute more harm to our quality of life in the

long-term.

The **uranium industry** is a good example of extraction causing more harm than good. Though uranium ore brought short-term prosperity to southeast Utah after World War II, it must be realized that uranium has always been a scarce mineral in the United States. Its extraction was completely subsidized by the federal government, whose incentive was to stockpile the rare metal at any and all costs for nuclear weapons superiority. In return the community was left with a legacy of human health problems and radioactive pollution that accrued yet another layer of financial burden for the nation's taxpayers to care and clean-up for.

Additionally, **oil shale development** has been a potential extractive industry for this area and since World War II. If full development arises, it will wreck havoc on the scarce, water supplies of the Colorado River, destroy the surface of this sensitive landscape and, more importantly, direct us from investing the nation's financial resources toward energy development that will contribute to reduced greenhouse gases for our warming atmosphere.

Conclusion

Times have, and have not, changed since Newberry and McComb struggled over tortuous canyons for a view of the mighty Colorado River in 1859. I do think that Newberry had the better attitude of the two. Newberry did not pass instant and condescending judgement on this landscape as did McComb. Newberry had a keen desire to discover what the watershed is and isn't. John Wesley Powell took it to the next level and starting to make plans wrapped around the importance of water. So should we.

As it turns out, the laccolithic mountains have given this community some of the highest quality water in the United States. Since the quantity and quality of water in Colorado River is steadily decreasing, we would be wise to invest our attention toward protecting that which is ours and work hard to avoid the overwhelming contentiousness that prevails around Colorado River management--the contentiousness that **Powell predicted** would occur as a result of erroneous planning.

Yet it is imperative that we be a good upstream neighbor and share in the responsibility of improving the Colorado River's vibrancy over time.

We also need to appreciate that people come here to experience the quiet wonder of Canyon Country just like Newberry and Powell did. That there is more opportunity here if we preserve the landscape and its culture, than to mangle and demoralize it.

The watershed of southeastern Utah

SEPTEMBER 11, 2009
BY JOHN WEISHEIT



Spanish Bottom below the confluence of the Green and Colorado rivers.

Southeastern Utah in Grand and San Juan Counties host four major rivers within its domain: [Colorado](#), [Green](#), [Dolores](#) and [San Juan](#).

The Navajo Nation hosts the San Juan and Colorado Rivers.

[Navajo Nation water strategy.](#)

[Water resources of Grand and San Juan Counties.](#)

GREEN RIVER

The states that make contributions to the mainstem of the Green River are: Wyoming, Colorado and Utah.

The [Ute Indian Tribe](#) hosts the Green River in Uintah County.

The uppermost reaches of the Green River begin in the state of Wyoming within the cradle of the [Wyoming Range](#), and [Wind River Range](#). The tallest peak in Wyoming is [Gannett Peak](#) (Wind River Range) at 13,804 feet.

[Wyoming Framework Water Plan.](#)

Colorado's contribution to the Green River includes two major rivers: the [Yampa](#) and [White](#).

The headwaters mountains of the Yampa are the Park and Rabbit Ears ranges. The tallest mountain is [Grays Peak](#) (Park Range) at 14,274 feet. The Yampa River joins the Green River at [Dinosaur National Monument](#) near the Utah/Colorado border.

[Water Resources of Dinosaur National Monument.](#)

The headwaters of the White River are the [Flat Top Range](#). The White River joins the Green River near [Ouray](#), Utah above Desolation Canyon.

[Yampa River Basin Information](#). Colorado Water Conservation Board.

[White River Basin Information](#). Colorado Water Conservation Board.

The [Duschene](#) River is Utah's contribution to the Green, with headwaters in the [Uinta Range](#). [Kings Peak](#) is the [tallest peak](#) of the Uintas at 13,528 feet.

[Lower Duschene River wetlands recovery plan.](#)

The Green River will touch Grand County on river left at Coal Creek Rapid ([photo](#)) in Gray Canyon. River right is [Emery County](#).

The Green River enters San Juan County (river left only) and [Canyonlands National Park](#) below Mineral Bottom ([photo](#)). The river right side is [Wayne County](#) which hosts both Canyonland NP and [Glen Canyon National Recreation Area](#).

[Canyonlands Water Resources Report.](#)

To be continued....

Bleak prospects from the oil shale extraction industry

NOVEMBER 23, 2009

BY LANCE CHRISTIE



Kerogen imbedded in shale

UPDATE as of September 2023

- All federal leasing for oil shale development in Utah and Colorado have expired or have been relinquished.
- Activities for tar sand development in Utah have ceased.

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According to the US Geological Survey in **April of 2009**, there are 1.5 trillion barrels of oil which might be produced from the Green River Formation, which underlies the area where Colorado, Wyoming, and Utah meet.

According to the Senate Republicans Communication Center in 2008, there are 800 billion to 2 trillion barrels of potentially recoverable oil in this formation.

However, there is very little energy profit to be gained from processing **oil shale** to obtain refinable petroleum for use as fuel. The hydrocarbon in oil shale is in the form of kerogen. Kerogen has about 10 percent of the heat content of petroleum: a lower heat content than municipal garbage and an amount roughly equivalent to that in prunes.

To release the kerogen, the oil shale must be mined and then heated, or the shale heated in situ (in place) to get the kerogen to separate from the silicates in which it is

embedded. Oil shale expands when heated, producing a massive solid waste tailings management problem and consequent cost.

If mined, the volume of material which has to be moved, retorted, and then handled as spent waste is enormous. This poses challenges in terms of the energy required to move and process the shale and post-extraction tailings, and the containment of those tailings to protect the environment from them. The tailings are full of water-soluble salts and minerals, which must be isolated from surface and ground waters to prevent contamination.

In order to make a refinable faux petroleum from kerogen, a hydrogen atom must be added to the kerogen hydrocarbon chain. Technologies now in commercial use require consuming an enormous amount of water and energy.

The web site [Oil Shale Facts](#) lists the following realities of oil shale development:

Energy use: 100,000 barrel-per-day oil shale production would require 1,200 megawatts of electricity. Producing one million barrels a day from the Green River Formation would require 10 new coal-fired power plants and 5 new coal mines to power the production.

Water use: five barrels of water are consumed for each barrel of oil shale oil produced. The Green River Formation lies in an arid area where existing water is already over-allocated and stream flows are diminishing due to increased aridity from global warming.

Air pollution: The mining and processing of oil shale produces numerous pollutants such as sulfur dioxide, carbon monoxide, ozone and particulates. The power plants required to power production of a million barrels a day would by themselves emit 35,000 tons per year of sulfur dioxide and nitrogen dioxide and more than 105 million tons of carbon dioxide into the atmosphere.

Wildlife habitat: BLM's environmental assessment of the development of million-barrel-a-day oil shale production from the Green River Formation shows probable loss of BLM native fish stream fisheries, loss up to 35 percent of Colorado River cutthroat trout habitat, loss of up to 11 percent of nest and brood range for blue and sage grouse, and adverse effects on elk and deer.

The Bureau of Land Management has a Research, Development, and Demonstration [oil shale project](#) ongoing. There are currently [six 160-acre research leases](#) in Utah and Colorado, with a second round being offered in late 2009. More than 20 companies responded to the first Request for Proposal.

The first round leases can be expanded automatically to 5,120 acres if the lessee can produce 10,000 barrels per day of kerogen from the RD&D lease area. Second-round leases can only be automatically expanded to 640 acres, or one square mile, if that production target is achieved.

The stated purpose of the RD&D project is to determine the effects of oil shale leasing and development on water quality and quantity, and its environmental and socio-economic effects. The BLM received 51,685 written comments on its second round of leasing, of which ~25,000 were from members of the [Natural Resources Defense Council](#). Most comments expressed concern about oil shale development impacts on the environment and in particular on water resources in the arid West.

[Red Leaf Resources](#), based in Salt Lake City, claims to have developed a water-efficient "EcoShale In-Capsule" process for extracting kerogen from oil shale. They have purchased an abandoned refinery in Green River, Utah, in order to haul kerogen from oil shale extraction in Uintah County to it for refining into petroleum products.

[Ecoshale](#) has a pilot oil shale project on 17,000 acres of Utah School and Institutional Trust (SITLA) land 60 miles southeast of Vernal in Uintah County. The deposit of oil shale there from the surface to 100 feet deep is estimated to contain 1.5 billion barrels of kerogen, of which 500 million barrels is rated as recoverable.

Ecoshale uses bentonite-lined [earthen capsules](#) in which the crushed oil shale ore is heated slowly. Ecoshale claims the process uses no water and has low carbon emissions. The pilot plant reportedly produces a product as 39 condensate oil and between 34 and 35 prompt oil with no fines (impurities) in it. Ecoshale claims that ramping their pilot process up to 30,000 barrels per day production would result in a cost of \$20.21 per barrel of faux petroleum produced.

[EnShale](#) has a patented extraction process which was modeled on the DOE Idaho National Laboratory computer system but not used to commercial scale in the real world. It utilizes horizontal kilns which dry the oil shale ore, then heat it, capturing and cooling kerogen vapors into a condensate. In theory, this process would use minimal water, and deliver faux petroleum at circa \$30 a barrel production cost. EnShale says it may take years to develop their method of oil shale kerogen extraction into a commercial production technology. EnShale is a subsidiary of Bullion Monarch Mining, and they have a pilot plant under development on SITLA lands in Uintah County.

Additional information

[Oil Shale Info](#)

[EIS documents for oil shale and tar sand extraction on public lands](#)

[Report on oil shale extraction from Colorado University](#)

[Document archive](#). Western Resource Advocates.

Climate change denial: Don't buy it!

NOVEMBER 30, 2009
BY HAROLD SHEPHERD



Oil shale experiments in Colorado

It is not really news that the oil and gas industry launched a disinformation campaign about the realities of global warming once the [United Nations Framework Convention on Climate Change](#) produced the [Kyoto Protocol](#) in 1997, an international project that took five years to develop.

According to [Naomi Oreskes](#), a professor of science history from the University of California (San Diego), the pushback began "as soon as the scientific community began to come together on the science of climate change."

John Cushman of the New York Times reported in 1998 about a [leaked memorandum](#) written by the [American Petroleum Institute](#), which described a \$5,000,000 campaign "to recruit a cadre of scientists who share the industry's views of climate science and to train them in public relations so they can help convince journalists, politicians and the public that the risk of global warming is too uncertain to justify controls on greenhouse gases."

This plan would mimic the tobacco industry's campaign to discredit the scientists who linked lung cancer to cigarette smoking.

The propaganda campaign picked up speed recently after Interior Secretary Ken Salazar [outlined a program](#) to lease federal lands to conduct research and development programs for potential oil shale products in Colorado, Utah and Wyoming, and to investigate the spurious [midnight leases](#) for oil-shale development by former Interior Secretary, Dirk Kempthorne.

For example, take the recent comments of the Irish film-makers, Phelim McAleer and Ann McElhinney, who stated in [Op-Ed's](#) from various newspapers in Colorado, "Salazar's backward thinking is typical of the politicians who embrace environmental

hysteria. They seem to despise fossil fuels and want to stop Americans from using them.”

Beyond the insinuation that one can actually have an emotional relationship with a fossil fuel, this statement is really an attempt to accuse Salazar and the environmental groups with violations of civil rights toward the poor for potentially interrupting their consumption of cheap energy products in the here and now.

In reality, what environmentalists really hate is the greed and selfishness of the multinational energy corporations that have imperiled the poorest of nations who have no security toward food, water and energy, not to mention the impending collapse of their native ecosystems.

Not surprisingly, McAleer and McElhinney do not see it quite that way at all. They stated “as Europeans, we can’t understand such contempt. This country is blessed with an abundance of natural resources that produce cheap energy and foster economic progress. Forsaking those natural resources in reaction to the kind of global warming hysteria we expose in our documentary ‘**Not Evil Just Wrong**’ jeopardizes the American dream for millions of people.”

The confusing thing about this conclusion is that Mr. McAleer and Ms. McElhinney, who are citizens of Ireland, seem to have an abundance of knowledge about the oil shale-bearing states of Utah, Colorado and Wyoming, and fail to mention the disastrous economic history of the oil shale industry's boom and bust cycles to these communities.

This includes Colorado’s **first oil shale boom gone bust** in the late 1910s and the early 1920s when oil and gas companies moved on to new oil discoveries in Oklahoma, Texas and California, bankrupting many hard-working Americans.

Nearly 60 years later, on May 2, 1982 and known as **Black Sunday**, Exxon abandoned its oil shale project near Parachute, Colorado amid plummeting oil prices. More than 2,300 workers lost their jobs that day and many other jobs disappeared as other companies followed Exxon’s move, causing Rifle, Parachute and Grand Junction to suffer years of economic turmoil.

The ability of the proponents of oil shale development to embrace denial and blame, however, is also matched by their undying optimism about the ignorance of people and how easy it is to manipulate them with disinformation campaigns.

Consider instead the stern leadership of the **poor countries** attending the upcoming climate change conference in Copenhagen, who announced emphatically to the rich countries that failure to address climate change is not acceptable.

Mr. McAleer and Ms. McElhinney also stated that, “Environmental alarmists are determined to scare Americans away from fossil fuels with horror stories about dying polar bears and melting Arctic ice, but don’t believe their lies. Global warming hysteria

ignores the fact it has been warmer in the past—a past without SUVs and mass industry—and the globe has not warmed in 13 years.”

One is forced to ask McAleer and McElhinney what part of the last 13 years do they not understand about how, for the first time in recorded history, the dissipating ice of the Artic Ocean was significant enough this year to give a common commercial freighter successful passage?

Click [here](#) to read another article about Artic Ocean passage.

I for one will take the word of a fish and wildlife biologist working in the field over documentarians funded by industry groups. The National Atmospheric and Oceanic Administration [have stated](#), unequivocally, that the wild polar bear population in the United States will be wiped out for lack of critical habitat within 50 years.

Salazar's oil shale proposal opens public lands for oil shale development at leases of 160-acre, which can be expanded to 640 acres if viable commercial products are actually produced. (Salazar should actually encourage research and development for energy projects that reduce greenhouse emissions and don't require daily water consumption.)

However, the oil and gas companies complain about this research component of the lease agreements, because it forces them to answer key questions about oil shale production, especially its impact on our scarce water resources in the arid west.

Secretary Salazar, himself, hit it right on the head when he [responded to corporate whining](#) about the federal leasing plan by stating that "we believe that our oil and gas leasing program is robust, but it is also a program that we have brought back into balance...But you wouldn't know it if you listened to the untruths coming out of some of the corners of the oil and gas industry."

Salazar further lamented how some of the industry trade groups were "behaving like an arm of a political party...that have all the poison of a political campaign."

This is the only explanation for why film makers from Ireland would write opinion pieces in Colorado newspapers to convey a message that those who are opposed to developing oil shale are "un-American" and that these organized deniers of global warming would much rather continue a debate that the rest of the world considers closed as it moves forward with an international action plan.

It is critical, therefore, that we as citizens educate ourselves about the complexities of oil shale development and don't buy into conspiracy theories over climate, nor dive into the blame game.

Harold Shepherd, is the Acting Executive Director for [Red Rock Forests](#).

For reliable information on oil shale development, please visit [Center of the American West](#).

[Document archive](#). Western Resource Advocates.

Opinion piece in [Denver Post](#) (12/18/09) on impacts of oil shale development.

[Utah Lawmaker Says Climate Change is a Ruse](#) (02/05/10)

[Utah Legislative Panel OKs Resolution On Climate Change](#)

[Climate Skeptics Call On BYU Scientists To Apologize](#)

[BYU Scientists Letter for Climate Change Action](#)

[Water Fallout](#). High Country News.

The prospect of watershed planning in the Moab area

DECEMBER 01, 2009

BY LAUREL HAGEN



Ken's Lake in 2009 at minimum conservation pool

For many of us here on the Colorado Plateau, the dry monsoon season we just had pushed our minds toward thoughts of water security. Even now, as I watch this autumn's second early snowstorm blanket Moab in white, I think of the small silver pond that Ken's Lake has become, the many layers of red sand and grey silt now exposed as the reservoir bottomed-out.

Articles about Colorado Plateau drought in 2009: [Times-Independent, September](#) [Arizona Daily Sun, November](#)

[More pictures of Ken's Lake](#)

Water Scarcity

Here in the desert, lack of water is an immutable truth; our laws and customs are built around the assumption that there is never as much as everyone wants. The valley of Moab is actually quite unusual in that respect, with a relatively small

population blessed with water from perennial streams, as well as artesian springs. The La Sal Mountains float above us, gathering rain to trickle into those streams and percolate into the aquifers.

Moab is not the only exception to the dominant aridity that pervades the Colorado Plateau province, such as our sister communities along the Aquarius Plateau and Grand Mesa, for example, are similarly blessed with the gift of pristine water supplies.

The Colorado River, currently [over-appropriated](#) and much [too silty](#) for culinary use, curls through the northern end of the valley, a reminder of the [tremendous thirst](#) of some 27 million users a thousand miles downstream.

Earlier residents of this place, both natives and pioneers, built an oasis of irrigated agriculture. Their ditches, then and today, use gravity to bring cool, clear water to thirsty crops in the sandy soil. By the turn of the last century, Moab was exporting wagons full of fruit north to the train stops at Floy (Ruby Ranch I-70 exit), Thompson Springs or Cisco.

Now, with Moab's orchards being torn out for luxury vacation homes and motels (more pillows than residents), Moab's water is increasingly going towards residential and tourist uses. This may be a fairly permanent change, or it may be a temporary blip before a longer trend towards local food production returns for reasons our society is fast-approaching **peak everything**.

Either way, many climate scientists **report** that the Colorado Plateau is likely to receive less usable water than we have in the recorded past due to increased rates of evaporation, dry soils, and a longer growing season.

Regardless of what the future holds, the inhabitants of Moab and Castle Valley need to look comprehensively at where our water comes from, where it goes, and what we must do to ensure that the whole system can thrive through the coming decades and beyond.

The outlook for a coordinated watershed planning effort is still a bit muddled, but getting better all the time. There are several government entities that have overlapping jurisdictions on parts of Moab's various watersheds, and pulling them together is likely to be a complex (but certainly achievable) task. As a primer, here are some of the processes on the horizon that will have major effects on watershed planning:

Grand County's General Plan update. Grand County, which covers the northern third of the La Sals and much of the mesa watershed below it (as well as Castle Valley's watershed), is about to begin the process of updating the General Plan. The County's initial request for proposals from contractors, according to the county planning department, is written in fairly vague terms to encourage creative ideas for revision processes. As soon as a contractor is hired, one of their first tasks will be to hold a series of public "visioning" meetings. These will be chances for the public to help the County write a plan that addresses the health of our watershed and water supply. The county will be reviewing contractors in February 2010, and the public input process will begin in March at the earliest. There will be public outreach efforts for all meetings.

Grand County documents

San Juan County. San Juan County covers a large portion of southern Spanish Valley, including a lot of SITLA land. There have been several disputes between Grand and San Juan counties, primarily over the provision of water and sewer service. San Juan County officials have declared their intent to maximize real estate development in the valley in order to reap tax benefits. While San Juan representatives would certainly participate in Moab's watershed planning process, it is not certain whether they would be willing to compromise by passing a Spanish Valley watershed protection ordinance to match Grand County's.

[San Juan County documents](#)

The Utah State Water Quality Dept. and US Environmental Protection Agency (EPA) have a longstanding partnership to help Utah communities produce robust and well-researched watershed plans. The State receives funds from the EPA and other sources, funneling both money and expertise to local entities throughout Utah. There is no legal mandate for this process; it's based entirely on the ability of a community to put together a solid and politically balanced working group in order to receive funds. No part of southeastern Utah has ever had a comprehensive watershed management plan, and the State has been eager to assist us. This process could mesh well with the County process, and is a very promising avenue. To qualify for the next round of major funding, we must have a basic watershed council put together by the end of the summer of 2010.

[Utah state documents](#)

[EPA documents](#)

The US Forest Service, which governs the La Sals portion of our watersheds, was working on a major overhaul of its general Forest Management Plan until 2005. As it was about to release a formal draft of that plan, the process was held up by a nationwide lawsuit against the Bush Administration's handling of the process. A National Forest planner in Price recently told us that the draft plan is ready to release after a few amendments, but that the Forest Service is waiting on the Obama Administration or the Regional Forester in Ogden to give them the go-ahead. Given some thorny legal issues, it seems unlikely that this draft will be released before 2011. This, however, means that the Forest Service planning process could mesh well with a parallel county/state/EPA process.

[US Forest Service documents](#)

The Bureau of Land Management (BLM), which is in charge of most of the redrock mesas of our watersheds, has directives in their new Resource Management Plan to complete municipal watershed planning processes. However, the BLM does not currently intend to begin these plans solo, but instead wants to participate as a partner in county/state planning processes. A watershed plan produced as part of such collaboration would likely be formally adopted into the BLM's internal guidelines.

[BLM documents](#)

The State Institutional Trust Lands Agency (SITLA) owns a large portion of the southern end of the Moab valley, as well as a few parcels higher up. SITLA's legal mandate pushes it to maximize revenue from all its lands, which in the Moab area means real estate development. Whether or not the state must follow county zoning laws is a legal gray area, but the agency has shown some willingness to compromise with counties in the past. SITLA would undoubtedly participate in any collaborative watershed planning process.

SITLA documents

There are also several scientific studies of this area's water either in process or proposed. For example, the [Utah Geological Survey](#) recently completed a major groundwater survey. Congressman Matheson has been pushing for major funding for the Army Corps of Engineers to oversee a "water budget" study for Grand County. And nearby watersheds, such as the Upper Fremont River Basin, have recently completed their own watershed management plans. All such resources would be extremely helpful to our process.

[The hydrology of Moab-Spanish Valley, Grand and San Juan Counties, Utah, with emphasis on maps for water-resource management and land-use planning](#). Lowe et al; Utah Geological Survey; 2007.

Plates 1-12.

Altogether, there is great potential for the Moab and Castle Valley watersheds to complete, and begin to implement, a watershed protection and restoration plan within the next five years. The quality and efficacy of this plan, however, depends entirely on our community's willingness to bring agencies together, gather scientific resources, educate and collect information from the public, and work together. It can certainly be done.

Additional information:

Click [here](#) to read about the watershed approach to planning.

Canyonlands Watershed Council receives grant from Model Forest Policy Program

MARCH 04, 2010

BY JOHN WEISHEIT

On February 28 Nancy Gilliam, executive director of [Model Forest Policy Program](#), notified the Canyonlands Watershed Council (CWC) that their grant application to enroll in the [Climate Solutions University](#) was accepted.

The goal of the ten month Climate Solutions University curriculum is to assist six communities across the U.S. to develop solid climate adaptation plans for protection of local forest and water resources. Over the next year, the Climate Solutions University will provide communities with online educational programs, in-depth coaching and consulting services in order to develop a Climate Action Planning process focused on forest and water resources.

Each community scholarship consists of \$10,000 in funding, plus educational and consulting services valued at approximately \$50,000.

Earlier in the month CWC received seed money of \$10,000 from the community within.

These working funds will be used by CWC to begin the development of a planning document for the Canyonlands region using the watershed approach. The initiative will be directed by a broad-based coalition of citizen participants to articulate the wisdom and knowledge of the local and regional community.



The La Sal Mountains

Energy projects threaten Utah's water resources

MAY 20, 2010

BY HAROLD SHEPHERD

UPDATE as of September 2023

- All federal leasing for oil shale development in Utah and Colorado have expired or have been relinquished.
- Activities for tar sand development in Utah have ceased.

###

With Shell Oil's [recent withdrawal](#) of a water right permit application to divert 375 cubic feet per second of water from the Yampa River in northwest Colorado, one would get the impression that the bubble has finally burst on mass scale, traditional energy development in the West and that the oil industry has finally come to terms with the impact of traditional energy development on rapidly diminishing water resources.

Not so in Utah.

While recently briefing the Utah Board of Oil, Gas and Mining, Dr. Laura Nelson, vice president of the Salt Lake City-based Ecoshale ([Red Leaf Resources](#)), for example, proclaimed that the company just completed a pilot project that produced a high-quality oil-shale product and, "we did so working closely with the Environmental Protection Agency to make an environmentally sensitive product." Similarly, the National Commission on Energy Policy — a bipartisan group of energy experts — recently stated that climate change legislation currently being considered by Congress must also spur more domestic energy production by extending the production tax credit for new reactors through 2025 and expanding the renewable energy standard to include nuclear.

Such calls for an oil shale and nuclear revival have led to rampant mineral and water speculation in and around Utah and an industry that is practically purring about the shale and uranium rich iconic mountain and canyon country. The rush to develop such resources, however, has caused concern. Audrey Graham, a member of the Grand County Council, states, "For me personally, Utah's rush to use its nonrenewable energy resources, including scarce water supplies, is shortsighted unless there is an overall articulated energy plan for the nation. I can perhaps swallow some carefully planned development of these resources if they are a stop-gap measure until sustainable renewable resources can be achieved."

Graham is in a minority among political leaders in Utah, however, most of whom have proclaimed that Utah is "open for business!" Indeed, a few even want a piece of the action. [Aaron Tilton](#), the CEO for [Blue Castle Holdings](#), the owner of a proposed nuclear

power plant to be located near the town of Green River, also sat on the state Legislature while he worked on a lucrative deal with the Kane County Water Conservancy District to lease water to the plant for the power generating process. Tilton's counterpart at the county level is another state representative and ardent proponent of nuclear power development, **Mike Noel**, who is also the water district's administrator.

A nuclear power plant in Green River could also be the epicenter of any future oil shale boom and the corresponding impacts on water availability in the state.

Many water experts speculate that the already over-appropriated river systems in Utah simply cannot accommodate such development. A case in point is the Green River nuclear plant, which would have access to a 1964 Kane County water right for 29,600 acre-feet per year. If the river drops, the plant would have rights to what remains, placing it ahead of many other water right holders in southern Utah. In addition, adding water diversions for energy development could cause state water courts to cut off existing water users once Utah exceeds its allocation under the Colorado River Compact.

Another Grand County Council member, Chris Baird, addressed the consequences of inserting energy development into the water use equation: "I can't speak for the Grand County Council," he said, "but I personally believe that oil shale and tar sands projects in Utah are highly speculative in a myriad of ways. It would be wise for the state of Utah to consider this in appropriating water rights to the most beneficial use. The cost-benefit scenario for such projects are also highly questionable, and that isn't even considering the environmental costs."

The question for Utahns is, are we paying attention?

Harold Shepherd is the executive director of Red Rock Forests.

Utah environmental groups challenge tar sands proposal to strip mine in Grand County

SEPTEMBER 27, 2010
BY JOHN WEISHEIT



Open pit and piles of tar sands at PR Springs

UPDATE as of September 2023

- All federal leasing for oil shale development in Utah and Colorado have expired or have been relinquished.
- Activities for tar sand development in Utah have ceased.

###

To submit a letter of concern to UDOGM [click here](#)

TAR SANDS IN THE NEWS

[Click here](#) to read story of April 2011 in Associated Press

[Click here](#) to read story in Salt Lake Tribune

[Click here](#) to read OpEd in Salt Lake Tribune

[Click here](#) for story in Reuters on September 24.

[Click here](#) for story in Moab's Times-Independent on September 23.

[Click here](#) for story in Moab's Times-Independent on September 29.

DOCUMENTS

[Letter to Utah Division of Oil, Gas and Mining](#) 13 page pdf file with working hyperlinks to references, photos, press, and helpful information.

[Letter of response from Utah Division of Oil, Gas and Mining](#)

[Additional letter of response from Utah Division of Oil, Gas and Mining](#)

[Confirmation of informal hearing from Utah Division of Oil, Gas and](#)

[Mining Response of informal hearing from Utah Division of Oil, Gas and Mining](#)

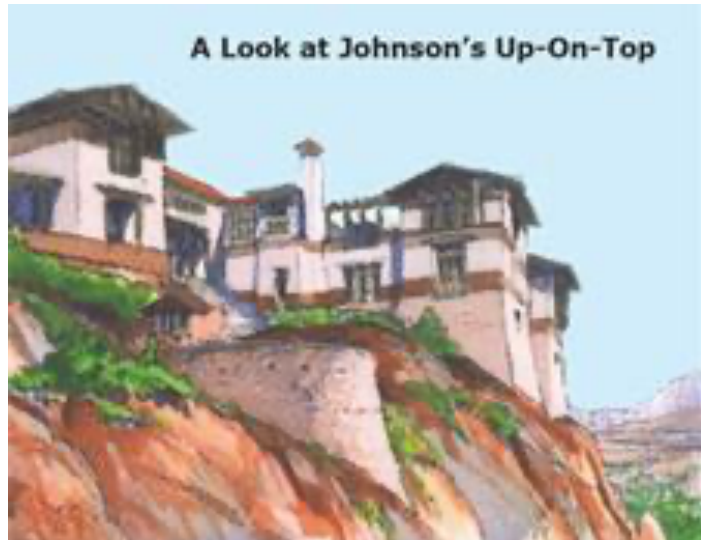
[Appeal to Board of Utah Division of Oil, Gas and Mining](#)

Additional information

[Resources](#)

History of the campaign to protect Johnson's Up-On-Top and the water supplies of Moab and Spanish Valley

MARCH 08, 2011
BY JOHN WEISHEIT



Times-Independent: [Search Engine](#)

October 12, 2000 - [Cloudrock developers face county planners, capacity crowd](#)

December 21, 2000 - [Cartoon & Christie LTTE.](#)

February 1, 2001 - [Water board upholds contract with SITLA](#)

March 8, 2001 - [Critical time for Cloudrock](#)

March 22, 2001 - [Public Notice](#)

March 29, 2001 - [Cloudrock service central to water talks](#)

April 5, 2001 - [It's all Cloudrock in recent political talk](#)

June 14, 2001 - [Planners approve changes to code while](#) opponents cry foul

July 12, 2001 - [Trust Lands begins planning discussions with area groups](#)

October 18, 2001 - [County OK's Cloudrock development](#)

November 8, 2001 - [County approves Cloudrock annex](#)

December 20, 2001 - [County balks at projects](#)

May 2, 2002 - [Sparks fly at Cloudrock meeting as board of adjustments questions conflicts of interest](#)

March 6, 2003 - [Living Rivers to target Mill Creek Revival March 14](#)

March 13, 2003 [Water agency asked to reconsider White land/water purchase](#)

March 14, 2003 - Living Rivers and Grand County Citizens for Clean Water launch a campaign to protect the water supplies of Moab and Spanish Valley from inappropriate development. See [full-page ad](#) from the Times-Independent.

March 20, 2003 - [Mill Creek Rally organizers say Grand County water agency puts greed before welfare of land](#)

May 8, 2003 - [Lawsuit launched](#) against Grand County over illegal action on SITLA properties at Johnson's-Up-On-Top for a development called "Cloudrock."

December 31, 2003 - [MCA case tossed out of Seventh District Court; appeal filed too late](#)

July 28, 2006 - [MCA loses lawsuit to stop Cloudrock annexation](#)

August 2006 - [Cloudrock brainstorming sessions to be held in Moab this week.](#)

December 21, 2006 - [Cloudrock spreads, challenges planning process](#)

January 18, 2007 - [Cloudrock changes approved](#)

February 1, 2007 - [Council sets Feb. 6 public hearing for revised Cloudrock PUD](#)

February 15, 2007 - Grand County Citizens for Clean Water place a [full-page ad](#) in the Times-Independent.

February 22, 2007 - [Council delays decision on Cloudrock development](#)

May 3, 2007 - [Grand County Council struggles with amended preliminary plat for Coloudrock development](#)

April 19, 2007 - [GWSSA approves Cloudrock watershed protection measures](#)

November 29, 2007 - [Group appeals County PC decisions on Cloudrock.](#)

December 13, 2007 - [Board of Adjustments vacates PC approval of special exceptions for Cloudrock](#)

November 22, 2007 - [County council approves changes to Cloudrock lodge configuration](#)

December 20, 2007 - [County PC again approves Cloudrock special exceptions](#)

March 14, 2008 - [A Look at Johnson's Up-On-Top](#). A publication of Grand County Citizens for Clean Water

March 17, 2008 - [Moab activists call builder a threat to area's water supply](#) in the Salt Lake Tribune.

April 1, 2009 - [State's high court says citizens have standing in Cloudrock appeal](#). Click [here](#) to read Supreme Court Decision. [Article](#) in Times-Independent

How to provide effective comments on the proposed national forest planning rule and EIS

MARCH 18, 2011
BY MARY O'BRIEN



Trail to Gold Knob,
La Sal Mtns.

On February 10, 2011, the USDA Forest Service unveiled its proposed Forest Planning Rule which would establish a new national framework to develop land management plans that protect water and wildlife and promote vibrant communities ([press release](#)). The proposed rule is the result of an open, collaborative rulemaking process that began in December 2009.

“This proposed planning rule seeks to conserve our forests for the benefit of water, wildlife, recreation and the economic vitality of our rural communities,” said Agriculture Secretary Tom Vilsack. “The proposed rule will provide the tools to the Forest Service to make our forests more resilient to many threats, including pests, catastrophic fire and climate change. Healthy forests and economically strong rural communities form a solid foundation as we work to win the future for the next generation.”

[Brief introduction about the proposed new rulemaking](#). Mary O'Brien.

[Guide to reading the Rule and DEIS](#). Mary Kruger.

[Documents and appendices](#). US Forest Service.

[Forest Service rulemaking home page](#)

[Notice of new rulemaking for national forests](#)

[Federal Register Notice](#)

[USDA rulemaking blog](#)

[Meeting schedule](#)

[Public Forums](#)

[Regulations for implementing the procedural provisions of NEPA](#)

NEPA 101. Dinah Bear.

[Section 7 Consultation Handbook](#)

Meetings for Utah are March 29, 2011

Two Sessions 2:00-5:00 and 6:30-9:00 at the following locations

- Manti-La Sal National Forest Forest Supervisor's Office 599 W Price River Dr Price, UT 84501
- Sanpete Ranger District Office 540 N Main Ephraim, UT 84627
- Ferron/Price Ranger District Office 115 W. Canyon Rd Ferron, UT 84523
- Monticello Ranger District Office 496 US Highway 491 Monticello, UT 84535

How to submit comments by May 16, 2011

The internet portal is located:

<http://www.govcomments.com> ([Direct link](#))

or <http://www.regulations.gov>

By Mail
Forest Service Planning DEIS
c/o Bear West Company
132 E 500 S.
Bountiful, UT 84010

By FAX: 801-397-1605

The public may inspect comments at: <http://contentanalysisgroup.com/fsrd>

Tar Sands Strip Mining in Canyon Country

APRIL 17, 2011

BY JOHN WEISHEIT



PR Springs in northern Grand County

UPDATE as of September 2023

- All federal leasing for oil shale development in Utah and Colorado have expired or have been relinquished.
- Activities for tar sand development in Utah have ceased.

###

On May 20, 2009 the Utah Division of Oil, Gas and Mining (UDOGM) approved a [plan of operations](#) by an Alberta, Canada mining company called Earth Energy Resources (EER) to commence the strip mining of tar sands (bitumen) in the Uinta Basin of the Colorado Plateau.

STATUS: The application to begin mining operations has been challenged by [Living Rivers](#) and their attorneys [Western Resource Advocates](#). The application for a Conditional Use Permit from Grand County

has yet to be submitted by EER.

The first formal hearing was February 23, 2011 with Utah Division of Oil, Gas and Mining and the next scheduled meeting is May 16 & 17, 2012 with the Utah Division of Water Quality on May 16 and 17, 2012, and each day, the hearings will begin at 10:00 a.m. and end by 5:00 p.m. Address is 195 North 1950 West; Salt Lake City, UT 84114-4870 ([stipulations](#)).

Click [here](#) to read this color booklet created by Living Rivers and the Colorado Riverkeeper

To submit a letter to UDOGM [click here](#)

Read [article](#) by the Associated Press that had considerable coverage in the nation.

The plan will blast and chew into the slopes of canyon headwaters at possible depths up to 500 feet. The overburden and waste rock (sand, clay, and rubble) will then be placed back into the empty cavity and adjacent valleys, and then sprinkled with [top soil](#), mulch, seeds and prayer, with hopes the infamous winds & [cloudbursts](#) of this high plateau won't wash and blow it all away ([photo of debris flow in Uinta Basin](#)).

Nevermind the weed crop that will actually replace this landscape of sage, Gambel oak, pinyon pine, aspen and Douglas fir. A habitat ideal for wildlife populations such as elk, deer, bear, bison (recently introduced), turkey, nightjars, grouse and owls. The pretty pictures on the ERR [website](#) leave readers with the impression that the landscape will actually be improved by their handsome visits.

The proposal includes processing the bitumen into a liquid at the mining site so that it can be trucked to Salt Lake City where it is typically refined into kerosene, diesel and aircraft fuel. The on site sand/bitumen separating process uses a concentrated citrus-based solvent mixed with hot water. Even though the solvent is strong enough to liquify tar, EER says the chemical signature is harmless to the environment. When asked to reveal the chemical signature of the solvent, EER claims it does not have to reveal proprietary company secrets. The chemical has to be replenished during processing and that which is lost ends up in the unlined waste pit where it is exposed to percolation from rain storms, which will carry it into the aquifer or into stream beds. The chemical is also expensive (\$36 a gallon) and there isn't enough citrus in the world to support large scale tar sands mining in the first place.

The other speculative part of this proposal is the limited groundwater available for processing. Water that is not saline is hard to come by in the Uinta Basin. There are shallow aquifers in the mining area, but the quantity is anything but sufficient. EER will have to chase water and drill more wells as they exhaust their supply time and time again.

The Uinta Basin ([map](#)) is in the northeast corner of Utah and the northwest corner of Colorado. Some people refer to the Uinta Basin in Utah as the Tavaputs Plateau or the Book Cliffs. In the state of Colorado the Uinta Basin is also known as Piceance Creek Basin or the Roan Cliffs.

This geophysical subprovince is loaded with kerogen and bitumen embedded in sandstones and shales of the Green River Formation ([report](#)). Various documents claim there are more hydrocarbons in the Green River Formation, which also extends into Wyoming, than in Saudi Arabia. However, the reason why oil bearing rocks have never been extracted here before, is the high cost of production and the general lack of water for processing ([report](#)).

This is the first serious application for large-scale extraction of tar sands in the United States, outside of experimental and small town asphalt operations. The proposed mine will affect the watershed of the Green River, which is the major most tributary of the Colorado River.

The Utah counties affected are Grand County (Moab is the county seat) and Uintah County (Vernal is the county seat). The national parks in the vicinity are Canyonlands, Arches, Dinosaur and Colorado National Monument near Grand Junction.

The permit is for an area of 213 acres at a place called PR Springs ([photos](#)), but EER has leased a total of 5,930 acres of state land managed by School Institutional Trust Lands Administration (SITLA). There may be no federal nexus that would warrant a full Environmental Impact Statement, unless the mining operations move into federal lands managed by the Bureau of Land Management, which may or may not happen depending on when Congress gets real about climate change legislation. In the meantime, there is a [Secretarial Order](#) ([and here](#)) for federal agencies to adjust to climate change and reduce greenhouse gases.

When the 24-hour a day, seven year project is complete, which includes blasting, ripping, hauling, primary processing and conveyance by tanker trucks over dusty roads to waiting refineries in air impaired urban areas like Salt Lake City, the contribution to the total US energy consumption per day will be a whopping 6 hours ([here's the math](#)). Ironically, EER will consume 2 of those 6 hours to produce the final product for market.

Midnight shifts mean the blaring lights and noise will be seen and heard from Dinosaur National Monument, a federal reserve that has captured the most stunning canyon scenery in North America ([photos here](#) & [here](#)).

In return the sole-source Colorado River watershed for seven states and Mexico get a mauled landscape, increased carbon emissions (3 times more than conventional oil production) and [fugitive dust](#) that will eviscerate the snowpacks of the Rocky Mountains and ensure the reservoir system will fail and foul.

At this time, EER is reported to be searching for \$35 million for start-up expenses and reclamation bonding, so mining operations have yet to occur. Additionally, an informal administrative hearing by Utah-based environmental groups this last winter resulted in a settlement to extend the public comment period more broadly. Furthermore, the government of Grand County will need time to implement a Conditional Use Permit (CUP) for these operations. The CUP from Uintah County has already been granted.

Living Rivers and Peaceful Uprising recently protested this disaster-in-the-making at a scheduled informal hearing before DOGM administrators ([news clippings](#)) and it became very clear that nothing will stop this mine from proceeding because the state of Utah blatantly refuses to adjust to climate change by implementing renewable energy alternatives. They do provide some lip service to these policies, but only to answer critiques such as mine.

The activists were advised by DOGM to take the matter up with the governor and the legislators. This is the same legislative body that has recently filed a lawsuit against the federal government with the hope the court will favor the [handing of the public domain over](#) to Utah. Nevermind that revenue from taxpayers from all 50 states is what built the basic infrastructure that allows Utah to function.

The amazing thing about Utah's position as the ultimate deniers of climate change is their surface water yield is indeed **declining** despite a fully funded **cloud-seeding program**. Water conservation will never happen in Utah, until the goal of appropriating as much water as possible is achieved first.

The Utahns that do drink water from the Colorado River basin, for example the folks of Salt Lake City and Provo, do not utilize surface water from the Uinta Basin. Their water comes from the slopes of the Uinta Mountains and the Wasatch Plateau, which is of excellent quality. The biggest threat to their water supplies is from the air pollution and greenhouse gases they themselves generate, which includes four oil refineries. For short-term particle pollution, **Salt Lake City is #6** in the nation.

Grand County has the largest proportion of state lands by county in Utah. In fact 15% or 550 square miles, and most of it is lumped where the tar sands and oil shale occurs (**map - blue squares are state lands**).

How did this heavy oil reserve for state exploitation occur?

As you are probably aware, the western states have a lot of federal lands that were never dispensed to individuals and corporations through various programs (for example the Homestead Act of 1862), and mostly for reasons of having no soil or water. Eventually enough people filled the western states so that its citizens could apply for statehood. Even after statehood, federal lands were dispensed to the public, usually to benefit returning veterans from the two World Wars. All programs of dispensement ended in 1976 (except Alaska for a period of ten years) when Congress passed the Federal Land Policy Management Act (FLPMA).

Public lands are managed by various federal agencies for the benefit of all US citizens, though foreigners on holiday can visit these lands just as freely. Some of the public domain is preserved as national parks, monuments, wilderness and wildlife refuges, but the rest (the majority) has a multiple-use agenda and can be permitted by corporations and citizens to graze livestock, cut timber, or mine.

At statehood, 4 of the 36 sections in a township (Public Land Survey System), were dispensed to the state government to generate revenue for state education programs. If the US Congress formally designates a national park, recreation area or wildlife refuge, for example, the state-owned sections within the designated boundaries are exchanged from the multiple-use sections of the public domain. Usually the exchanges are clustered to provide more economic opportunities for the state, and why there is such a large concentration of state lands in the hydrocarbon-rich Uinta Basin.

If the nation is to adapt to climate change by reducing greenhouse gases in the atmosphere, then strip mining low-grade hydrocarbons in the second driest state in the Union is not an appropriate way of demonstrating one's leadership skills toward intelligent land-use planning.

Reduced streamflow is interfering with the goals and investments of regional water rights and delivery, salinity control and the recovery programs for endangered species.

Corporations and government agencies must abandon traditional petroleum-based energy programs and invest their time and resources in developing energy products that do not conflict with the fundamental water supplies and programs of Colorado River basin, or with national and international goals and programs to reduce greenhouse gas emissions that contribute to global warming and regional climate change.

Additional Information

[Living Rivers](#)

[Peaceful Uprising](#)

[Canyonlands Watershed Council](#)

Public scoping meetings for the Department of Energy Uranium Leasing Program at Uravan Mineral Belt

JULY 28, 2011

BY JOHN WEISHEIT

Public scoping meeting for the U.S. Department of Energy Uranium Leasing Program
Programmatic Environmental Impact Statement (DOE/EIS-0472)

[Click here](#) to read a press article from the Durango Herald

[Click here](#) to read a press article from the Telluride Daily Planet

[Click here for Federal Register Notice](#)

COMMENTS ARE DUE SEPTEMBER 9, 2011

MEETING SCHEDULE

August 8, 2011

6:30 to 9 pm

Montrose Paviion

1800 Pavilion Drive

Montrose, Colorado 81401

August 9, 2011

6:30 to 9 pm

Sheridan Opera House

110 North Oak Street

Telluride, Colorado 81435

August 10, 2011

6:30 to 9:00 pm

Naturita Community Building

411 West 2nd Street

Naturita, Colorado 81422

August 11, 2011

6:30 to 9:00 pm

San Juan County Court House

Commission Chambers

117 South Main Street

Monticello, Utah 84532

Contact Information

Mailing Address:

Laura Kilpatrick, Realty Officer
11025 Dover Street, Suite 1000
Westminster, CO 80021
Telephone: (720) 880-4338
E-mail: ULinfo@lm.doe.gov

Background Information

This study was generated by a [lawsuit](#)
[Link to Programmatic Environmental Impact Statement](#) (PEIS)
(under construction)

Links to the previous Environmental Assessment

[Link to Program Summary](#)
[Link to Current Status](#)
[Link to FONSI](#)
[Link to Map](#)

Links to Fort Lewis College Library

[Maps](#)
[Mining Records](#)

Water Right Application for Pinnacle Potash Corporation

DECEMBER 02, 2011

BY JOHN WEISHEIT

New Information: Pinnacle Potash is now seeking the option to lease surface water in Flaming Gorge Reservoir from Duchene County, which will require a federal water contract with the Department of Interior. This will require an environmental assessment and consultation with US Fish and Wildlife and other federal agencies.

NEW INFORMATION:

- [Order of the State Engineer for groundwater depletion](#)
- [Proposed groundwater management plan](#)
- [Order of the State Engineer for Transfer of Dagget County surface water to Grand County](#)

Summary:

- 1) The groundwater extraction yield has been reduced from 20,000 acre-feet to 5,000 acre-feet and a rigorous groundwater management plan must be adhered to.
- 2) The surface water transfer from Daggett County to Grand County was approved and contingent on a Section 7 Consultation with the US Fish and Wildlife Service.

###

Pinnacle Potash of Austin, Texas has submitted an application for the withdrawal of 20,000 acre-feet annually for a period of 30 years (600,000 acre-feet total) to commence solution mining for potash north of Arches National Park.

To keep up to date on this issue, please visit [this web site](#) at the Utah Division of Water Rights. The water right number is 92-674 (A79183).

The first **hearing** occurred on May 9, 2012 at 1:30 pm at the County Council Chambers in Moab, Utah.

In the meantime, Pinnacle Potash is attempting to procure water from Flaming Gorge Reservoir via a Change Application with Daggett County for 8,000 acre-feet. The point of diversion would be along the Green River in Grand County (near Elgin) and the pipeline would basically follow the railroad tracks to Crescent Junction.

For information on the **proposed change application from Daggett County to Grand County (8,000 acre-feet)**, please visit [this web site](#) at the Division of Water Rights. This

water right is 41-3687; (A30414bb). If acquired, this water would be used by Pinnacle Potash for solution mining.

The Dagget County change application hearing is scheduled for September 26, 2013 at Green River City Hall at 11:00 am.

To get involved, please call John Weisheit for assistance at 435-259-1063.

- [Application by Pinnacle Potash \(searchable\)](#)
- [Protest by William Love](#)
- [Protest by Canyonlands Watershed Council](#)
- [Protest by Grand Water & Sewer Service Agency](#)
- [Protest by Living Rivers](#)
- [Protest by National Park Service](#)
- [Proof of Publication](#)
- [Protest by Bureau of Reclamation](#)
- [Map of Pinnacle Potash Sections](#)
- [Powerpoint presentation](#). NPS.
- [Endorsement by SITLA](#)

Additional information

Water right application for potash exploration near Canyonlands Field Airport (Bob Norman)

- [2012 - State Engineer denies the water right application](#)
- [Application to Appropriate Water For Potash Exploration](#)
- [BLM protest](#)
- [Norman's response to protest](#)
- [NPS protest](#)
- [Water Right Arches UDWR 2011](#)
- [Water right protests combined](#)
- [Map - Watersheds Arches NP](#)

Water right for potash exploration near Hatch Point

- [2011 - Water right for potash development near Hatch Point](#)

NEWS CLIPS

- [Local Groups Protest Water Application for Proposed Potash Mine](#)
 - [BLM Okays Potash Exploratory Drilling Project Near Labyrinth Canyon](#)
 - [BLM Gives Green Light to Hatch Point Potash Exploration](#)
-

Master Leasing Plan: Amendments to Moab and Monticello Resource Management Plans

MARCH 10, 2012
BY JOHN WEISHEIT

The Draft EIS is due for release in the summer of 2014

Click here to visit BLM's dedicated web page for the Master Leasing Plan, Moab Field Office

Contact info:

MLP Project Manager
Brent Northrop
82 E. Dogwood
Moab, UT 84532
435-259-2151
bnothrup@blm.gov

RELEASE OF PROPOSED ALTERNATIVES, MAY 2014

-
- [May 14, 2014 - Alternative Public Meeting](#)
- [Alternative A](#)
- [Alternative B1](#)
- [Alternative B2](#)
- [Alternative C](#)
- **News:** [Public Gets First Look at BLM Master Leasing Plan Proposals](#). Times-Independent.

RECENT DOCUMENTS

- [Analysis of the Management Situation](#)
- [Scoping Report](#)
- [SocioEconomics Report](#)
- [Oil & Gas Forseeable Development Scenario](#)

Scoping has closed.

Public Scoping Period
March 5, 2012 to May 7, 2012

E-mail: BLM_UT_Comments_2@blm.gov
Mail: BLM, Moab Field Office, 82 East Dogwood, Moab, Utah, 84532, Attention: Brent Northrup
Fax: (435) 259-2106

Scoping Meetings

March 27, 2012 @ 5 pm to 7 pm
Monticello High School
1400 Independence Way
Monticello, Utah

March 28, 2012 @ 5 pm to 7 pm
Moab Grand Center
182 North 500 West
Moab, Utah

April 3, 2012 @ 6 pm to 8 pm
Salt Lake City Main Library
210 East 400 South
Salt Lake City, Utah

Letters of Record

- [CWC et al comment letter](#)
- [SUWA et al comment letter](#)
- [Click here](#) to visit the BLM website

Documents and internet links

- [Excerpts from Citizen's Guide to NEPA](#)
 - [Federal Register Notice](#)
 - [MLP map](#)
 - [Oil & Gas Stipulations Map](#). BLM.
 - [MLP Newsletter No 1](#)
 - [Moab LP Press Release](#)
 - [Oil and gas resources](#). BLM web page.
 - [2008 RMP documents and maps](#). BLM web page.
 - [BLM Poster Presentations](#)
-

State of Utah New Water Legislation Review

MARCH 16, 2012

BY LAUREL HAGEN



Storm over La Sal Mountains and Sand Flats, Moab

The Utah State Legislature recently concluded its 2012 session. Here's a brief and informal review of new legislation affecting water and irrigation.

This list of bills comes from the State Division of Water Quality.

First, a disclaimer: I'm not a lawyer, so there may be errors of interpretation below. Further, many laws, especially small changes to the code, are proposed to address a certain situation. Knowing that context means a great deal to understanding the actual impact of the law, as opposed to just the language. I don't know that specific context for any of the bills below; this is just a review of the language, so that people can get an

idea of what was passed, and give a more careful review to anything that might be significant.

If you'd like to read them yourself, click [here](#) for the DWR list.

Water-related bills actually passed in 2012 (failed bills not reviewed here):

[HB 462](#)

Chief Sponsor: Joel K. Briscoe

Added a few clauses to the law creating the duties and funding stream of the "Constitutional Defense Council," which was created to advance legal strategies promoting a states' rights agenda (reviewing federal government mandates for interference, Constitutionality, etc.). The new clauses authorize the Council to spend time/money on water disputes between Utah and other states, regardless of federal involvement.

[HB 127](#)

Chief Sponsor: Christine F. Watkins

Allocates \$2 million to a newly created Navajo Water Rights Negotiation Account.

[HB 153](#)

Chief Sponsor: Joel K. Briscoe

Regarding water rights exchange applications. The bill has several changes that appear to be non-substantive language clarifications. It also adds a section that allows an applicant to reinstate a lapsed application for a right (an application is "lapsed by the State Engineer" if the conditions and uses in the app no longer exist) if the applicant has re-started the beneficial use of the water as described in the original app. However, the priority date of the water right will be the day the app is reinstated, not the day it was originally filed.

HB 453

Chief Sponsor: Ryan D. Wilcox

This adds a small section onto the laws about water rights change applications for federal reclamation projects. The addition specifies that both the water users' association overseeing the reclamation project and the owner of the right must sign the change application.

[SB 78 \(First Substitute\)](#)

Chief Sponsor: John L. Valentine

This one has a bit of an interesting history. A bill was originally proposed that would limit Water Conservancy District property tax levies to certain percentages, particularly when paying off bonds. That bill was then scratched, and replaced with the much more vague bill that passed, which instead "Directs the Revenue and Taxation Interim Committee in 2012 to study the proper allocation of water costs to the rate structure charged for water customers." There's supposed to be analysis of things like conservation rate structures, landscaping ordinances to conserve water, the impact of impact fees on development, alternative ways to finance water delivery projects, etc. One particular item of interest is "study the efficacy of or need for various programs, including variable rate processing, education programs, landscape ordinances, and multi-tier rate structures," which is very important stuff.

SB 246

Chief Sponsor: Ralph Okerlund

This bill make some seemingly minor changes to the Commercial Code regarding the procedures for replacing lost, damaged or stolen certificates in a land or water company, clarifies that the provisions in that part of the Code apply to both, and defines them by the geographic area they serve.

I'll put out a description of unpassed bills if I have time later, since those bills often get resurrected in the next section, or practically enacted in other ways.

Redux of the Long Canyon Pump Back Project

APRIL 04, 2012

BY JOHN WEISHEIT

Note: This application has lapsed

FERC has cancelled this application due to the failure of Utah Independent Power to submit a timely **Progress Report**. It remains to be seen if UIP will request an extension or reapply yet again.

[Story in Times Independent](#) by Rudy Herndon

###

Comment period has closed

###

- [Motion to Intervene by Canyonlands Watershed Council, Grand Canyon Trust, Living Rivers/Colorado Riverkeeper](#)
- [Letter by Southern Utah Wilderness Alliance](#)
- [Letter by BLM](#)

ONLINE DOCUMENT ARCHIVE

-
- [Federal Register Notice of 3/20/12](#)
- **Search engine:** http://elibrary.ferc.gov/idmws/docket_search.asp
- **Enter this docket #: P-14354**
- [Record as of December 31, 2013](#). Linked PDF file.

The docket number for this company's pumpback project in Arizona is: **P-14061**

The docket for the proposed Plateau Creek pumpback project near Dolores, Colorado is: **P-14328 & P-14426**

- Kimberly D. Bose
- Secretary Federal Energy Regulatory Commission
- 888 First Street, N.E., Room 1A
- Washington, DC 20426

Comments are due May 22

SAMPLE LETTER:

- [Sample comment letter by Living Rivers](#)
- [2008 letter by Southern Utah Wilderness Alliance](#)

HOW TO SUBMIT COMMENTS

-
- 1) For comments under 6,000 words (eComment), go [HERE](#) (registration not required)
 - 2) To file detailed comments, you must first register [HERE](#)
 - 3) To submit your comment letter (eFiling) go [HERE](#)
 - 4) SAMPLE LETTER: [2008 Comment letter by Living Rivers](#)

Document archive

- January 2012 - [Application For Preliminary Permit](#)
- February 2012 - [Deficient Notice of Preliminary Permit](#)
- February 2012 - [Response to Deficiency](#)
- March 2012 - [Acceptance of Preliminary Application](#)
- March 2012 - [BLM notification](#); [Other Notifications.pdf](#); [Contact info.xls](#)
- March 2012 - [Solicitation For Public Comments](#)

DOCUMENTS OF 2008 APPLICATION

- [2008 - Comment letter of Living Rivers](#)
- [2008 - Story in Times-Independent by Ron Georg](#)
- [2011 - Story by Amy Joi O'Donoghue of KSL](#)
- **2011** - Read letter from FERC regarding applicant's failure to comply in providing progress report for Long Canyon Project.
- **2011** - Read letter from applicant announcing surrender of Long Canyon Project.
- **2011** - to read letter from applicant announcing surrender of Bull Canyon Project.

FERC Archive of 2008 application

- FERC Search Engine: http://elibrary.ferc.gov/idmws/docket_search.asp
- 2008 Docket # is P-13146
- [ALL 2008 DOCUMENTS COMBINED](#)

Geology Reports

- [1992 - Soil and Rock Causing Engineering Problems in Utah](#). UGS.
- [2000 - Geology of Dead Horse Point](#). Doelling.

- [2003 - Geologic Hazards of Moab-Spanish Valley. Plate 01; Plate 02; Plate 03; Plate 04.](#) UGS.

News

- [Click here](#) to read this story by Charli Engelhorn in the Moab Times-Independent
- [Click here](#) to read this story by Amy Joi O'Donoghue in the Deseret News

Facts

Two reservoirs with total surface area of 200 acres. Mean elevation of the two reservoirs are 5,100 feet.

Proposal by K2O, Inc. for Potash Mining near Hatch Point

JUNE 29, 2012
BY JOHN WEISHEIT

New information: The federal lease to K2O Potash for exploratory drilling has expired for lack of payment.

###

COMMENT PERIOD OPEN UNTIL NOVEMBER 30, 2012 FOR THE K2O POTASH ENVIRONMENTAL ASSESSMENT

[BLM Web Page: General Announcements](#)

[BLM Web Page for K2O Potash](#)

[K2O EA Fonsi Roads 2011](#)

[K2O Hatch Point EA](#)

[App D Fugitive Dust Control Plan](#)

[App E Air Emissions Inventory](#)

[App F VI SCREEN Air Modeling Results](#)

[Map 1 Proposed Action](#)

[Map 2 Dismissed Locations](#)

[Map 3 Soils](#)

[Map 4 Recreation](#)

[Map 5 Visual](#)

[Map 6 Pronghorn](#)

[Map 7 Vegetation](#)

[Map C1 Riparian](#)

The Moab Field Office of the Bureau of Land Management is now seeking public comment on an Environmental Assessment (EA) analyzing the potential impacts of exploratory drilling for potash—a powdery salt commonly used in fertilizers.

Under the proposal, K2O Utah LLC, would drill four exploratory core holes in the Hatch Point/Canyon Rims area of San Juan County. The proposed action would disturb approximately 39 acres.

Send written comments to:

Bureau of Land Management
Moab Field Office

82 East Dogwood
Moab, UT 84532

Phone: (435) 259-2100

Written comments may also be submitted via email to:

BLM_UT_MB_Comments@blm.gov

###

**ADDITIONAL INFORMATION FROM THE SCOPING PERIOD IS PROVIDED BELOW
FOR THE HATCH POINT POTASH EXPLORATION PROJECT**

NOTE: SCOPING COMMENTS WERE DUE JULY 30, 2012

K2O Utah, Inc. (proponent) has submitted an Exploration Plan to explore for potash in the Hatch Point area of San Juan County. In the Exploration Plan K2O proposes to drill and collect core samples from four of five locations in the Hatch Point Area to explore for potash resources. A total of five proposed core hole locations are proposed, however depending on geologic data obtained after drilling the first two holes, only four of the locations would be constructed and drilled. Amount of proposed surface disturbance (new access road construction, upgrades to existing roads and drill pads) is approximately 38.9 acres. The core hole sampling project is proposed to begin during the fall of 2012.

The public review and comment period for the proposed action will begin on the publication date of this notice and will continue until July 30, 2012. Send written comments to the BLM Moab Field Office, noted below. Comments will be used to develop issues and alternatives for an environmental assessment. The proposed action and maps may be reviewed during business hours at:

Bureau of Land Management
Moab Field Office
82 E. Dogwood Avenue
Moab, Utah 84532
Phone: (435) 259-2100
Office Hours:
7:45 a.m. to 4:30 p.m.

The proposed action and maps may also be viewed on the Internet at: <https://www.blm.gov/ut/enbb/index.php>

- [Proposed Action](#)

For additional information, please contact Rebecca Doolittle (435) 259-2141.

Published in The Times-Independent, Moab, Utah June 28, 2012.

BACKGROUND INFORMATION

- [2011 - Water right for potash development near Hatch Point](#)
- [Maps of wells belonging to San Juan County Commissioner Bruce Adams](#)

K2O, Inc. (Potash Minerals Limited)

- [K2O Utah Project](#)
- [Map of K2O project](#)
- [K2O Geophysical Report](#)
- [K2O Corporate Report](#)
- [2011- Corporate Overview](#)

NEWS CLIPS

- [Local Groups Protest Water Application for Proposed Potash Mine](#)
 - [BLM Okays Potash Exploratory Drilling Project Near Labyrinth Canyon](#)
 - [BLM Gives Green Light to Hatch Point Potash Exploration](#)
-

BLM's February 2013 Oil and Gas Lease Sale

AUGUST 11, 2012

BY JOHN WEISHEIT

- [BLM web page of February 2013 lease sale](#)
- [Press Release \(archived\)](#)
- [List of Parcels](#)
- [Map \(archived\)](#)
- [State BLM web page of all oil and gas lease sales](#)
- [Utah BLM Bulletin Board](#)

The Bureau of Land Management (BLM) Moab Field Office is considering the sale of 48 oil and gas leases covering 79,923 acres. The sale would occur in February 2013. The BLM will be preparing an Environmental Assessment on the proposed lease parcels. The BLM invites the public to identify issues for preparation of the Environmental Assessment.

- **The scoping period for this lease sale ended August 13, 2012**
- **The tentative comment period for the Environmental Assessment is September 21 to October 19, 2012**
- **Protest Period begins November 16, 2012 and ends December 17, 2012**

Send your comments to:
Bureau of Land Management
Attention Melanie Hunter
Moab Field Office
82 East Dogwood
Moab, UT 84532

Or email to:
BLM_UT_MB_Comments@blm.gov
(Include "Lease Sale" in the Subject Line)

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

February 2013 Lease Sale in the News

- [Times Independent](#)
- [Moab Sun News](#)
- [No Fracking in Moab](#). Facebook.

ADDITIONAL INFORMATION

[Arches National Park Air Quality Reports](#)

[Lawsuit of 8/6/2012 to enforce air quality standards of national parks](#)

Map: [Moab Watershed Boundary](#)

Westwater Farms Redux

AUGUST 13, 2012

BY JOHN WEISHEIT



Harley Dome Class II Injection Facility

Update: This facility was transferred to a company called Armada Water, which declared Chapter 11 bankruptcy in May of 2017.

- February, 2017 - [Produced Water Facilities at Harley Dome & Danish Flats Falter Under Impact of Oil & Gas Market Decline](#). Times-Independent.
- May, 2017 - [Armada Water bankruptcy case](#)

About a year ago Westwater Farms fouled their original injection well with precipitates and the capacity of the well was significantly reduced. Hence, the company has decided to drill another well on their property to restore their original hoped for capacity. The original well will be used for injection of fracking fluids as necessary and it will also be used to monitor the movement of injected fluids, in case the fluids might migrate toward the Colorado River.

In the last year, WWF has also experienced financial problems concerning the payment of property taxes and for operation fees to Grand County.

The applicant for the new injection well is New Water Financial, LLC from Fort Collins, CO.

New Water Financial is also applying for a water discharge permit from the Department of Water Quality, and for the purpose of irrigating crops with fracking fluids treated by reverse osmosis.

The public meeting for the discharge permit is scheduled for Monday, September 10, 2012, 6:00 p.m., at the Grand Center on 182 North 500 West.

Public comments must be submitted by September 17, 2012 via post or email to:

- Mr. Matthew Garn
- UPDES Engineering Section
- Utah Division of Water Quality
- PO Box 144870
- Salt Lake City, UT 84114-4870
- email: mgarn@utah.gov
- 801-536-4381

Admin record for Division of Water Quality

- [Public Notice](#) for public meeting for water discharge permit with Department of Water Quality (DWQ)
- [Harley Dome 1 ADR](#). DWQ.
- [Harley Dome 1 PN](#). DWQ.
- [Harley Dome 1 WLA](#). DWQ.
- [Harley Dome Westwater 2012 Permit](#). DWQ.
- [Harley Dome Westwater FSSOB 2012](#). DWQ.
- [Monitoring Report of Wingate Sandstone in Ruby Canyon](#)

Admin Record for Utha Division of Oil, Gas and Mining

- [Report](#) from geologist David Allin for new injection well
- [Motion](#) for Agency Action by WWF
- [Motion](#) by WWF for formal meeting only (bypass informal hearing)

ADDITIONAL INFORMATION

Grand County

- [2012 Report to County Council](#).
- [Ordinance for evaporation ponds](#)
- [Ordinance for produced water](#)

Utah State

- [Home page](#)
- [Well information search](#)
- [Public records](#): Utah Oil, Gas & Mining. (Username and password is ogmquest)

Wastewater (fracking fluids)

- [EPA web site on hydraulic fracturing](#).
- [2004 - Oil & Gas impacts to water resources in New Mexico](#). Shomaker & Assoc.
- [2008 - Health risks of oil & gas development](#). University of Colorado.
- [2008 - Conclusions & recommendations of white paper](#). University of Colorado.
- [2008 - Chemical analysis of gas production wells](#). [ExCel file here](#). The Endocrine Disruption Exchange.
- 2011 - [Hydraulic fracking chemicals](#). US Congress.
- [Fracking chemicals](#). HCN.

Other Harley Dome and Westwater Area Facilities

- [2006 - Modifications at Harley Dome](#)
- [Summit Operating LLC at Harley Dome](#) & (News clipping)
- [2009 - Summit Operating Permit Application](#)

Hydrocarbon Heaven Cisco Development

- [2008 - Hydrocarbon Heaven?](#) Kamala.

WESTWATER FARMS ADMIN RECORD

Class II Injection Well Application

- [July 25, 2012 - Application for second well](#)
- [USGS topo map of Harley Dome and Bitter Creek](#)
- [Satellite image of Harley Dome and Bitter Creek](#)
- [USGS topo with potential monitoring wells located](#)
- [Abandoned wells in 1/2 mile radius](#)
- [Satellite image with potential monitoring wells located](#)
- [Map of affected area](#)
- [2009 - Application to drill; Wastewater injection rules](#).
- [2009 - Westwater Farms hydrogeology report](#). Wayne Downs.
- 2009 - Letter from citizen groups. Proposed operations at Westwater Farms.
- [2010 - Photos of Westwater Farms](#)
- [2010 - Request for formal hearing](#)
- [2010 - Motion for formal hearing](#)
- [Public Notice: November, 2010](#).
- [2010 - MAP: Harley Dome and Westwater Area](#)

- [2010 - Staff Report: Grand County Planning Commission](#)
- [2010 - Audio of Westwater Farms Public Hearing](#) (Dec. 8)
- [2011 - County planning approves conditional use permit](#) (Times-Independent Jan. 27)
- [2011 - County schedules Westwater Farms vote for March 1.](#) (Times-Independent)
- [2012 - Administrative Record.](#) UDOGM.

Stewart Environmental Consultants (Westwater Farms Partner)

- [2009 - Beneficial Use of Produced Water.](#) IPEC.
- [2010 - Presentation to Grand County Planning](#)
- [2010 - Conditional Use Permit Application](#)
- [Map of affected area](#)
- [Pre-treatment schematic](#)
- [Water Chemistry Memo](#)
- [Injection Well Monitoring Program](#)
- [Down's Geologic Report](#)
- [Injection Well Monitoring Program](#)
- [Memo Response Letter](#)
- [Ordinance Report Part 01](#)
- [Ordinance Report Part 02](#)
- [Permit Application Part 01](#)
- [Permit Application Part 02](#)
- [Permit Application](#) (searchable pdf)
- [Permit Review Letter.](#) Fish and Wildlife Service.
- [Protest Letter.](#) BLM.
- [Protest Withdrawal.](#) BLM.
- [UDOGM Staff Memo.](#)
- [Westwater Canyon Monitoring Letter](#) (19 Nov 2010)
- [Log for Westwater Harley Dome.](#) Halliburton.

Westwater Farms in the news

- [January 27, 2011 - PC recommends county approve Westwater Farms](#)

NON-PROFIT ORGANIZATIONS

- [NGO Comments on Air Quality from Oil and Gas Development in Dixie Nat. Forest](#)
- [Endocrine Disruption Exchange](#)

NEWS

- [ProRepublica](#) series on environmental threats from the oil & gas industry.
 - 11/12/09 - Times-Independent: [County enacts production water moratorium.](#)
 - 10/01/09 - Reuters: [Water worries threaten US push for natural gas](#)
 - 9/24/09 - Times-Independent: [Overspray caused by Danish Flats evaporation device violates law, state oversight agency says.](#)
 - 8/09/09 - Associated Press: [Colorado landowners wary of effort to resume drilling.](#)
 - 11/17/08 - Denver Post: [Drilling process causes water supply alarm.](#)
 - 10/21/10 - Salt Lake Tribune. [Ozone raises its ugly head in rural Utah.](#)
 - 10/25/10 - ENN. [Fracking shown to mobilize Uranium in Marcellus Shale.](#)
-

Danish Flats

AUGUST 17, 2012

BY JOHN WEISHEIT

Update: This facility has become a business that is open by appointment only.

February, 2017 - [Produced Water Facilities at Harley Dome& Danish Flats Falter Under Impact of Oil & Gas Market Decline](#). Times-Independent.

Danish Flats was the first commercial facility with evaporation ponds built in the state of Utah for the purpose of disposing fracking fluids from regional oil and gas drilling operations. This was a response by the industry, who encountered resistance for these kinds of facilities by the regulators in the state of Colorado. The facility is along the Interstate 70 corridor in Grand County. Exit 214 is the truck route to the 13 evaporation ponds excavated into the Mancos shale of the Cisco Desert. The facility is controversial because the company intended to have a minimal impact on air quality, and soon found it's operations to be out of compliance. The Department of Air Quality has been very patient about the company ([Danish Flats Environmental Services](#)) bringing the operations into compliance and it remains unclear how this problem will be remediated.

NEW INFORMATION: [Addendum to revised NOI](#). 1/4/2013

- [Danish Flats NOI draft](#)
- [Danish Flats Non compliance Letter](#)
- [Danish Flats Report Birds Bats 2011](#)
- [Danish Flats Revised NOI 25 March 2012](#)
- [Danish Flats RRF Mitigation Agreement](#)
- [Danish Flats Site Process Equip](#)
- [Danish Flats Attachments](#)
- [Danish Flats Emails](#)
- [Addendum to revised NOI](#). 1/4/2013
- [Revised NOI 3/25/2012](#)
- [Danish Flats Info Request 2011](#)
- [Grand County Ordinance 476 Evap Ponds 2008](#)

Spreadsheets

- [ATLSTDEDD 1010003A.xls](#)
- [Danish Flats test 2020091231.xls](#)
- [Danish Flats Material Balance Special Based 04 April 2010 & April 20 2010.xls](#)
- [WWTF rechecked.xlsx](#)

Other

- [Website of Danish Flats Environmental Services, Inc.](#)
 - [Danish Flats satellite image](#)
-

Proposed Pinyon Ridge Uranium Mill at Paradox Valley

OCTOBER 23, 2012
BY JOHN WEISHEIT

NEW INFORMATION about Uranium Milling Projects by Energy Fuels

- [April 30, 2018 - Colorado Denies License for Paradox Uranium Mill](#). Jim Mimiaga of *The Cortez Journal*.
- The project in Paradox Valley is on hold because the uranium market crashed (again). News clip: [Durango Herald](#)
- The water right for the proposed mill in Paradox Valley has been cancelled by the state of Colorado: [ORDER](#)
- Intent to Sue (60-day Notice) over operation violations by Grand Canyon Trust against Energy Fuels uranium processing facility at White Mesa, near Blanding, Utah. [Press Release](#); [60-day Notice](#)

The Colorado Department of Public Health and Environment (CDPHE) will accept written and oral public comments and hold an evidentiary hearing on the proposed Piñon Ridge Uranium Mill in the Paradox Valley, Montrose County, Colorado. The hearing will be held in Nucla, Colorado, on November 7, 8, 9, 12, and morning of the 13th. Much of the hearing time is for the evidentiary hearing, which provides an opportunity for the parties and their counsel to present testimony and otherwise participate in a hearing that is required by the Atomic Energy Act. Information about the hearing is found in the Notice of Public Hearing and Opportunity for Public Comment. Energy Fuels Resources Corp., subsidiary of Energy Fuels Inc., is the proponent of what would be the first new conventional uranium mill since the early 1980s.

Opportunity for oral public comments will be from 4:00 p.m. to 5:00 on November 7, 8, and 9 (after the evidentiary hearing) and beginning at 8:30 a.m. on Monday, November 12, 2012, for so long as interested individuals are available to make comments. It is likely that the hearing on the 13th will be short. Written comments may also be submitted to Judge Dana at the hearing.

For additional information regarding the hearing schedule, contact Judge Richard Dana.

SEND WRITTEN COMMENTS BY NOVEMBER 12 2012 TO:

Richard Dana
Judicial Arbiter Group, Inc.
1601 Blake Street, Suite 400
Denver, Colorado 80202
rdana@jaginc.com
(303) 572-1919 or (800) 272-4837

HEARING TIME AND PLACE:

November 7, 8, 9, 12, and 13, 2012

Hearing: 8:30 a.m.- 5:00 p.m.

Loyal Order of Moose Lodge 635

1045 Main Street

Nucla, Colorado 81424

- Notice of Public Hearing and Opportunity for Public Comment

http://www.uraniumwatch.org/pinonridgemill/CDPHE_HearingNotice.1209.pdf

- CDPHE Piñon Ridge Mill Documents and Information

<http://www.colorado.gov/cs/Satellite?c=Page&childpagename=CDPHE-HM%2FCBONLayout&cid=1251621876866&pagename=CBONWrapper>

Utah passes a new fracking disclosure rule

NOVEMBER 16, 2012

BY LAUREL HAGEN



An oil rig near Canyonlands National Park

On Wednesday, October 24th, the Board of the Utah Division of Oil, Gas and Mining passed a new rule requiring that an oil company using “fracking” in drilling practices must publicly disclose the chemicals used.

Until Wednesday, the state of Utah did not have a requirement for public disclosure of fracking chemicals. The UDOGM vote added a single sentence to state rules on drilling:

“Chemical disclosure. 1.1. The amount and type of chemicals used in a hydraulic fracturing operation shall be reported to www.fracfocus.org within 60 days of hydraulic fracturing completion for public disclosure.”

Fracking, or hydraulic fracturing, is a term for a technique that involves injecting liquid chemicals into a deep well underground at high pressure. This practice fractures underground rock layers with the goal of increasing the output of a petroleum well by releasing trapped liquids and gases, making them easier to extract. Fracking is becoming increasingly popular among drilling companies as they attempt to recover less easily extracted sources of oil and gas.

Fracturing underground rock layers can lead to contamination of groundwater sources by allowing previously isolated water layers to mix with petroleum or fracking liquids. There have been many alleged cases of groundwater contamination around the country, mostly in the northeastern states where population densities bring fracking into close contact with drinking water sources.

In the west, the nearest documented case of fracking contamination comes from [an EPA report on Pavilion, Wyoming](#).

Fracking, in various ways, has been happening in Utah for a long time. However, more recent of oil and gas leases auctions near populated areas combined with the increase in the use of fracking have led to increased concerns from Utah citizens about groundwater contamination.

Fourteen states in the US have passed rules requiring public disclosure, to some degree, of any chemicals injected into the ground for “well stimulation.” This helps nearby residents, cancer researchers, health care providers and local governments to be warned of potentially harmful chemicals entering their water supplies.

The Natural Resources Defense Council, in a [review](#) of fracking disclosure requirements in different states, puts Wyoming’s rules at the top of the list in several categories. Wyoming’s fracking rule is approximately three pages long, and has a number of specific requirements regarding the manner of reporting.

The Board, characterizing this rule as a good start, scheduled a revisitation of the topic for their July 2013 meeting, which gives the public an opportunity to participate more fully in the crafting of the rule.

While the new rule is undoubtedly a step in the right direction, the state will need to take several more steps to make public disclosure rules effective, and to bring them closer in line with those of other states. Much of the drilling in Utah is overseen by the Bureau of Land Management (BLM), and the BLM is currently in the process of drafting its own fracking disclosure rule.

CWC plans to work with the State of Utah, the BLM and fracking experts to help assist in drafting effective rules in the months to come.

Documents:

[Updated Nov. 2012: Official Notice from UDOGM to Operators](#)

[Notice of Agency Action, UDOGM, proposed rule](#)

[UDOGM staff memo regarded proposed fracking rule](#)

[NRDC report on fracking disclosure regulations](#)

[UDOGM fact sheet on hydraulic fracturing](#)

[EPA press release on groundwater contamination in Pavilion, Wyoming](#)

[Wyoming Operational Rules on oil and gas drilling \(fracking rules is near the end, Section 45\)](#)

[Tulsa World article on drilling near the Colorado River](#)

[Salt Lake Tribune article on fracking controversy in Utah](#)

[Comment letter from Western Energy Alliance](#)

[Comment letter from Devon Energy Corporation](#)

Feb 2013 Oil and Gas Lease Sale near Moab: EA Released

NOVEMBER 19, 2012
BY LAUREL HAGEN



This is some of the land proposed for lease just south of Moab. Photo courtesy of Kiley Miller.

UPDATE 11/19/12: On November 16, the BLM released the map and the final Environmental Assessment for the February 2013 lease sale.

Satellite photo maps of SE Utah parcels to be auctioned:

[Dolores/Colorado River confluence parcels](#)

[La Sal town area](#)

[Lisbon Valley parcels](#)

[Parcel just south of Moab](#)

The parcels overlapping Monticello's Water Source Protection Zone, as well as further parcels in Lisbon Valley south of Moab, were deferred from auction. Parcel 042, which is just south of the Moab valley (though near proposed municipal and existing domestic water wells) is still going up for auction, as is Parcel 128 near the La Sal School well, and parcels on private land north of Monticello.

The period allowed for those who filed comments on the EA to file protests with the Interior Board of Land Appeals for 30 days. If the appellant is not satisfied with that process once it's concluded, they have the option to go to court.

[BLM press release and information on filing a protest](#)

CWC plans to continue to participate in the process, both for the lease sale and as leased parcels are developed. We'll post updates when we take further action. The formal public participation process is now concluded (unless you submitted written comments during the EA period, in which case you may appeal the decision). Of course, however, the public may contact the BLM with concerns at any time.

In the meantime, here's some information:

[BLM's general information page for the lease sale](#)

[List of parcels deferred from lease](#), and the reasons BLM listed for the deferral (for those who want to understand why parcels get deferred).

[Statewide map of lease parcels](#)

Lisbon Valley Area lease parcels maps: [#1](#), [#2](#), [#3](#),

[Parcels just north of Monticello: map](#)

[Parcels just south of Monticello: map](#)

UPDATE 9/21/12: The BLM has released the Environmental Assessment for the February 2013 lease sale. Parcel 039, the unit on the edge of the Moab watershed, has been pulled from the sale due primarily to groundwater concerns. Thanks to the BLM for helping to protect Moab's water!

However, many other controversial parcels, including those near the towns of Monticello and La Sal as well as a very dense area of parcels in Lisbon Valley (just south of the La Sal Mountains) are still up for auction.

CWC will be filing comments on the Draft Environmental Assessment, and will post more information as time goes on.

THE PUBLIC COMMENT DEADLINE FOR THE DRAFT ENVIRONMENTAL ASSESSMENT IS OCTOBER 19, 2012

Written comments may be mailed to:

- Moab Field Office
- (Attn: Oil and Gas Lease Sale)
- 82 East Dogwood
- Moab, UT 84532

Or by fax: 435 259-2106.

Electronic comments may be submitted to: BLM_UT_MB_Comments@blm.gov

Please refer to the "February 2013 Oil and Gas Lease Sale" in the subject line of your correspondence.

To see the Draft Environmental Assessment, go here:

https://www.blm.gov/ut/enbb/files/BLM-UTY010-2012-0190EA_LeaseSale_4-with_checklist_embedded.pdf

For a map of existing leases and general leasing designations in the Moab area, go here:

http://www.blm.gov/pgdata/etc/medialib/blm/ut/lands_and_minerals/oil_and_gas/gwp_im.Par.29922.File.dat/IMNo.UT2010-055_AttachK.pdf

For technical information on groundwater protection and BLM oil leasing, go here:

http://www.blm.gov/ut/st/en/prog/energy/oil_and_gas/ground_water_protection.html

PREVIOUS INFORMATION

What's going on?

The BLM has announced the areas proposed for auction in its quarterly oil and gas lease sale. Several parcels are near the towns of Moab and Monticello.

When the parcels are leased, the company can drill for oil or natural gas (though they have to get a specific drilling permit first, build roads, get archaeological surveys, etc). This drilling could involve "fracking," or any number of other drilling tactics; there's no way to know at this point.

Who?

The Bureau of Land Management, a federal agency, manages the land and the mining/drilling activities.

When?

Initial Public Scoping Comment Deadline: August 13th

Environmental Assessment released [tentative]: Sept. 29th

Public comment deadline [tentative]: October 21st, midnight.

Actual lease auction: February 2013

Where?

Email your comments to: BLM_UT_MB_Comments@blm.gov

Put "Feb 2013 LEASE SALE" in the subject line

SEE MAPS BELOW.

How does this work?

TIMELINE:

July 2012: The BLM publishes a map of the parcels being offered for lease

August 13 2012: Final day for submitting official "scoping comments," which the BLM must analyze as part of the environmental assessment

September 29th 2012: The BLM releases a "Draft Environmental Assessment," which is supposed to analyze the possible impacts of developing oil/gas there.

October 19th 2012: This is the last day that the public can submit comments on the draft Environmental Assessment.

October 2012-January 2013: The BLM finishes its environmental assessment and releases a final list of the parcels that will actually be offered for lease

After the BLM releases the final decision, the public has 30 days to appeal that decision to the Interior Board of Land Appeals (IBLA).

If the IBLA doesn't grant the appeal requests, then the public (or, those members of the public who submitted comments by the September comment deadline) has the option to sue the BLM in court to stop the sale.

February 2013: The auction takes place.

Documents:

[Official map of lease parcels from the BLM](#)

[CWC's scoping comments submitted to the BLM](#) on August 13th, 2012 (note: these are comments written to fulfill legal requirements, not to educate the general public; they get somewhat technical).

MAPS

[Moab Area Parcels](#)

[Monticello Area Parcels: close up](#)

[Monticello Area Parcels: wider view](#)

[Lisbon Valley Area Parcels](#)

Green River Refinery Proposed

FEBRUARY 21, 2013

BY JOHN WEISHEIT

Note: a second refinery has been proposed near Green River call Iron Fox Refinery. [Click here](#) to review the application.

###

NEW INFORMATION:

- [March 25, 2014 - Intent to Approve Emery Refinery \(draft\) & Public Notice](#). Division of Air Quality. Public meeting announcement is pending.
- [Request for Agency Action](#)
- Feruary 3, 2014 - Adminstrative Law Judge [Recommends Stay](#) to Executive Director

[Click here](#) to visit the website of Utah Division of Air Quality

###

Emery Refining (LLC), based in Houston, Texas, proposes to build a refinery near Green River, Utah ([map](#)) to process heavy crude into transportation fuels (diesel and kerosene) and for petroleum products you would typically find in a hardware store.

Emery Refining (LLC) was previously called Bridgehouse Refining (LLC). One year prior (2012), the application for this proposed facility came from High Desert Refining (LLC).

To add to the confusion, there is an existing refinery in Green River on the east side of town (see photos below) but this refinery, managed by EcoDomain (according to the signs on the property), has been closed for some time now. The first application submitted by Bridgehouse Refinery was for a facility to be built on the property of this defunct refinery. Now, apparently, the High Desert/Bridgehouse/Emery refining project will built on the west side of town near the junction of Interstate 70 and US Hwy 6.

The refinery under review has been linked to the production of unconventional fuels by Red Leaf Resources, which has proposed strip mining for oil shale in Uintah County in the Tavaputs Plateau, between the Book Cliffs and the White River. Oil shale is a hard rock embedded with waxy-like kerogen.

The following is an excerpt from the Utah Division of Air Quality:

A 30-day public comment period will be held in accordance with UAC R307-401-7. A notification of the intent to approve will be published in the Emery County Progress on February 5, 2013. During the public comment period the proposal and the evaluation of its impact on air quality will be available for the public to review and provide comment. If anyone so requests a public hearing within 15 days of publication, it will be held in accordance with UAC R307-401-7. The hearing will be held as close as practicable to

the location of the source. Any comments received during the public comment period and the hearing will be evaluated. The proposed conditions of the AO may be changed as a result of the comments received.

Comments are due close of business on Thursday March 7, 2013. We suggest you submit them on February 6th. Send your comment letter to:

- Timothy R. Andrus
- Division of Air Quality
- PO Box 144820
- Salt Lake City, UT 84114-4820
- Fax: 801-536-4099
- Phone: 801-536-4414
- email for Tim Andrus is tandrus@utah.gov

DOCUMENT ARCHIVE

- March 7, 2013 - [Comment letter by Grand Canyon Trust, et al.](#)
 - February 1, 2013 - [Division of Air Quality: Intent To Approve](#)
 - February 5, 2013 - [Public notice](#) (Green River Refinery)
 - December 2012 - [Corporate Repsonse to DAQ Questions](#)
 - November, 2012 - [Emery Refinery Notice of Intent](#)
 - February, 2012 - [Bridgehouse Refinery Intent To Approve](#)
 - February, 2012 - [Public Notice](#) (Bridgehouse)
 - February, 2012 - [Bridgehouse Refinery Proposal](#)
 - May 3, 2011 - [Public notice](#)
 - April, 2011 - [High Desert Refinery Intent To Approve](#)
 - 2008 - [Green River Refinery link to Red Leaf Resources' proposed oil shale project](#) (page 11)
 - March, 2007 - [Emery Progress: Green River Says Yes To Refinery](#)
 - June, 2013 - [Way Cleared In Utah for 1st New USA Refinery Since 1976](#). Salt Lake Tribune.
 - Photos - [Exisiting Green River Refinery](#) (inactive)
-

Green River Potash Project

FEBRUARY 28, 2013

BY JOHN WEISHEIT

New information: The federal lease to American Potash for exploratory drilling has expired for lack of payment.

###

Comments are due on Monday March 4th.; close of business day (4:30 pm).

Send written comments to:

Bureau of Land Management
Moab Field Office
82 East Dogwood
Moab, UT 84532

Phone: (435) 259-2100

Written comments may also be submitted via email to:
BLM_UT_MB_Comments@blm.gov

American Potash proposes to drill four exploration core hole locations to assess potash resources in the Spring Canyon Point area of Grand County. Access to drill locations would be along designated routes. Proposed drill pads would be 400 feet x 400 feet in size and an estimated 645 feet at 15 feet wide of new road construction is proposed to access the pads. Total estimated surface disturbance is about 15 acres. BLM is still waiting for information on improvements to designated routes that would increase the acreage for surface disturbance. The exploration work is proposed to begin in Spring 2013 and end in the fall of 2013.

- [Green River Project Vicintiy Map](#)
- [Green River Project Description Draft](#)
- [American Potash Exploration Plan](#)
- BLM Webpage - [Green River Potash Exploration Project](#) (search word: Green River Potash)
- BLM webpage - [Moab District Resource Management Plan](#)
- [Green River Project Vicintiy Map](#)
- [Green River Potash Project Description Draft](#)
- [American Potash Exploration Plan](#)

Corporate Presentations

- [Green River Potash July 2012](#)
- [Green River Potash Sept 2012](#)

Corporate Reports

- [Technical Report Aug 2009](#)
- [Technical Report Green River Potash Project June 2012](#)

Corporate Press Releases

- [01 Dec 2011](#)
- [04 Aug 2011](#)
- [04 Dec 2012](#)
- [06 Sept 2011](#)
- [13 Sept 2012](#)
- [19 Jan 2012](#)
- [30 May 2012](#)
- [Green River Potash Project Technical Report](#)

News clips

- [Local Groups Protest Water Application for Proposed Potash Mine](#)
 - [BLM Okays Potash Exploratory Drilling Project Near Labyrinth Canyon](#)
 - [BLM Gives Green Light to Hatch Point Potash Exploration](#)
-

Update: Rocky Mountain Goat Introduction to the La Sal Mountains

JULY 22, 2013
BY MARY O'BRIEN



Rocky Mountain Goat

If you are concerned, as we are, about the introduction of Rocky Mountain goats (bovine family) into an already compromised ecosystem in the La Sal Mountains, the following are the agency people you can contact and submit public comments to.

After this list are two letters from the Grand Canyon Trust, which will serve as talking points for your letters.

If you have questions please contact Mary O'Brien, the program director for Utah's forest lands at the Grand Canyon Trust:

Mary O'Brien
maryobrien10@gmail.com
435-259-6205

- **Poster:** [Public PowerPoint Presentation for July 23, 2013](#)
- **Presentation:** Sarah Topp
- **Presentation:** Mary O'Brien
- **Table:** [Pros and Cons of the goat introduction issue](#)
- [Management Plan Proposed](#)

UTAH DIVISION OF WILDLIFE RESOURCES (responsible for wildlife introductions in Utah, including on U.S. Forest Service lands)

The director of the DWR reports directly to the executive director of Natural Resources. The **Utah Wildlife Board** is appointed by the Governor and serves as the board of directors for the DWR. After receiving input from the DWR and the public through a series of statewide regional public meetings of the Resource Advisory Commissions (**RAC meetings**), the Wildlife Board sets general wildlife policies for the state.

The DWR is headquartered in Salt Lake City, Utah, but is divided into five geographic regions, with offices in each, that cover the entire state. Most on-the-ground work is handled in the regions and coordinated from the administrative offices in Salt Lake City.

CONTACT INFORMATION

- [Click here to reach all the persons listed below in one email](#)
- [Click here](#) to view all contact information as a pdf document
- **Here are the email addresses for you to cut and paste** (should your email client not be working properly)

Justinshannon@utah.gov, mikestyler@utah.gov, gregsheehan@utah.gov, MikeKing@utah.gov, JakeAlbrecht@utah.gov, JohnBair@utah.gov, DelBrady@utah.gov, CalvinCrandall@utah.gov, BillFenimore@utah.gov, ErniePerkins@utah.gov, kalbrecht@fs.fed.us, allred1911@gmail.com, Sue Bellagamba , nuttterranch@etv.net, jeff@co.emery.ut.us, wyh@xmission.com, trhdds@etv.net, mulehounds@gmail.com, cmicoz@emerytelcom.net, tepehrs@utah.gov, kivory@blm.gov, trishahedin@hotmail.com, djones@preciscom.net, pcowley@fs.fed.us, rchristensen@fs.fed.us, civerson@fs.fed.us, arowley@fs.fed.us, mdiem@fs.fed.us, nrasure@fs.fed.us, sflinders@fs.fed.us

STAFF: UTAH DIVISION OF WILDLIFE RESOURCES

Note: * = Extremely important to contact, but all can/should be cc'd

*Justin Shannon

Wildlife Program Manager
Southeast Region
Utah Division of Wildlife Resources
Justinshannon@utah.gov
Office (435) 613-3708

Mike Styler, Director

Department of Natural Resources
mikestyler@utah.gov
(801) 538-7201

Greg Sheehan, Director

Utah Division of Wildlife Resources
gregsheehan@utah.gov
(801) 538-4702

BOARD: UTAH DIVISION OF WILDLIFE RESOURCES

*Michael King

Southeastern Region [the region of La Sal Mountains]
MikeKing@utah.gov

Jake Albrecht
Southern Region
JakeAlbrecht@utah.gov

John Bair
Central Region
JohnBair@utah.gov

Del Brady, Chair
Northeastern Region
DelBrady@utah.gov

Calvin Crandall
CalvinCrandall@utah.gov

Bill Fenimore
Northern Region
BillFenimore@utah.gov

Ernie Perkins, Vice Chair
Northern Region
ErniePerkins@utah.gov

UDWR: SOUTHEASTERN REGIONAL ADVISORY COUNCIL

***Kevin Albrecht**
PO Box 310
Ferron, UT 84523
kalbrecht@fs.fed.us
Forest Service

Seth Allred
PO Box 625
Huntington, UT 84528
allred1911@gmail.com
At large

Sue Bellagamba
PO BOX 1329
Moab, UT 84532
sbellagamba@tnc.org
Non-consumptive

Blair Eastman

PO Box 202
Elmo, UT 84521
nutterranch@etv.net
Agriculture

Jeff Horrocks

PO Box 44
Cleveland, UT 84518
jeff@co.emery.ut.us
Elected official

Wayne Hoskisson

746 Millcreek Dr
Moab, UT 84532
wyh@xmission.com
Non-consumptive

Todd Huntington

PO Box 1054
Castle Dale, UT 84513
trhdds@etv.net
At large

Darrel Mecham

PO Box 323
Green River, UT 84525
mulehounds@gmail.com
Sportsman

Christine Micoz

105 S 700 E
Price, UT 84501
cmicoz@emerytelcom.net
At large

Travis Pehrson

378 W 500 S
Blanding, UT 84511
tepehrs@utah.gov
Sportsmen

Pamela Riddle

82 E Dogwood
Moab, UT 84532
priddle@blm.gov
BLM

Charlie Tracy
PO Box 1254
Monticello, UT 84535
Agriculture

FOREST SERVICE REPRESENTATIVES (on the UDWR Resource Advisory Councils)

CENTRAL REGION

Sarah Flinders
Spanish Fork Ranger District
44 West 400 North
Spanish Fork, UT 84660
sflinders@fs.fed.us

NORTHERN REGION

Paul Cowley
8236 Federal Bldg
125 S State
Salt Lake City, UT 84138
pcowley@fs.fed.us

SOUTHERN REGION (No FS rep)

NORTHEASTERN REGION

Bob Christensen
PO Box 981
Duchesne, UT 84021
rchristensen@fs.fed.us

SOUTHEASTERN REGION

Kevin Albrecht
PO Box 310
Ferron, UT 84523
kalbrecht@fs.fed.us

US FOREST SERVICE (Responsible for national forest habitat)

The Forest Service is responsible for maintaining habitat in the La Sal Mountains, including for the Forest Service sensitive species La Sal Daisy (*Erigeron mancus*), the Forest Service sensitive species La Sal pika (*Ochotona princeps* subsp. *lasalensis*) and the native condition of the Mt. Peale Research Natural Area.

Key Forest Service Decisionmakers

***Chris Iverson**

Deputy Regional Forester, Region 4

civerson@fs.fed.us

***Allen Rowley**

Forest Supervisor

Manti-La Sal and Fishlake National Forests

arowley@fs.fed.us

Mike Diem

District Ranger

Moab-Monticello Ranger District

mdiem@fs.fed.us

Nora Rasure

Regional Forester

Region 4 (Utah, Nevada, w. Wyoming, so. Idaho)

nrasure@fs.fed.us

FOREST SERVICE REPRESENTATIVES (on the Resource Advisory Councils)

CENTRAL REGION

Sarah Flinders

Spanish Fork Ranger District

44 West 400 North

Spanish Fork, UT 84660

sflinders@fs.fed.us

NORTHERN REGION

Paul Cowley

8236 Federal Bldg

125 S State

Salt Lake City, UT 84138

pcowley@fs.fed.us

SOUTHERN REGION – No FS rep

NORTHEASTERN REGION

Bob Christensen

PO Box 981

Duchesne, UT 84021

rchristensen@fs.fed.us

SOUTHEASTERN REGION

Kevin Albrecht
PO Box 310
Ferron, UT 84523
kalbrecht@fs.fed.us

###

LETTERS FROM GRAND CANYON TRUST (Talking points)

June 2, 2013

Dear Wildlife Board,

On May 5, 2013, the Grand Canyon Trust wrote to the Southeastern RAC and the Wildlife Board, opposing the plan to introduce Rocky Mountain goats to the La Sal Mountains.

We reiterate our belief that the introduction of Rocky Mountain goats to the La Sal Mountains by UDWR is irresponsible, because UDWR has committed neither to (1) monitoring damage these exotic goats may do to the diversity and abundance of uncommon subalpine plant species and dependent wildlife in the small, fragile subalpine areas of the La Sal Mountains; nor (2) responding to any stated limits of species decline the goats might be found to be causing.

To briefly summarize the reasons we find the plan to introduce Rocky Mountain goats to La Sal Mountains to be destructive:

1. Rocky Mountain goats are exotic to the La Sal Mountains.
2. Climate change, with thinner snow cover, earlier snowmelt, higher temperatures, and drought, is stressing subalpine/alpine communities throughout the world and in the West.
3. The La Sal Range is small and is already subject to excessive browsing and grazing by other ungulates as well as an extensive road system, motorized recreation, mountain bike recreation, dispersed and developed campsites, private inholdings, multiple types of forms of hunting, fishing, trapping, climbing, and hiking.
4. Upper elevations of the La Sal Mountains are the only areas not heavily grazed in the La Sal Mountains .
5. Rocky Mt goats lack functionally effective predators in SE Utah.
6. Neither the UDWR nor the U.S. Forest Service have demonstrated any track record, intention, capacity or will to track declines in the suite of remote, obscure, subalpine native grass, forb, moss, and lichen subalpine species, all of which Rocky Mt elk consume.
7. Hunting tag pressure will favor Rocky Mt goat population increases.
8. The Forest Service would be limited in capability vis-à-vis UDWR to protect habitat impacted by Rocky Mt. goats even if they do detect declines in subalpine species diversity.

In 2012 La Sal Mountains snowpack and drought were such that those who use irrigation water from Ken's Lake were cut back in their use by 40%; this year they are being cut back 60% by continuing drought. It is brutal to introduce exotic ungulates into a stressed, fragile mountain habitat when all climate models point to deepening drought and stresses in coming years in southern Utah.

On May 8, the Southeastern RAC passed with two "no" votes the plan to introduce Rocky Mt goats to La Sal Mountains. The plan is supposedly now to include several items prior to introduction of Rocky Mountain goats" but those line items are extremely vague:

1. "Addressing" the Mount Peale RMA
(whatever "addressing" means);
2. Population goals and objectives
(for the mountain goat, but apparently not for subalpine plant species and other wildlife dependent on them)'
3. Addressing endemic plant species
(whatever "addressing" means);
4. Addressing high elevation plant communities
(whatever "addressing" means); and
5. Acquiring a data set for high elevation plant communities
(with no indication of what the data set will be used for)

Notably, in these line items, the UDWR does not commit to:

1. determining whether Rocky Mt goats have reduced the diversity or abundance of subalpine and alpine native species where they have been introduced in Utah;
2. monitoring impacts Rocky Mt goats are having on forbs, grasses, mosses, lichens, bees, or other wildlife species limited to the subalpine and alpine areas of Utah
3. placing any limit on the amount of native species decline UDWR would allow mountain goats to cause; or
4. responding to any limits of damage by removing Rocky Mountain goats.

Unless UDWR is able to clearly state the limits of damage to La Sal Mountain subalpine communities they will accept by Rocky Mountain goats, and commit to monitoring as to whether those limits are broken, the plan to introduce Rocky Mountain goats is simply destructive.

Sincerely,

Mary O'Brien

Utah Forests Program Director
Grand Canyon Trust
HC 64 Box 2604
Castle Valley, UT 84532
maryobrien10@gmail.com
435.259-6205

May 7, 2013

Dear Southeastern RAC and Wildlife Board,

The Grand Canyon Trust opposes the proposal to introduce Rocky Mountain goats to the La Sal Mountains. Rocky Mountain goats are exotic ungulates which, as UDWR notes, typically live in the highest, subalpine and alpine elevations in a mountain range and eat lichens, mosses, grasses and herbs.

The following are among the reasons the Trust opposes introduction of Rocky Mountain goats to the La Sal Mountains:

1. Rocky Mountain goats are exotic to the La Sal Mountains. Rocky Mountain "goats," in the bovid family with cattle, are exotic ungulates to the La Sal Mountains. Have we not learned to avoid introductions of exotic species for some narrow personal interest (in this case viewing and hunting an exotic ungulate)?
2. Climate change is stressing subalpine/alpine communities. Field scientists are ringing alarm bells based on their measurements of impacts on subalpine and high elevation plant and wildlife communities (including butterflies and other pollinators) associated with climate changes (e.g., earlier snowmelt, increased drought, higher temperatures). They note the scant or non-existent ability of these high elevation species to migrate to refugia, because these plant communities and wildlife species are already at the top of their mountain ranges.

It is the height of irresponsibility to add the stress of grazing and browsing by exotic ungulates to climate change stresses on these high-elevation plant and wildlife communities in the La Sal Mountain range in southeastern Utah.

3. The La Sal Range is small and is already subject to excessive browsing and grazing by other ungulates (cattle, elk, and deer); as well as an extensive road system, off-road motorized recreation, dispersed camping, developed campsites, mountain bike recreation, private inholdings, hound and other forms of hunting, fishing, trapping, climbing, and hiking.
4. Upper elevations of the La Sal Mountains are among the only areas not heavily grazed. The upper portions of the La Sal Mountains, for example the Gold Knob area, are among the only locations in the La Sal Mountains that are not heavily grazed, browsed, and trampled by elk, deer, and/or cattle. These are among the only locations

that are not heavily crisscrossed by roads and trails. This is precisely the area in which mountain goats would be grazing and browsing on the diverse, native grasses, forbs, mosses, and lichens.

5. Rocky Mt goats lack predators in SE Utah. Like elk, Rocky Mountain goats are largely free of predators in southeastern Utah, with the exception of potentially some cougar predation. UDWR is only beginning to acknowledge browsing impacts of excessive elk populations on aspen communities throughout southern Utah. UDWR has yet to demonstrate a willingness to limit elk to levels that will reduce or eliminate excessive browsing of aspen sprouts which is resulting in an easily visible and measurable region-wide deficit in recruitment of aspen. Excessive grazing of native forbs, mosses, grasses, and lichens by Rocky Mountain goats will be even harder to track than the easily-seen declines and losses in aspen recruitment.

6. The UDWR and USFS lack capacity to track declines in high elevation plant/animal species. Neither the UDWR nor the U.S. Forest Service have demonstrated either the capacity or will to track declines in obscure native grass, forb, moss, and lichen species anywhere, and yet these are precisely the species that Rocky Mountain goats would be consuming. Pollinators of the native grasses and forbs have never been tracked by the Forest Service.

7. Hunting tag pressure will favor Rocky Mt goat population increases. The pressure to sell hunting tags for Rocky Mountain goats and to make viewing of these exotic ungulates easy for visitors will mean that meaningful control of the Rocky Mountain goat population will be approached reluctantly if at all by UDWR.

8. Forest Service is limited in capability to protect habitat impacted by Rocky Mt. goats. The U.S. Forest Service is charged with responsibility for wildlife habitat while UDWR is charged with responsibility for wildlife populations (particularly huntable wildlife such as elk, deer, and mountain goats). This has set up an historically and currently tense, or even unworkable relationship, whereby any concerns the Moab-Monticello District might express re: excessive grazing and browsing by Rocky Mountain goats would be reduced to a request at the Southeast Region Advisory Council or Wildlife Board to reduce Rocky Mountain goat populations. Such requests can be and often are ignored by UDWR.

9. The Forest Service lacks capacity and will to track obscure, remote species. The Forest Service has demonstrated scant attention to excessive ungulate grazing and browsing of sagebrush community native forbs and grasses, wet meadows, native riparian graminoids and forbs, and aspen community native grasses, forbs, and shrubs. The Forest Service is even more unlikely to monitor, observe, or halt declines in obscure native grass, sedge, forb (wildflower), pollinator, lichen, and moss species that are limited to remote upper areas of the mountains which are hard to access – except by Rocky Mountain goats.

The proposal to introduce for hunting or viewing pleasure a large, exotic ungulate to the

already-stressed La Sal Mountains does not demonstrate any sensitivity to perhaps the most fragile communities of all in these mountains, and the precise communities most immediately threatened by climate change.

Grand Canyon Trust urges the withdrawal of the idea of introducing Rocky Mountain goats to the La Sal Mountains.

Sincerely,

Mary O'Brien
Utah Forests Program Director
Grand Canyon Trust
HC 64 Box 2604
Castle Valley, UT 84532
maryobrien10@gmail.com
435.259-6205

Proposed Anadarko Oil & Gas Development of the Book Cliffs in Grand County

AUGUST 28, 2013

BY JOHN WEISHEIT

Roadless area in the Book Cliffs of Grand County. Tim Peterson.

[Article](#) in the Moab Sun News by Kristin Millis

[Article](#) in the Salt Lake Tribune by Brian Maffly

[Article](#) in Salt Lake Tribune by Brett Prettyman

[Article](#) in the Deseret News by Amy Joi O'Donohue

[Map](#) of the South Books Area on SITLA Parcels in the Book Cliffs (Tavaputs Plateau) Area in Grand County.

Enviromental Impact Statement on Grazing for Grand Staircase Escalante National Monument

NOVEMBER 05, 2013
BY DAVID DEROU LHAC

FEDERAL REGISTER NOTICE

- [November 4, 2013](#)

GRAZING PLAN EIS PUBLIC SCOPING MEETINGS:

The BLM has scheduled public meetings in Kanab, Escalante and Salt Lake City (Dec. 10-12 respectively).

- Dec. 10 in Kanab at the Monument Headquarters building, 669 S. Hwy 89A;
- Dec. 11 in Escalante at the Interagency Visitor Center, 755 W. Main;
- Dec. 12 in Salt Lake City at the downtown city library.

BLM MONITORING FIELD TRIPS

The BLM has also scheduled four field trips in Escalante (Nov 7 and 9) and Kanab (Nov. 13 and 16), to inform the public on how they do rangeland monitoring and long term trend transects.

- Location: Escalante Interagency Visitor Center
- Time(s): Nov. 7th 1-3 PM; Nov. 9th 9 AM-Noon
- Location: Kanab BLM Visitor Center
- Time(s): Nov. 13th 1-3 PM; Nov. 16th. 9 AM-Noon

Note: The BLM is asking attendees to arrive 15 min. prior to the meeting times.

NEWS STORY

http://www.kcsg.com/view/full_story/23922477/article-Public-Invited-to-BLM-Land-Health-Workshops?instance=more_local_news1

ADDITIONAL INFORMATION:

The scoping period will end 30 days after the final public scoping meeting and all comments to the BLM must be submitted by that date which falls on Saturday January 11th, thus making the final date for submitting comments Monday, January 13th. We are hoping that as many of you as possible will be able to attend field trips and public meetings to ask questions and make substantive comments to the BLM regarding this process.

The Grand Canyon Trust will be continuing to voice our support for a collaborative process that utilizes multi-stakeholder field trips and discussions. We will also be pushing the Monument to choose an alternative that:

1. Considers more than just cattle forage and utilization levels (e.g., biological soil crusts, native plant species diversity, intact riparian areas).
 2. Engages diverse stakeholders in grazing decisions (not just the BLM range staff and permittees).
 3. Provides for a diversity of grazing arrangements, including areas of long-term reduced use, non-use, closed allotments, and experimental grazing methods.
-

Development of Groundwater Management Plan for Moab and Spanish Valley

MARCH 27, 2014

BY JOHN WEISHEIT

DIVISION OF WATER QUALITY

- Announcement of public meeting to discuss the process for developing a groundwater management plan for Moab & Spanish Valley
- April 16, 2014 @ 3 PM
- Grand Center @ 182 North 500 West (Moab)
- [Agenda for April 16th meeting](#)

MOAB CITY

- [2014 - Moab Water System Data](#)

GRAND COUNTY COUNCIL

- [March 28, 2014 - Agenda](#) of joint meeting of county and city councils on water useage

SAN JUAN SPANISH VALLEY SPECIAL SERVICE DISTRICT

New information: Order of the State Engineer

- [Web site for Water Right 09-2349](#)
 - [Web site for scanned documents Water Right 09-2349](#)
 - [2011- Water Right Change Application](#) (Water Right 09-2349)
 - [Web site for Water Right 09-2349](#)
 - [Web site for scanned documents Water Right 09-2349](#)
 - [2011 - SJSVSSD letter to Nature Conservancy](#)
 - [Statement of a Water Right Segregation](#)
 - [Historic Property Evaluation](#)
 - [Corrections to the application](#)
 - Map: [Proposed wells and point of diversion](#)
 - Protest: [Living Rivers](#)
 - Protest: [Department of Interior](#)
 - Protest: [Moab City and here](#)
 - Protest: [Canyonlands Watershed Council](#)
 - Protest: [Grand Water & Sewer Service District](#)
 - Protest: [Nature Conservancy](#)
 - Answer to Protest: [SJSVSSD](#)
-

Welcoming the birds and the bees

APRIL 30, 2014

BY TAYLOR THOMPSON

The cold, rainy weather didn't stop the Moab Bee Inspired Gardens Initiative from planting a new pollinator garden at Rotary Park on Saturday morning, April 26.

"This is actually perfect planting weather," Grand Conservation District chair Kara Dohrenwend said. "It's a little uncomfortable for us, but it's great for the plants."

This pollinator-friendly garden is the second in a series of similar installations. Just east of Rotary Park, a forest garden was recently planted with a beehive in the center.

Dohrenwend said she has been working to establish these gardens for quite some time.

"There are native pollinators of all kinds," she said. "It's very important to maintain those populations by providing places that help them pollinate our fruit and vegetable gardens."

According to the U.S. Department of Agriculture (USDA), much of the food we eat exists because of animal pollinators like bees, butterflies and birds.

Three-fourths of the world's flowering plants and about 35 percent of its food crops depend on animal pollinators to reproduce, according to the USDA. These pollinators gather, carry and deposit pollen from flower to flower, which in turn is used to produce a fruit or a seed.

"We're promoting all pollinators with these plantings," said Rhonda Gotway of the Grand Conservation District. Gotway's primary interest, however, is in bees.

"I was a gardener before I was a beekeeper," she said, "but I've always realized the benefits of bees."

Gotway said the bee-inspired garden will consist of various plant species to promote the pollinators' habitat structure.

"Pollinators aren't always using just the flowers," she said. "They use trees and other plants as well."

Dohrenwend said the idea of the new garden at Rotary Park is to provide pollinator plants that will flower during all seasons. And she believes this location is ideal.

A longtime Moab resident and the owner of Wildland Scapes (WLS), Dohrenwend has many years of experience in landscape architecture and ecological restoration and revegetation.

“The willow species is one of the earliest to bloom,” she said, “and there are willows down by the creek that can provide for pollinators as early as March.”

Other plant species at the garden included Missouri evening primroses, Rocky Mountain penstemons and honeysuckles, which bloom all summer long. Each was being zoned strategically, whereas to benefit from lawn overspray.

Dohrenwend said she hopes to see the garden eventually extend from the basketball court to the frog statue near the sidewalk.

“We’re bringing a pollinator garden into what people might consider a manicured landscape,” she said. “The idea is to welcome the birds and the insects.”

As for the potential increase in bees, Dohrenwend said people who tend to fear them can rest assured.

“Bees don’t really swarm at you unless you mess with their home – and this isn’t their home,” she said. “They’re going out to Milt’s here. It’s like a buffet for bees and insects of all kinds.”

The Moab Bee Inspired Gardens Initiative plans to continue working with the City of Moab and the Moab Rotary Club to expand the garden.

“This is a great park,” Dohrenwend said. “The Rotary Club does a lot of hard work here, and I’m excited that the city was open to having the garden installed here as well.”

The plants and materials for the garden, which were funded by the City of Moab, were provided by WLS at a discounted price. Most of the continued efforts, however, will be volunteer labor.

“We’re working together as a community to maintain the garden,” Dohrenwend said. “It’s fun to get out and get our hands dirty, and I think the more we come out and do this, the more people will get into it.”

The Youth Garden Project (YGP), Community Rebuilds and Utah State University (USU) have also shown their support for the pollinator garden.

“The whole point of this is to make it a public venture,” USU Extension Sustainability intern Jeremy Lynch said. “It’s great to see it all coming together.”

Lynch, who worked at the garden alongside Dohrenwend and Gotway on Saturday, is hoping to incorporate the planting of pollinator-friendly species in other community projects as well.

“We’re establishing a rain garden at the USU campus, which will focus more on water harvesting, but will still incorporate these pollinator species and hopefully more edible food species as well,” Lynch said.

"It's great that people in the community are coming together to share a common interest in gardening," YGP Garden Manager Jess Oldham said.

Oldham, who says she is eager to see locally sourced perennials at the garden, will also be promoting the pollinator plants at YGP's upcoming plant sale.

The annual sale, which will feature a large variety of plants from WLS and Castle Valley growers Pam Hackley and Alice Drogin, will take place at YGP from 4 to 7 p.m. on Thursday and Friday, May 1 and 2. It will continue on Saturday, May 3 from 9 a.m. to 2 p.m.

"In the past, we've sourced plants from nurseries in the Provo area," Oldham said. "It's exciting to have them all locally grown this time."

Oldham suggests that potential buyers check out this year's offerings at www.youthgardenproject.org and come prepared with a list of needed items, as the event sees lots of traffic.

"There will be also be plenty of knowledgeable people there to answer questions," Oldham said. "Anyone interested in pollinator gardens should definitely stop by."

Gotway said there will be handouts available at the WLS Plant Nursery as well.

"We drafted lists of different plant species that do well locally for native pollinators and honeybees alike," Gotway said. "I think half the battle is that most people don't know what to plant for pollinators. These lists show not only what species are good for our area, but also the different bloom periods as well."

According to the Xerces Society, a nonprofit organization that works to protect invertebrates and their habitats, native plants are the best source of food for pollinators because plants and their pollinators have coevolved.

"Our vegetables do much better with native pollinators," Dohrenwend said. "Bringing this into our daily lives is so essential to our food."

Grand County bee inspector Jerry Shue also sees great potential in the pollinator gardens.

"I think the coolest thing is how all of this came together," he said. "All these different community groups were somehow on the same page with establishing these gardens."

Shue, who took time Saturday morning to help plant the garden at Rotary Park, is looking forward to seeing more community involvement in these projects.

"Some people may not care about bees, but they do care about their gardens," Shue said. "I think it will be fun to have these pollinator gardens around town, and we're hoping to have interpretation and uniform signage on them as well."

Although the Moab Bee Inspired Gardens Initiative is in the developmental process, its members are eager to get planting. And Gotway encourages others to participate.

“We’re trying to get the word out in hopes that these sorts of things spring up all over town,” she said. “And we want to invite anyone to join in and be part of the initiative.

“Here in Moab, we’re so far removed. We have to take care of ourselves, and planting these gardens is a great way to do that.”

New garden project aims to 'bee inspired'

APRIL 30, 2014

BY RUDY HERNDON, MOAB TIMES-INDEPENDENT

Grand County honeybee inspector Jerry Shue is not a gardener by trade, and local resident Rhonda Gotway hasn't always taken such a strong interest in honeybees.

But the two of them eventually found that their interests overlap, and that brought them together last weekend to develop the first of many planned bee-friendly demonstration gardens around Moab.

The Moab Bee Inspired Gardens initiative is still in the early phases: at this point, it hasn't been formally organized, according to Gotway, a Grand Conservation District board member.

But Gotway, Shue and three other hardy souls couldn't wait to get started on a new garden plot at Rotary Park, and not even Saturday's unpredictable bursts of rain and blustery winds could keep them away from the job.

"The idea is to get out on the ground," Gotway said April 26.

For its first assignment, the group planted a combination of native and non-native species that bloom in the spring, summer and fall, including honeysuckle vines, penstemons, yarrow, snakeweed and lavender.

The group chose the selection to attract both native and non-native pollinators, including honeybees, according to Gotway.

Kara Dohrenwend of Wildland Scapes sold the plants to the city of Moab at a 30 percent discount; other project partners include the city, the Rotary Club and Utah State University's local extension office.

In addition to the plantings in Rotary Park, the group has already identified other places that could be transformed into pollinator-friendly yards.

It has also developed a list that includes landscaping options for farms and other large properties, as well as different possibilities for homes on smaller lots, Dohrenwend said.

Future efforts will likely include an educational component to address the many misconceptions about honeybees, and to highlight the valuable roles that they play as pollinators.

Gotway is hoping that more and more people will use that information to set up their own pollinator-friendly gardens, and she also welcomes residents to take part in the Bee Inspired initiative.

“We hope that people will join in,” she said.

For more information, contact Jerry Shue at: 435-260-8581, or Gotway at: 435-260-2231. Additional information can be found through Utah State University’s sustainability and extension offices.

Wildland Scapes is open from 8 a.m. to 5 p.m. on Mondays through Thursdays, and from 8 a.m. to 6 p.m. on Fridays. Saturday hours run from 9 a.m. to 4 p.m. The nursery is located at 1471 E. Mill Creek Dr.

The Youth Garden Project, which is holding a plant sale from Thursday, May 1 through Saturday, May 5, is another great resource, Dohrenwend said.

Read more: [Moab Times-Independent - New garden project aims to bee inspired](#)

Permaculture rain garden at USU-Moab helps teach about wise water use

APRIL 30, 2014

BY MOLLY MARCALLO, MOAB TIMES-INDEPENDENT

Utah State University-Extension Sustainability hosted “Building Rain Gardens,” a Bee Inspired Gardens workshop at the USU-Moab campus last weekend. Forty Moab residents participated in the workshop, learning water-harvesting practices by actively transforming the campus’ barren parking lot into a water-wise permaculture garden.

Opening the two-day workshop, USU-Moab Dean Steve Hawks said permaculture principles intersect directly with the mission of the university. “Our mission overlaps with the permaculture idea of creating a world that we want,” Hawks said. “This USU permaculture garden will capture that sentiment.”

Another Bee Inspired Garden, the USU permaculture garden, will create water-wise harvesting practices while providing a local food forest and pollinator attracting plants. It will also serve as a flagship learning garden for the local community and the campus, with signs explaining the permaculture methods.

Other Bee Inspired Gardens include Rotary Park, the Community Rebuilds Campus, and the Canyonlands Field Institute Professor Valley site.

Jason Gerhardt, an ecological designer with Real Earth Designs, led the workshop. Gerhardt posed a simple question to the participants: “How do we use rainwater in an intelligent way?”

Saying “water is not a waste product,” Gerhardt told participants that by living more in harmony with given resources, water runoff can be used to feed the landscape more intelligently. Water harvesting design, “is about taking rainwater running off impervious surfaces and bringing it back to the plants and the soil,” he said.

In order to harvest water at the USU site, the participants shaped the earth into swales (water-harvesting ditches) and added rocks to prevent soil erosion and conserve moisture. Jeremy Lynch, USU-Sustainability intern, called this practice “using native technologies.”

“Lining the swale with rocks is definitely a technology that’s much older than the European style of gardening,” Lynch said.

By using traditional methods of water harvesting, Lynch said the garden creates an integrated ecological system appropriate to the landscape of southeastern Utah.

“Even though we live in a riparian desert environment, everything we do affects the

desert,” Lynch said. “It behooves us to be good water, land, and ecosystem stewards.”

Native plants such as golden currant, yarrow and Utah serviceberry were planted in the garden, along with fruit trees including jujube, apricot and Asian pear. The edible plants will provide food for locals while also serving as pollinators for the local bees.

Although members of the Bee Inspired group has a couple projects slated for next spring, they also want to develop into an active resource for people seeking information about permaculture. Lynch said a goal of the Bee Inspired Garden project is to “encourage people to pursue these ideas in their own way through our more public projects.”

Lynch said many participants joined the workshop to learn and hone skills to implement permaculture projects on their own home sites.

“Some of us [in the Bee Inspired Group] can help design and build projects,” he said.

Serah Mead, associate director of Moab-based Community Rebuilds, participated in the workshop along with Community Rebuilds homeowners and interns. She said there exists an intersection between the goals of the Bee Inspired group and Community Rebuilds, a nonprofit group that builds affordable, energy-efficient housing primarily by replacing older mobile homes with straw-bale homes.

“One of our principles is to provide education and sustainability,” Mead said. “What the Bee Inspired Garden [group] does for the larger community, Community Rebuilds tries to provide for our intern community.”

Lynch feels confident that these intersections and interests in sustainability will continue to grow throughout the Moab community.

“The success of the workshop is measured in community participation,” he said. “The enthusiasm was at a level that was encouraging, about 40 people each day spending their time transforming the garden.”

“It was the most successful and fun thing I’ve done in Moab,” Lynch added.

For more information about the Bee Inspired Gardens or to learn about permaculture in Moab, contact Lynch at: jeremyelliotlynch@gmail.com or Roslynn Brain at: Roslynn.brain@usu.edu.

Read more: [Moab Times-Independent - Permaculture rain garden at USU Moab helps teach about wise water use](#)

Bishop Lands Bill - Citizens Meeting

MAY 04, 2014
BY CHRIS BAIRD

Please see below for maps related to the presentation on Monday, May 5th. The excel file is forthcoming.

[Book Cliffs Detail](#)

[Potash Alt 1 - 3](#)

[Conservation](#)

[All Oil, Gas, and Mining](#)

[OHV and Roads Alt. 1](#)

[OHV and Roads Alt 2](#)

[OHV and Roads Alt 3](#)

[Oil and Gas Alt 1](#)

[Oil and Gas Alt 2](#)

[Oil and Gas Alt 3](#)

[Recreation Alt 1 - 3](#)

[Recreation Alt 1](#)

[Recreation Alt 2](#)

[Recreation Alt 3](#)

Below is a revised version of the comment letter sent to the Grand Co. Council regarding their proposal to Rep. Bishop's Public Lands Initiative. This letter includes a section ""Assessment fee for proposed use of haul route" that was submitted after the 5pm deadline and may not be part of the public record. * This is Canyonlands Watershed Council's opinion, which was withheld during the Citizens Meeting of May 5th.

[Canyonlands Watershed Council's Comment Letter](#)

USGS announces plans to conduct a three-year groundwater study in Moab

JULY 31, 2014

BY JEFF RICHARDS, MOAB TIMES-INDEPENDENT

<http://www.riversimulator.org/farcountry/News/USGS/MoabWatershed30to40PercentSmallerThanPreviouslyReported.pdf>

How much water does Moab really have?

AUGUST 06, 2014

BY ERIC TRENBEATH, MOAB SUN NEWS

http://www.moabsunnews.com/news/article_7474c206-1cd8-11e4-9fe8-001a4bcf6878.html

The Eastern Utah County Coalition for the Development of Oil and Gas Infrastructure

OCTOBER 09, 2014
BY JOHN WEISHEIT

BREAKING NEWS

- 4/19/15 - [Project Could Transform Local Coal Market to International](#). The Richfield Reaper.
- 12/8/14 - [Leaders Drop Wells-to-Rails Plan For Uinta Basin Oil](#). Salt Lake Tribune.
- 12/15/14 - [Vision for "National Parks Highway" has Grand County Hole](#). Salt Lake Tribune.

BASIC INFORMATION: For railroad study, construction and federal loan

- [2013 Presentation: Uintah Basin Energy & Transportation Study](#). Pope.
- [Fact Sheet - Uinta Basin Rail Road](#). Utah DOT.
- [Program Guide - Transportation Infrastructure Finance and Innovation Act \(TIFIA\)](#). US DOT.
- Website - "Learn More About TIFIA". Office of Innovative Program Delivery.

SEVEN COUNTY COALITION MEETINGS

- [Agendas: September to November 2014](#)
- [September and October 2014: Coalition Minutes](#)
- [September 26, 2014: Solicitation for Partnerships](#)
- [October 7, 2014: Amended and Original Request for Qualifications for Engineering Planning Survey](#)
- [December 6, 2014: Rules and Regulations for the 7 County Coalition](#)

ENGINEERING QUALIFICATION PROPOSALS

- [Request for Qualified Engineer Proposals](#)
- [670, LLC](#)
- [Ames](#)
- [HDR](#)
- [Jones and DeMille](#)
- [WATCO](#)

COMMUNITY IMPACT BOARD (CIB)

- [Utah Code](#)
- [Guidelines](#)
- [Community Impact Board \(CIB\) - 2013 Program Summary](#)
- [CIB - 2013 Legislative Report](#)
- [CIB - 2024 Legislative Report](#)
- [CIB - Agenda for October 2014](#)
- [CIB - Minutes of September 3, 2014](#)

CIB MEETING AUDIO

- [September 3, 2014](#)
- [September 12, 2014](#)
- [October 2, 2014](#)
- [October 3, 2014](#)
- [November 7, 2014](#)

CITIZEN RESPONSES

- [Citizen Comments Received After The Sept. 2014 Public Forum](#)
- [Christina Sloan - Letter of Question about 7 CC](#) (September 2014).

DOCUMENTS

- [2014 - Utah Coal: A Report and Scenario Plan](#). Rural Planning Group.

NEWS and OpEds

- [Salt Lake Tribune](#)
- [Castle Country Radio](#)
- [Letter to the Editor](#)
- [ETV 10 News](#)
- [Moab Sun News Op Ed](#)
- [7CC Op Ed](#)

STUDIES

- [UDOT - Grand Uintah County Connection Final Feasibility Study](#)
-

Moab Bee Inspired Garden video

JANUARY 22, 2015

BY UTAH STATE UNIVERSITY EXTENSION

<https://www.youtube.com/watch?v=5Gd7YHKxfbs>

Campus Permaculture Project Gets Exported To Moab

JANUARY 27, 2015

BY JON KOVASH, UTAH PUBLIC RADIO

On the Logan main campus, work is underway on a permaculture teaching garden, which will demonstrate alternatives for dealing with storm water in the city. A USU Professor is now doing the same thing in Moab.

Like many Utah towns, Moab struggles to conserve water. There's still a lot of Kentucky bluegrass, with the sprinkler runoff flowing down the gutters, heavy irrigation for hobby alfalfa farms, aggressive storm drainage, and the city still sells tap water to oil and gas drillers. Enter Dr. Roslynn Brain, USU professor in Sustainable Communities. During the last year Brain has helped launch an effort to build "rain gardens" all over Moab. She says she was inspired by local bee keeper Jerry Shue.

"He had an idea to put in pollinator gardens throughout the town. Then we found out that people with the USDA Natural Resources Conservation Service, the BLM, there are individuals throughout the community of Moab who are interested in these concepts. And so we all met together and came up with the idea of collaborating on an initiative to put in bee-inspired gardens. There's already a strong movement in Moab of gardeners and of sustainability. People seem to understand these concepts," Brain said.

The USU program has attracted support from a number of schools, businesses and nonprofits in Moab. From saving local native bees, the goals have grown to include water conservation efforts, food gardening, and creation of new wildlife and "natural" space. Dr. Brain has been aided by Jeremy Lynch, a USU permaculture intern, who previously managed the Moab farmers market.

"When we design these gardens they're unique to each space and they reflect the ecology of the area. We're developing gardens reflective of the natural vegetation, and a canopy system wherein we have an overstory, under story, herbaceous layers, that function with one another, that don't require the yearly, the annual inputs that a typical, conventional, monocultural agricultural system does," Lynch said.

In other words, a rain garden. Besides rain water, it's hoped that both public and private grey water systems will become part of the picture. Lynch says compared to nearby states, Utah's laws on greywater disposal are needlessly strict and need to be reformed.

"Figuring out how to implement green infrastructure in town, essentially how to manage water as it moves through the cityscape. Right now we have a lot of gray infrastructure, which we'll call it, which just tries to flush the water right out of town without utilizing it to any positive end," Lynch said.

Lynch gave me a tour of the rain garden at the USU/Moab campus.

"And the big function of this garden, we call the rain garden, is that we're harvesting the water off this entire roof up here covering the Walker lumber yard, which flushes out right here, you see it follows a rock swell throughout the entire garden," Lynch said. "And so what this used to be was a big patch of asphalt. We had it excavated out, and then we had a workshop with about 40 local community members. And as you can see now, even though it's the middle of the winter, there are a number of fruit trees. There are a number of berry bushes, there are some smaller local and native grasses, as well as I think about 800 plants in this one area alone. It's really beautiful to see it filled up with water – it just looks like its own creek corridor on the way to Pack Creek and Mill Creek. Growing these fruit trees. We're growing some smaller edible species. The banana yucca we have over there, we have a lot of herbs. We have some thyme right in front of us."

If permaculture does take off in Moab, Dr. Brain envisions a future Moab where the streets are greener and more interesting.

"I would like someone to be walking throughout the town and be able to stop on the way at a community garden and pick some berries, or see the pollinators interacting with perennial pollinator plants, and see that you can grow a beautiful garden without putting in municipal water," Brain said.

So far local partners in the project have included the Moab Charter School, Canyonlands Field Institute, the Youth Garden Project, Community Rebuilds and the Aarchway Inn. If work is to proceed as planned, Dr. Brain says USU must find the funding for a full-time coordinator.

Building community through permaculture

JUNE 18, 2015

BY JEREMY LYNCH, MOAB SUN NEWS GUEST COLUMNIST

Looking out a window at USU Moab, a new and special garden – the work of a community – gleams the short arm of light afforded by the late winter sun earlier this year. Each detail – from the young fruit trees (now caged from the browsing deer) to the curving, rock-lined swale – brings to mind an aspect of the design process as it developed and unfolded over the course of a year. What differentiates USU Moab's Rain Gardens from so much urban landscaping here in the valley is not solely the aesthetics of the space itself nor how precisely it is designed to function with the local ecology, but how the design process was conceived and carried out.

Throughout its inception and implementation, the rain gardens have been a community-designed project. Observation was integral to the process. In our case, it was the shared observation of an invested community.

Building upon the work of motivated citizens and the local Conservation District, USU Moab, in collaboration with the Bee Inspired Gardens Group, is in the midst of establishing multiple rain gardens on its downtown campus in an effort to provide water-wise permaculture education to the larger community. Throughout 2014, USU Extension Sustainability Director Dr. Roslynn Brain, and myself, enlisted the guidance of Jason Gerhardt of Real Earth Design to design and implement the rain gardens at the site of a decades-old parking lot.

In their design, the gardens both hearken to Moab's ancient roots and its recent history while incorporating the present-day permaculture sciences in order to “un-pave” the way to a future of more permeable landscapes, healthier waterways, a fortified watershed and equal opportunity education.

With an informed look, each element in USU Moab's Rain Gardens is nuanced, interconnected and clear. The long, sloping swale – or depression – lined with river cobble curving through the garden is designed to slow, capture and infiltrate water from the roofs of nearby commercial buildings. Working both with the natural ecology of the drylands environment as well as the human ecology of urban infrastructure, downspouts feed roof runoff into the swale designed to function like a creek or wash, transporting water during storm events via a meandering course through an oft-neglected leg of the water cycle, feeding thriving plants along the way, all while addressing issues of erosion, non-point source pollution and aquifer depletion. The use of rock in water-harvesting infrastructure, an epochs-old indigenous practice, is employed for its functional utility with the added benefit of providing an aesthetic appeal often sought in modern landscaping.

All of the materials used are sourced locally and are engaged in recycling, reconstitution processes. For example, the mulched wood of invasive Russian olive trees holds moisture in the soil while itself breaking down into a hearty tilth. As noted, the entire

garden is mulched (excepting the swale), including the boomerang berms wrapping the young fruit trees to maximize water retention. The composting manure of local mules provides nutrients for young plant growth, inviting biologic life into sandy soils beneath the mulch. These soils are amended, increasing exchange while minimizing hidden fossil fuel inputs and energy expenditures inherent in commercial gardening and farming practices which source their amendments non-locally.

The plants themselves – trees, shrubs and herbaceous species, most of which were grown from locally harvested seed – are planted in patterns which mimic the canopies of dryland forest ecologies, creating microclimates to support and invite unique air, surface and soil life while serving functions which support one another, including: nutrient accumulation, nitrogen fixation, and shade provision. The last of which – shade – is truly a resource in any desert environment, especially in areas of the garden still surrounded by asphalt and backed by a two-story brick wall radiating the absorbed sunshine. In addition, the plants themselves were chosen for their suitability to our unique climate, for their ability to amend soils, provide food and habitat for pollinators, as well as food and education for people. Selections admix the 20th century's history of extensive orcharding in the valley – peaches, pear, plum, cherry, even jujube – with native species like the desert willow (*chilopsis*). As an understory, native sand cherry, Utah serviceberry and golden currant crowd the banks of the swale. Apache plume, a nitrogen fixer, pocks the landscape with its pluming bloom, and ground level herbs and medicinals – from thyme to yarrow – work the soils near the roots of trees. Native blanket flower, lo-grow sumac shrubs, Rocky Mountain penstemon and hyssop fill out the native aesthetic midst bee balm and bright daylilies, while banana yucca and Indian rice grass provide an additional alternative food source stabilizing the bank of the swale alongside native three awn and little blue stem grasses. Every flowering plant draws hungry native bees, over 900 species of which call Utah, the Beehive State, home.

Maybe most important of all is that the design for the garden, as well as its installation, was determined in large part through community participation in a series of public workshops. This is where permaculture design transcends the garden and enters into social dynamics. Many of the ideas proposed in these workshops have become realities in the garden. This includes the two tree islands planted with all native vegetation in the heart of an asphalt parking lot.

The perspectives offered up during the workshops – both from minds new to permaculture as well as from practiced gardeners and landscape designers – have proven an invaluable resource. Through these workshops, we were able to stack the functions of teaching, learning and designing – all before a single plant went into the ground.

This presses the point: permaculture design is about more than growing gardens. It is about growing people and communities through an increased interaction with and knowledge of local ecology. In other words, it is about teaching people to teach themselves how the world works around them. In doing so, we build the foundation for shared education and understanding which seeks to work with – not against, nor in neglect of – our environment.

As USU Moab's Rain Gardens grow up – as the intention of design and function become more apparent with age – they will serve as an educational learning space for students and the community, focusing not only on the benefits of practicing water-wise habits, growing food sustainably, and supporting local pollinator populations, but as well on the social dynamics of thoughtful design and the positive, community-wide effects this creates. The hope with our garden is to encourage others, through education as a community resource, to 'bee inspired' to pursue their own projects with an ecological mindset; whether they are growing gardens, managing urban drylands infrastructure, working with sustainable building, providing childrens' education – anything.

Through education, we can establish the corridors and links that encourage positive exchange, be it a garden built into its local ecology, or a teacher in front of a class of her students. A strong education will spread, settle and sprout like windblown seeds across a healthy landscape.

It is a bright vision, and the time is as ripe as spring cherries to further the work of localized watershed restoration in the drylands Southwest. And in doing so, to call out community spirit, investment and innovation. Collaboration will prove the corridor to good work. Ease our waterways. Establish our soils. Grow our food. Repeat.

County Coalition to use Community Impact funds to Deliver Coal to Oakland Port

JULY 23, 2015

BY JOHN WEISHEIT



Sevier County economic director Malcom Nash displays picture of Oakland Port

The Community Impact Board (CIB) set aside \$53 million to help fund a railroad to transport hot, waxy crude from the Uinta Basin to refineries. It was decided that the \$3 billion railroad was infeasible and the plan was scrapped. Now the Board will use these funds to build a \$275 million coal terminal at the deep water port at Oakland California for the international coal market.

The core mission of the CIB: "... is to mitigate socio-economic impacts resulting from natural resource development on federal lands." The intent of CIB funds are about helping rural communities improve their quality of life, and not about helping the bottom line of corporations that turn profits from the burning of dirty fossil fuels.

WRITE AN eMail to the CIB board members (cut and paste):

ggalecki@bowieresources.com, gdwalker@utah.gov, rellis@utah.gov,
gsnow@uwcd.org, jmatson@kane.utah.gov, claudiaj@cut.net,
bbadams@sanjuancounty.org, kpeatross@duchesne.utah.gov,
mmckee@uintah.utah.gov, nzeenati@utah.gov [Click here to write to: Ron Winterton](#)

NGO RESPONSE

- [October 2, 2015 - San Francisco Baykeeper files lawsuit against proposed Oakland Coal Terminal](#)
- [Click here](#) to read the press release from the NGO coalition
- [Click here](#) to read the letter from the NGO coalition to Utah's Community Impact Board (CIB)
- [Click here](#) to read the letter from EarthJustice
- [Click here](#) to read the story in the East Bay Express by Darwin BondGraham

GRAMA REQUESTS

- [Click here](#) to read Jeff Holt's email to CIB.
- [Click here](#) to read letter from BMO Capital Markets to county commissioners

PUBLIC NOTICES

- [CIB meetings, minutes and audio](#)
- [July 17, 2015 - Six County Infrastructure Coalition](#) (CIB funding).
- [List of CIB members](#)

CIB REVENUE BY COUNTY

- [2010](#)
- [2015 Spreadsheet](#) (.xlsm)

NEWS

- [August 25, 2015 - NGO coalition press release and letter to CIB](#)
- [August 13, 2015 - State CIB Rejects Jail Funding Request](#). Moab Sun News.
- [July 21, 2015 - Plan to Send Coal Through Oakland Met with Protests](#). CBS News: San Francisco.
- [April 28, 2015 - Coal Port Looks Like a Risky Venture](#). SL Tribune Editorial Board.
- [April 27, 2015 - Utah Coal: California Here It Comes and Not Everyone Is Happy](#). Salt Lake Tribune.
- [April 7, 2015 - Project Could Transform Local Coal Market to International](#). Richfield Reaper.
- [December 8, 2014 - Leaders Drop Wells-to-Rails Plan For Uinta Basin Oil](#). Salt Lake Tribune.
- [E and E](#)
- Contra Costa Times: [Oakland City Council packed for special hearing on controversial coal shipping proposal](#)

- NBC Bay Area: [Pollution, Health Concerns Over Plan for Coal Exports at Oakland Port](#)
 - KQED: [Oakland City Council Moves to Block Coal at New Port Terminal](#)
 - CBS-Oakland (KPIX): [Oakland Residents Weigh In On Proposed Coal Train Terminal](#)
 - SF Bay News: [Coal shipments fuel heated Oakland debate](#)
 - Logistics Management: [Crops, not coal, are best for Oakland](#)
 - East Bay Express: [Live - Oakland City Council Hearing on Coal](#)
 - San Francisco Biz Journal: [Developer and activists ready for showdown over coal shipping at Port of Oakland](#)
 - San Francisco Events: [Oakland -Public Hearing on the Health & Safety Impacts of Coal Exports in Oakland](#)
 - Patch: [Hearing on Coal Exports from Port Draws Hundreds](#)
 - Inside Bay Area News: [Drummond - A showdown over coal in Oakland](#)
 - [Supply Chain 247](#)
-

The good and the bad news about Moab's rain

JULY 30, 2015

BY MARY O'BRIEN

<https://moabsunnews.com/2015/07/30/the-good-and-the-bad-news-about-moabs-rain/>

BLM Moab District Master Leasing Plan DEIS

SEPTEMBER 25, 2015

BY JOHN WEISHEIT

Released: August 21, 2015

90-day comment period ends November 21, 2015

BLM website information:

- <http://www.blm.gov/ut/st/en/fo/moab/MLP.html>

Send your comments to:

eMail: blm_ut_mb_mlpcomments@blm.gov

Mailing Address:

Bureau of Land Management
Canyon Country District Office
Attn: MLP
82 East Dogwood
Moab, Utah 84532

NOTE: To facilitate analysis of comments and information submitted, we strongly encourage you to submit comments in an electronic format.

DOCUMENT ARCHIVE

- Moab Master Leasing Plan Draft Environmental Impact Statement (documents are combined)
 - [Maps: Chapter Two MLP DEIS](#) (combined)
 - [Maps: Chapter Three MLP DEIS](#) (combined)
-

Bee Inspired Gardens at Aarchway

OCTOBER 22, 2015

BY RUDY HERNDON, MOAB SUN NEWS

Enough work.

After a year of planning – and planting – Moab Bee Inspired Gardens volunteers are in the mood to celebrate. On Saturday, Oct. 24, from 9 a.m. to noon, they will host the official grand opening of their biggest project to date, a 1,000-plus-square-foot garden at the Aarchway Inn.

They're holding the event partly as a thank-you to the 12 to 15 volunteers who were on hand to help out, and as an introduction to the ecological design concepts that guided their work on the project.

"It's going to be a fun, casual, educational time where people who have heard about Bee Inspired Gardens and are interested can come talk to us and find out more," Utah State University-Moab student intern and Bee Inspired volunteer Claire Core said.

Core often hears from individual homeowners who want to learn more about pollinator-friendly and water-wise gardens. She normally directs them to Bee Inspired's website at beeinspired.usu.edu. But she said this weekend's event offers them a great opportunity to speak directly with some of the group's most active members, who can offer them tips about ecologically friendly gardening methods.

At 9:30 a.m., TerraSophia founder and ecological landscape designer Jeff Adams will talk about earthworks and rainwater harvesting. His talk will be followed by a 10:30 a.m. overview of the Aarchway project, and an 11:30 a.m. tribute to Aarchway Inn owner Mike Bynum and others whose support was instrumental to the project's success.

"We want to make sure that (Bynum) gets credit for supporting ecological landscaping," Core said.

The USU-Moab-led Moab Bee Inspired Gardens project grew out of the Grand County Conservation District's efforts to improve pollinator habitat, which, in turn, drew local beekeepers and gardeners into the fold.

A small group of volunteers established the first Bee Inspired Garden at Rotary Park on a rainy spring day in 2014. Five more projects have since taken root at USU-Moab, the Youth Garden Project and other sites around Moab and Castle Valley, and two new projects are in the works.

Adams first entered the picture when Core and Dr. Roslynn Brain of USU-Moab Extension Sustainability approached him with the idea of facilitating a community workshop just over a year ago.

“Through that, I just stayed involved,” Adams said. “I ended up helping and teaching and overseeing the implementation of it.”

With Bynum's blessings, Adams, Core and a group of volunteers set out to transform a barren, eroded and sandy hillside behind the Aarchway into a model garden that visitors and residents alike can learn from.

In April, volunteers began to expand the Aarchway's garden area with half-moon-shaped terraces that will slow down erosion at the site, and planted golden currants, paperflowers, creeping phlox, sundrops and other species that pollinators love.

Core said the garden has grown six-fold since that time, workshop by workshop.

In addition to the garden itself, Adams supervised the construction of new swales and basins to harvest stormwater runoff; volunteers also developed landscaped pathways that serve as buffers from the inn's parking lot.

Most recently, a group of Utah State University students from Logan helped volunteers put in more than 150 pollinator-friendly and water-wise plants, ranging from shrubs like sumac and false indigo to bunch grasses and hardy perennials like yarrow and echinacea.

“It's a really impressive, beautiful garden out there now,” Core said. “It's quite the change.”

Completed Bee Inspired Gardens project celebrated at Aarchway Inn

OCTOBER 22, 2015

BY MOLLY MARCALLO, MOAB TIMES-INDEPENDENT

The Moab Bee Inspired Gardens (BIG) Initiative, in partnership Utah State University –Moab, celebrated the completion of their largest pollinator attracting, water wise garden at the Aarchway Inn on Oct. 24.

USU–Moab sustainability intern Claire Core credited the four hands-on community workshops, Aarchway Inn staff, and approximately 50 volunteers for making the garden a reality.

“I’m totally elated to have this wrapped up and to be able to celebrate it with everybody who has been involved,” Core said.

The BIG group has launched several gardens throughout the community — including at the Moab Charter School, Canyonlands Field Institute, and the USU-Moab campus — that integrate water-wise conservation, pollinator health and sustainable food systems into the design.

“A lot of times people don’t know. They think it’s either got be turf grass or gravel - those are your two options,” said Jeff Adams, an ecological designer who helped build the garden. “It’s nice to be able to have these high profile things that show all these different functions that look good and say ‘you can do it too.’”

The gardens incorporate permaculture principles, which according to the USU Extension Sustainability website, involve a type of design that looks at the location — and the wider ecological and man-made systems interacting with the location — as connected. Permaculture designs focus on “perennial agricultural ecosystems that emphasize renewability, sustainability, and self-sufficiency,” according to the website.

According to Core, Moab’s recent rains successfully highlighted the Aarchway Inn garden’s functional design to slow, spread, and sink water throughout the space, even during a downpour.

“It worked as it was designed, having a swirling eddy in this pool so that water will slow, spread and sink. [The water] hung out there and soaked deep into the soil,” Core said. “Some wood chips were submerged, but the water was slow and calm enough that all of the wood chips just sat right back down where they came from. They’re [now] acting like a sponge, holding onto that water and time-releasing it to the soil and the plants. I’m so glad to have gotten that [downpour] experiment.”

In addition to its water-wise design, the the Aarchway Inn garden encourages adults and

kids to walk and play throughout the space, members of the BIG group said.

“Being right next to the playground, that’s what makes it so cool,” said Aarchway Inn Assistant General Manager Devin Soli. “The kids will love it because they are always out here chasing lizards and trying to follow butterflies. It’s a really cool area with a lot of whimsy.”

Roslynn Brain, assistant professor at USU–Moab, said she hopes that as visitors walk in the garden they become interested in its permaculture functions and the different species of native and climate appropriate plants.

“Our hope is that as people walk through the garden, it’s so beautiful and so simple, that they will be inspired to do a similar thing on their landscape,” Brain said. “They might say, ‘why are we growing a mono planted yard when we could have a diverse pollinator-attracting, food-producing landscape?’”

Aarchway Inn owner Mike Bynum said that since he acquired the property in 2006 the landscape has completely transformed from a tamarisk jungle to an open space that now incorporates the garden.

“This garden is a nice icing on the cake for a lot of work to make it nice for our guests, friends and people here in Moab,” Bynum said. “Hopefully, this will perhaps inspire a few other business to get involved.”

Bynum encouraged Moab residents to walk the grounds, enjoy, and learn about the new garden space.

For more information about BIG and permaculture design in the Moab community, visit beeinspired.usu.edu.

Read more: [Moab Times-Independent - Completed Bee Inspired Gardens project celebrated at Aarchway Inn](#)

"It takes a community to save a river"

FEBRUARY 11, 2016

BY SHARON SULLIVAN, MOAB SUN NEWS



<https://moabsunnews.com/2016/02/11/it-takes-a-community-to-save-a-river/>

The last major free-flowing river in the Colorado River Basin could be endangered if Utah's neighbor moves forward with an idea to divert the Yampa River's water to Colorado's booming Front Range to feed municipalities, as well as the oil and gas industry.

Author Patrick Tierney teamed up with renowned nature photographer John Fielder to write and photograph a new book, "Colorado's Yampa River: Free Flowing and Wild from the Flat Tops to the Green" to create awareness and prevent the allocation of resources from the Yampa and Green rivers, Tierney said.

The Green River west of Moab receives 65 percent of its peak flow from the Yampa, and any major diversion would affect not only that river, but also Canyonlands and Grand Canyon national parks, Tierney said.

"We're trying to protect the peak flow, which is critical for wildlife, and national parks along its stream," Tierney said. "The reason why we wrote the book is to protect the river."

Tierney will give a multi-media presentation and book signing on Thursday, Feb. 18, at 7 p.m. at Back of Beyond Books, 83 N. Main St.

Tierney and Fielder rafted the entire length of the Yampa River – in sections – to capture in words and images, its beauty and wildness. Tierney writes about the river's human, natural and political history, while Fielder captures images of wildflowers and wildlife, as well as the river's canyons and tributaries. The river descends from its headwaters at 11,500 feet in Colorado's Flat Tops Wilderness to its confluence with the Green River at Dinosaur National Monument near Vernal.

The two men walked with pack llamas for four days where the river was impassable, due to either waterfalls or fallen trees.

Tierney said he fell in love with the Yampa after getting a job as a river ranger at Dinosaur National Monument 40 years ago. Though currently a professor of recreation, parks and tourism management at San Francisco State University, Tierney often rafts the Yampa and Green rivers.

"It's enthralled me for 40 years," Tierney said.

Tierney met Fielder on a Friends of the Yampa river trip where they talked about and agreed to collaborate on the book – a project that Tierney said he has been working on for years.

"I knew he was a conservationist and lover of wild country," Tierney said.

Fielder is known for his work in promoting protection of Colorado's ranches and open space and wildlands – he was awarded the Sierra Club's Ansel Adams Award in 1993, and, in 2011, the Aldo Leopold Foundation Achievement Award.

Tierney has been a licensed whitewater guide, nature guide, teacher, researcher and director of the nonprofit Yampa River Awareness Project. He has kayaked, rafted, hiked and skied in the Yampa River Basin for decades.

A percentage of book sale proceeds will go to the Canyonlands Watershed Council, a local nonprofit organization working to preserve rivers in the region. Those who attend will receive a Yampa map and a chance to win door prizes.

"It takes a community to save a river," Tierney said. "It's a win-win for everybody." Canyonlands Watershed Council was founded by a group of Moab residents in 2009, to promote and protect the health of southeastern Utah's water and watersheds. The group has been key in creating a multi-stakeholder effort around watershed analysis and planning, said director Heila Ershadi.

"This is a great opportunity to learn about the Yampa from someone who knows it and loves it well," Ershadi said. "It will give us a chance to understand what is at stake with the proposal to divert a portion of the Yampa's waters hundreds of miles, to the growing cities along Colorado's Front Range."

Author of new book about the Yampa to speak at Back of Beyond

When: Thursday, Feb. 18, at 7 p.m.

Where: Back of Beyond Books, 83 N. Main St.

Cost: Free

Information: 435-259-5154

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Watershed Resiliency Stewards Program

March 22, 2016

by Jeff Adams

Watershed Resiliency Stewards Program

Proposal by Jeff Adams, Terrasophia LLC

Vision:

Develop and implement a multifaceted Watershed Resiliency Stewards program to inspire, support, and celebrate individual and community action for a healthy, resilient watershed. Through collaborative community efforts, and capitalizing on international recognition as a tourist destination, Moab will be positioned as a hub for drylands permaculture, watershed regeneration, and community resilience. The program will serve as a model for other communities as it engages people in retrofitting public spaces and their home neighborhoods, as well as inviting citizens into the larger watershed for restoration projects. Through this approach, strong linkages between urban, rural, and wild landscapes will be fostered.

Through experiential education and technical assistance, citizens will develop proficiency in “reading the landscape” and skills in applying low-cost, low-tech, shovel ready solutions for becoming active stewards of watershed health and resiliency. Opportunities will be created to engage people in restoring and regenerating the places they work, play, live and visit. Focusing first on understanding ecosystem processes and practices at the landscaping scale will build the eco-literacy of the citizenry, which will then be expanded to the larger watershed.

In 2016, with funding from Climate Solutions University, an inventory of public sites will be conducted. The sites will be prioritized based on their potential for landscape retrofits that benefit water quality and conservation, habitat enhancement, aesthetics, and public enjoyment. Working with the appropriate public agencies and other stakeholders, we will move forward to secure funding to accomplish each project.

Other programming is being developed as funding becomes available.

CWC in 2016

March 23, 2016
by Heila Ershadi

Greetings,

Canyonlands Watershed Council (CWC) is continuing the good work done over the past nine years, and we invite you to take part. CWC is a Grand County based 501(c)(3) not-for-profit organization whose mission emphasizes the protection and wise management of our riparian areas, streams, drinking water, aquifers, and surface water resources. We are fulfilling our mission through outreach and education, policy advocacy, and collaboration with diverse stakeholders on projects that benefit watershed health. Read on for more info about what we've accomplished, and our exciting new projects. If you like what we do, please see the "Membership" section at the end of this letter.

Under the leadership of CWC co-founder and first director, Laurel Hagan, one of CWC's earliest goals was to help form a local and independent watershed partnership to draft and implement a holistic watershed management plan. CWC was instrumental in forming the Moab Area Watershed Partnership (MAWP), and remains an active member today. The MAWP has successfully finished their [watershed management plan](#) and raised over \$220,000 in grant funding for watershed improvement projects!

In 2014, Chris Baird was the Executive Director of CWC. Many in the community recognize the effectiveness of that work, which included the well-attended presentation that assisted the general public in understanding the complexities of the Bishop Public Lands Initiative.

For more than a decade, the Moab-area community had been attempting to fund a comprehensive watershed study to more accurately define how much water can be sustainably appropriated from our aquifers. In 2013, CWC initiated a lobbying effort to renew interest in this study. In 2014, a group of stakeholders signed a funding agreement and the study has commenced.

Education has also played a prominent role in CWC's activities.

- CWC has hosted regular meetings so our members can keep each other apprised of all important issues and discuss them—a practice we are keen to restart. We will meet the third Monday of every month at 5:30 at the Grand County Library. April 18 is our first regularly scheduled meeting.
- CWC designed and installed an educational kiosk along the Mill Creek Parkway informing the public of watershed characteristics and effective management. Other notable accomplishments:

- Provided impetus for the Division of Oil, Gas, and Mining to require fracking disclosures.
- Successfully petitioned for the removal of Federal Oil/Gas leases from critical watershed areas.
- Lobbied against the withdrawal of more water from Mill Creek's riparian environment.
- Successfully advocated for the inclusion of watershed protection in the County's Bishop Public Lands Initiative recommendations.
Now with Chris' election to the Grand County Council, we have hired a new Executive Director to continue the work of CWC.
Our new Executive Director is Heila Ershadi, who many know as a member of the Moab City Council and the mother of Veda and Cyrus. We also welcome aboard Jeff Adams, project manager of [CWC'S Watershed Resiliency Stewards](#) (WRS) program.
Building upon the success of the past nine years, in 2016 we will:
Focus on sound watershed policy
- Work with local government, the MAWP, and other agencies as appropriate to form and adopt holistic policies for drainage, riparian management, infrastructure, and development that protect water quality and quantity. This is the basis of local drought and climate change resilience.
- Advocate for regulations that promote the use of graywater, composting toilets, and rainwater harvesting.
- Create resilience-building demonstration sites through our WRS program that serve as persuasive examples for policy-makers
Hold regular events to learn, collaborate, and organize with CWC members and allies
- Monthly roundtable discussions on topical issues, every third Monday at 5:30pm at the Grand County Library, beginning April 18, 2016.
- Quarterly lectures
- WRS workshops and educational events

- Film screenings, book tours, etc.
Reach out through media
 - [Website](#) and [Facebook](#)
 - Approximately monthly articles/editorials
 - Occasional radio appearances, such as “Free Speech Friday” on KZMU

Becoming a Member

The Canyonlands Watershed Council needs your support to continue to operate! Please consider becoming a supporting member with a tax-deductible donation. We’ve had outstanding success thus far and we would be very grateful to continue on in our mission to preserve and protect the Moab-area watersheds. Donations may be mailed to:

CWC

c/o Heila Ershadi 631 N 500 W Moab, Utah 84532

SUPPORTING MEMBERSHIP LEVELS

— \$20

— \$50

— \$100

— \$350

— \$500

Manns Peak

Mount Waas

Mount Tukuhnikivatz Mount Mellenthin Mount Peale

Donations of any amount are appreciated, and will go entirely toward fulfilling our mission. Your contribution will fund staff time to advocate for pro-watershed policies, coordinate outreach events, and create informative media content. Grant funding often requires matching funds from CWC, and your donations will provide that as well.

For more information, check out our website, or call Heila at 435.355.0280 or email at heila@farcountry.org.

We hope to see you at our first Round-table Discussion at the Grand County Library on Monday, April 18, at 5:30pm. Come learn, share, and collaborate!

Sincerely,

Heila Ershadi and CWC Board Members Dave Erley, John Weisheit, Gerrish Willis, and Bob O’Brien

Watershed Council launches monthly discussions

April 13, 2016

by Moab Sun News, CWC Press Release

Mark Twain purportedly said that in the West, “Whiskey is for drinking, and water is for fighting over.”

But Canyonlands Watershed Council (CWC) believes that water doesn’t have to be a point of contention, and can instead be seen as an opportunity for collaboration and common benefit. In an arid region forecast to have less moisture but more people in the coming years, CWC believes it is especially important for desert communities like Moab to examine how they steward their water resources.

CWC is hosting monthly roundtable discussions for anyone interested or involved in water-related issues to meet one another, keep each other apprised of important news and discuss a broad range of water topics.

Held on the third Monday of every month at 5:30 p.m. in the Grand County Public Library, 257 E. Center St., the first roundtable will take place on April 18.

CWC staff and board members will be speaking about the organization’s work, and members of the Moab Bee Inspired Garden group will discuss what they do. However, the roundtables are not a lecture series, but rather an open conversation about water issues in which anyone is welcome to participate.

CWC is a Grand County-based nonprofit organization whose mission emphasizes the protection and wise management of southeastern Utah’s riparian areas, streams, drinking water, aquifers and surface water resources. The organization aims to accomplish its mission through outreach and education, policy advocacy, and collaboration with diverse stakeholders on projects that benefit watershed health. CWC was founded in 2009 by Dave Erley, John Weisheit and Laurel Hagan; Hagan was also the first director.

Heila Ershadi is CWC’s current executive director, and Jeff Adams was recently hired as project manager of CWC’S new Watershed Resiliency Stewards (WRS) program, which engages people in restoring and regenerating the places they work, play, live and visit.

May 2016 Roundtable Recap

May 17, 2016
by Heila Ershadi

Greetings, everyone.

Thank you all for an interesting and productive Roundtable Discussion with Canyonlands Watershed Council on Monday evening!
A quick-ish recap of the discussions at the last Roundtable, and the action items that came out of them (and please let me know if you have any additions or other edits):

Safe Pesticide/Herbicide Use Campaign

Following up on the discussion started at the April Roundtable, Extension Agent Mike Johnson spoke about common misunderstandings in the public on how to use pesticides and herbicides. He will be sending me some online resources on the subject. Roundtable attendees discussed several potential outreach methods:

1). Circulating a pledge that states that all who sign are committed to using pollinator- and watershed-friendly practices on their own landscapes and the reasons why, and encourage their neighbors, local businesses, and other entities to do the same.

Pesticide Action Network has a model pledge on page 15 of their “Bee the Change” Toolkit. (http://www.panna.org/sites/default/files/BeeToolkit_Reduced_0.pdf). We could modify it to expand the focus from exclusively the health of pollinators to the health of the whole watershed, with the pledge being to use safe and minimal pesticides and herbicides. I would be happy to draft this pledge and submit it to this group and the Bee Inspired Garden group, too. It could be a hard copy pledge and/or one that can circulate on social media.

2). Reaching out to pesticide and herbicide consumers at the point of sale.

This could include a cautionary label for products that are potentially hazardous to pollinators and the watershed, and/or some other educational info like a poster in stores where these chemicals are sold. We discussed reaching out to local store managers/owners in a collaborative spirit to see about possibilities. Let me know if you are interested in reaching out to store managers/owners, particularly if you know them personally or know someone who does.

I'd love to hear some feedback on these two potential modes of outreach! I think both are worth pursuing, and will be a good complement to the workshop series that the Bee Inspired Garden group is hosting in the coming months. Check out their website for the workshop schedule and other useful information regarding pollinators, water-wise landscaping, and much more! <http://beeinspired.usu.edu/>

Presentation by Grand Water and Sewer Service Agency (GWSSA)

Mark Sovine, director of GWSSA, and Gary Wilson, Chairman of the Grand County Special Service Water District, came and spoke about GWSSA and the various groups it encompasses. They also spoke about Ken's Lake and its purposes.

It was initially created for agricultural irrigation, which at the time was so widespread that it was causing dramatic fluctuations in area groundwater levels, as farmers seasonally pumped groundwater for their crops. Today, less of the lake's water goes to agricultural irrigation, and more toward uses such as the golf course and residential landscaping. Unlike in some other places, the irrigation water is metered, and is possibly the most expensive irrigation water in the state.

Ken's Lake recharges the aquifer somewhat, and is a potential source of culinary water if needed, though that's not anticipated any time in the near future. In less wet times than these, all but 3cfs of Mill Creek is diverted into Ken's Lake. The remaining 3cfs is used on a schedule by Moab Irrigation Company. That's why you'll sometimes see Mill Creek go dry during irrigation season. However, Mark reported that Ken's Lake is now at capacity and they will only refill it after an irrigation delivery. So, we can expect Mill Creek flows to remain quite full in the coming months.

For more information about GWSSA, you can check out their website at www.grandwater.org.

I hope everyone has enjoyed the recent rains and the cool, fresh air that has followed it. Thank you all for your dedication to Moab and our waters.

—Heila Ershadi

Executive Director of Canyonlands Watershed Council
435.355.0280

PS: It was unfortunate that the "Weeds but Wonders" talk on edible weeds at the YGP, given by Ros Brain and Emily Stock, happened at the same time as the Roundtable. I've asked Ros and Emily to come give a similar presentation at a future Roundtable. I did a bunch of weeding over the weekend and probably composted a perfectly good salad!

CommuniTea Garden creates peaceful space for residents, visitors Read more: Moab Times-Independent - CommuniTea Garden creates peaceful space for residents visitors

June 09, 2016

by Molly Marcallo, Moab Times-Independent

Using permaculture principles and water-wise design, a group of local citizens are busy transforming a one-tenth-acre lot on the corner of 100 West and Walnut Lane from a patch of dirt to a vibrant community space. Project coordinators hope the space, called the “CommuniTea Garden,” will host future arts and educational events, while maintaining a slice of “old Moab” as planned development transforms the 100 West corridor.

“It seems like Moab is turning into a bunch of three-story buildings with underground parking,” said the site’s property owner, Jay Nethercott. “I remember Moab in the ‘80s when it was a sleepy little town. I wanted to make sure there’s a place in downtown Moab that’s not a building, where people can sit down and collect their wits.”

Nethercott said he was looking for something “decent” to do with his property, so he reached out to local permaculture designers Claire Core and Jeffrey Adams last year.

After taking a full year to observe the property and host idea-building workshops, the group developed the idea for the CommuniTea Garden project to provide a community space and regenerative permaculture garden that may even, eventually, offer sun tea on tap to those who visit.

“We know that there’s going to be lots of development and changes, so [the garden] is helping continue having spaces for both the citizens of Moab and the guests to come to a place that’s healthy and interesting and beautiful,” Core said.

A permaculture system of swales and rocks mimicking a sinuous stream will provide water for the garden’s fruit trees and native plants. Core said storm water will flow through a curb-cut into a feature called a “Zuni bowl,” which will then separate the pollutants from the fresh water before spreading the moisture to the rest of the garden.

“It’s our sediment basin, so any pollutants from the street get trapped right here and don’t flow all the way through the garden,” Core said. “... [The garden] is designed in a way so there’s different paths. Water goes through one section, and once it fills up it will go into these little offshoots or tide pools.”

And as water flows, Core said, so will people.

“A lot of people like to cut through [the space] from the residential neighborhood, going to the school and the parks,” Core said. “So we designed it in a way that would benefit the people who walk through here.”

Adams said passionate volunteers are currently helping make the garden a reality, while learning a bit about permaculture design in the process.

“The garden is being implemented through volunteer efforts, providing an opportunity for community members to learn about the techniques of permaculture and also have a sense of ownership in the project through their direct involvement,” Adams said. “It has been really amazing to have so many people passing by stop to help or express interest and gratitude for this space being created.”

Nethercott said he hopes that in addition to being a “lovely sunny lot” for people to gather, the CommuniTea Garden will continue demonstrating sustainable land management for the community.

“I’m an old man but the rest of you have a strange world coming up with global warming, and a different way of thinking has to come about,” he said. “We’ve got to start somewhere, if everyone that could do something did do something about it we’d be better off.”

Core called the CommuniTea Garden a collaboration between generations, as the project’s coordinators — all of various ages — have all connected over a shared passion for sustainability.

“To have [Nethercott] recognize the work that young people are doing and trust in us to give us this big opportunity has been amazing,” Core said. “And it’s something that we couldn’t have done without him.”

Once the project is completed, Nethercott plans to gift the CommuniTea Garden to a nonprofit group so it will remain a space for the community.

“There wasn’t a profit motive involved,” Nethercott said. “Moab’s been good to me over the years and I wanted to give back.”

Core is encouraging community members to stop by and ask about the garden when they’re in the neighborhood.

“People that live in the neighborhood will stop and wave and ask what’s going on. Even the teenage boys will say ‘whoa that’s cool’ when we say there’s going to be a garden here,” Core said. “We want people to know that this place exists, that it’s in process and people can feel open to talk to us while we’re here.”

For more information about the space or to volunteer, visit the Facebook page: The CommuniTea Garden.

Read more: [Moab Times-Independent - CommuniTea Garden creates peaceful space for residents visitors](#)

Bee Inspired group to host June 22 workshop on plants and pollinators

June 16, 2016

by Molly Marcallo, Moab Times-Independent

The Moab Bee Inspired Gardens (BIG) group will host a free workshop, “Plants and Pollinators” on June 22, emphasizing growing the right plants for the right pollinators in the local community. The event is the second in a series of monthly BIG workshops, which representatives say aim to provide the community with opportunities to learn about sustainable landscaping and gardening practices.

Taught by BIG members, Roslynn Brain, assistant professor in Utah State University’s sustainability department, said the June 22 workshop, the first in a planned series, will highlight a diverse range of topics related to sustainability.

“Our team of people represent all of these great organizations with amazing expertise,” Brain said. “We haven’t yet been able to tap into that full potential, so these workshops gives individuals an opportunity to apply their expertise and allow the community to learn about these topics. The workshops are hands on, but it’s more focused on education using real life examples.”

At the end of the series, BIG member Claire Core says community members will have a greater depth of knowledge in permaculture and sustainable design, which they can apply to their own garden spaces.

“With this series of workshops we’re laying the foundational aspects of things so people can have a broader depth of knowledge,” Core said. “Then at the end of the series they would be able to go to their own home and put in a garden, be able to do it in a really holistic fashion and recognize the many different facets of what they’re putting together.”

BIG member Kara Dohrenwend says the June 22 workshop will focus on native plants and pollinators, and the importance of diversity in a landscape.

“[We’ll be] highlighting the symbiosis of having diverse blooming plants that attract, provide habitat for, and help ensure high diversity of food for pollinators around food crop areas [which] helps ensure good fruit pollination and therefore better food pollination,” said Dohrenwend.

Beginning at 5:30 p.m., the workshop will begin at Wildland Scapes Plant Nursery on 1471 South Mill Creek Drive before the group moves on to Easy Bee Farms in Moab.

Rhonda Gotway Clyde and Jess Oldham will instruct the Easy Bee Farms portion of the workshop. Gotway Clyde said it is important to highlight pollinators’ role in the food system.

“Pollinators are under tremendous stress from habitat loss and the chemical byproducts of human development,” Gotway Clyde said. “Bee Inspired Gardens raises the awareness of pollinator health and demonstrates how all communities can live together more harmoniously.”

For more information about the June 22 workshop contact Gotway Clyde by email at: rhondagotwayclyde@gmail.com. For the full schedule of BIG events, visit the group’s website: beeinspired.usu.edu.

Read more: [Moab Times-Independent - Bee Inspired group to host June 22 workshop on plants and pollinators](#)

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Beginning at 5:30 p.m., the workshop will begin at Wildland Scapes Plant Nursery on 1471 South Mill Creek Drive before the group moves on to Easy Bee Farms in Moab.

Rhonda Gotway Clyde and Jess Oldham will instruct the Easy Bee Farms portion of the workshop. Gotway Clyde said it is important to highlight pollinators’ role in the food system.

“Pollinators are under tremendous stress from habitat loss and the chemical byproducts of human development,” Gotway Clyde said. “Bee Inspired Gardens raises the awareness of pollinator health and demonstrates how all communities can live together more harmoniously.”

For more information about the June 22 workshop contact Gotway Clyde by email at: rhondagotwayclyde@gmail.com. For the full schedule of BIG events, visit the group’s website: beeinspired.usu.edu.

Read more: [Moab Times-Independent - Bee Inspired group to host June 22 workshop on plants and pollinators](#)

CommuniTEA Garden

June 23, 2016

by Lara Gale, Moab Sun News

Until just over a month ago, the trip around the corner of 100 West and onto Walnut Lane took school kids, parents with strollers and anyone out for a stroll past a fenced-in lot covered with rocks and sticker bushes.

Today, thanks to the vision of three community members and the hard work of their volunteer team, the corner is becoming a welcoming space designed to connect the neighborhood to the entire community.

With more than 70 volunteer hours of planning and labor already spent on its creation, the CommuniTea Garden already emits a sense of order and anticipation. Rock-lined flood irrigation channels are rimmed by the beginnings of the food forest its creators envision, with fruit and nut trees, pollinator plants and other plantings with many uses.

"I think we can say we had a fully successful phase one," said Jeff Adams, who owns the permaculture consulting and education firm Terrasophia. "Phase two is really going to be making it more people-friendly."

Adams, along with Utah State University-Moab Sustainable Communities intern Claire Core, and the garden's landowner and benefactor, Jay Nethercott, began planning the garden more than a year ago. In keeping with the permaculture principles guiding its design process, "prolonged and thoughtful observation" is at the heart of the success they're seeing now, Core said.

"This project is all based on the extreme good-heartedness of just a couple of people," she said.

Nethercott was the first and remains the garden's primary donor, she said.

A self-described lifelong conservationist, he and Core struck up a friendly conversation at a Utah Clean Air rally in the winter of 2015, and quickly discovered a common interest in permaculture.

They brought their idea for the garden to USU-Moab Sustainable Communities Extension director Dr. Roslynn Brain, who brought Adams into the conversation, setting up the partnership that became the garden's steering committee.

"We've had lots of support up to this point; a lot of people have spent a lot of hours getting to where we are now," Core said. "Now we want to make a more welcoming space, with places for people to sit and mingle. We'll probably put up signs. We want people to know it's a place they're welcome."

The garden will ultimately serve as a casual meeting place, or somewhere to eat a sandwich at lunch, as well as an example of effective permaculture design in an urban environment, Adams said.

Part of the “phase two” transformation will be a new patio area the group is constructing that will serve as a seating area, using pavement left over from demolition at another construction site.

With a goal of incorporating materials with creativity and intention, the garden’s steering committee is always on the lookout for ways to reuse and upcycle existing material. When Core saw the pile of concrete removed for the installation of new pavement in front of the new Larson & Company accounting firm building, she asked the foreman if she could have the concrete for the garden, and the construction company delivered it happily.

An investment property purchased with a fractiously attained inheritance, its transformation into something that will be of value in perpetuity to the entire community is cleansing, Nethercott said.

“I bought that lot to profit grotesquely from it,” he joked. He is glad he was able to find like-minded partners to carry a positive vision for the lot to fruition, he said, praising Core and Adams and their volunteer team for their organization, creativity and hard work.

Many of the plants for the garden have been donated. And the time, labor and creativity invested in its creation is invaluable, all contributing to the larger goal of serving as a model way to build into the future, Core said.

The hope is that the community will join the garden’s organic growth, adding art and structure. Meanwhile, as a neighboring property owner’s donated irrigation water floods the garden every five days, seeds dormant in the soil are germinating and bringing surprise volunteers into the mix of plantings.

“The wild card this year is going to see what comes up, and see what the deer eat,” Adams said.

June 2016 Roundtable Recap

June 23, 2016
by Heila Ershadi

Canyonlands Watershed Council (CWC) hosted our third Roundtable Discussion at the Grand County Library on Monday, June 20.

The featured speaker this month was Arne Hultquist, the Watershed Coordinator for Grand and San Juan Counties. This position is funded through the Utah Department of Water Quality. Arne is also the leader of the Moab Area Watershed Partnership (MAWP), a collaboration of diverse stakeholders who work to improve and maintain water quality in our area. This is largely accomplished through the funding of specific projects aimed at addressing non-point source water quality issues. Non-point source pollution is diffuse, not from a single source such as an industrial or sewage treatment plant. Some of the projects that the MAWP has assisted in funding include floodplain restoration in Pack Creek, invasive species removal done by both the non-profit organization Rim to Rim Restoration and the Bureau of Land Management (BLM), and a seeding project on Placer Creek in Castle Valley after a fire. The MAWP has helped fund over \$200,000 in projects.

Arne also spends a lot of his time out in the field, monitoring local water quality. Right now, he is working to pinpoint the source or sources of some e coli pollution in the creeks. He is also working with the Department of Water Rights to address potential water quality risks posed by private wells, which may no longer be in use yet not properly decommissioned. In addition, he is closely following the ongoing groundwater study being conducted in our area by the United States Geologic Survey (USGS), which is geared toward providing information that will be highly useful for watershed planning and ensuring that development does not overdraft the water supply nor negatively impact groundwater supply in another part of the valley.

Arne is also working on gathering data that could inform further study of Mill Creek's temperature and flow. This study could inform management of the creek so as to preserve ecosystem functions such as resistance to flood and fire. He anticipates that the data he is gathering would bring the cost of such a study down to a level that the State of Utah could provide the remaining funding.

There was also an interesting discussion about in-stream flow. Current Utah water law dictates that water right's holders must use their water for "beneficial use". The definition of "beneficial use" is fairly narrow, and in Utah does not include things like wildlife habitat or hazard mitigation of flood and fire in riparian areas. The Roundtable attendees discussed the long road to changing beneficial use, as well as what could be done to achieve those goals but within the bounds of the current system.

CWC members also gave updates on projects they are doing, some of which have

taken shape due to the Roundtables. Jeff Adams, CWC's Program Director, informed the group that the local health department has the green light to do two gray water pilot projects. Jeff also told the group about his presentation to the Consortium of On-site Wastewater Professionals (COWP) about graywater. The COWP is currently re-writing their code to be more flexible with graywater usage. Also, Jeff presented recently to the Development Review Team—a group comprised of Grand County and Moab City staff who are professionally involved with planning and development—on the topic of Green Infrastructure. Green Infrastructure is a form of stormwater management that focuses on making stormwater useful, and can work in tandem with conventional infrastructure. The presentation was well received, and Jeff will review existing codes and make recommendations for where GI can fit into existing code and where new code may be warranted.

Sara Melnicoff gave an update on the pilot project she is exploring with the City of Moab and Mike Johnson of the University of Utah Extension. Right now, nothing much is growing, so they are just looking at options.

We also got an update from Jeff and Claire Core about the new CommuniTea Garden on 100 West and Williams Way. They are planting fruit trees and pollinator plants, and the property owner also has an irrigation share that is being used for the garden. There was an article on What a great addition to Moab!

Thanks to everyone who turns out for the Roundtables, and puts our discussions into action! You all are amazing!

Do more with less water

June 30, 2016

by Heila Ershadi, Moab Sun News Guest Column

Imagine a new way of thinking about water stewardship in our high desert community. Or rather, imagine new technologies applied with values from an older time: never waste anything; do more with less; make the desert bloom.

Recently, a friend stopped by my home to see the new landscaping, designed by a local permaculture consultant. My friend has lived in Moab since the roads were mostly dirt, and you could hang out on Lion's Back in privacy. When she saw my new gardens, she remarked, "You've done it like the old-timers did!"

The land around my home has been contoured so that rainfall from the roof is channeled through the downspouts into the gardens. The gardens are full of plants selected both for their loveliness and their ability to survive the Moab climate, and also apricot, apple and cherry trees.

It's not exactly classic Old Moab landscaping, but it does share the features of orchard goodies, a healthy appreciation of mulch and the use of household roof water for irrigation.

A lot of homes in the area once used graywater. Graywater is the relatively clean water from bathroom sinks, showers and washing machines that can be used for irrigation, reducing the need to use culinary water. Graywater is technically legal in Utah, but is heavily regulated. Our local health department has been granted approval for a pilot graywater program that would assess the potential to allow more flexibility of design, a great step forward for would-be graywater users.

Some older homes in Moab have graywater systems that predate the current laws and are grandfathered in. For example, a large family home in Spanish Valley built in the early 1960s uses graywater from the washing machine in the months when there is no danger of freezing.

"We simply move the washer drain hose ... to a graywater pipe installed in the wall behind the washer that goes directly out to a large garden bed in the yard," explained a resident. "Needless to say, we have to be careful what laundry products we use, but washers use a whole bunch of water – once! We really love this efficient system."

Catching stormwater in rain barrels became legal in Utah in 2010, and you can store up to 200 gallons of rainwater at a residence without a permit, and up to 2,500 with a permit.

A half inch of rain on a 1,000-square-foot roof produces approximately 280 gallons of water, says the Utah State University website. In Moab, an average-sized roof could

capture around 5,000 gallons of storm water annually. Add that to the roughly 50 gallons per day that the average household of four could save by using graywater in the warmer months, and you have around 14,000 gallons yearly in potential water savings!

Rain barrels and graywater systems are small-scale examples of individual actions that can add up to huge benefits for our community and watershed. A larger-scale example is a wastewater treatment plant that discharges its treated water either into a constructed wetlands or to replenish a natural wetlands habitat.

The typical “gray” infrastructure treats water like a waste product to get rid of; green infrastructure treats it as a valuable resource with environmental, economic and social benefits.

Take the example of the wastewater treatment plant that replenishes wetlands. Not only can this create better habitat for wildlife and the people who enjoy seeing them, it can lessen the risks from flood and fire to the ecosystem and the people who live and work nearby.

Another example is curb cuts, strategically placed openings in roadside curbs that channel stormwater into planted basins, naturally filtering out pollutants while growing trees and other plants that look beautiful, shade pedestrians, and reduce the excess heat created by large paved areas. Never waste anything. Do more with less. Make the desert bloom.

As the multiple long-term benefits of green infrastructure become more understood, agencies such as the Federal Emergency Management Agency (FEMA) and the Environmental Protection Agency (EPA) are prioritizing green infrastructure and offering grants to offset those higher initial costs.

Cities all over America are putting green infrastructure into policy and practice.

Tucson passed a Green Streets policy in 2013, requiring that green infrastructure features be incorporated into new road construction or reconstruction whenever possible. Also in 2013, Seattle set the goal to manage 700 million gallons of stormwater annually with green infrastructure by 2025, calling green infrastructure “a critical aspect of a sustainable drainage system.” Los Angeles, San Francisco, Portland and Cincinnati are a few other cities embracing green infrastructure.

Imagine what we could do in Moab! And please, share your ideas. Canyonlands Watershed Council holds monthly roundtable discussions every third Monday at 5:30 p.m. at the Grand County Public Library, 257 E. Center St. Come to learn, share and collaborate on community-driven initiatives for watershed health.

Moab Bee Inspired Garden calendar

June 30, 2016
by Utah State University Extension

<http://beeinspired.usu.edu/calendar/>

Watershed Stewards Program – Upcoming Events for Fall 2016

September 23, 2016
by Jeff Adams

Please join Canyonlands Watershed Council for our fall **Education and Action workshops!** We are excited to be collaborating with a range of community partners on the following events. All events are free and open to everyone.

1) Saturday 10/22, (10am – 2pm) **Site Assessments for Creating Healthy Landscapes,**

part of the Bee Inspired Gardens education series. Meets at the Forest Service Building on 100N (next to post office)

During this interactive workshop, we will introduce site assessment processes. Considerations will cover previous topics including: on-site water management, plant selection, pollinator needs and habitat, and site access.

For more information on Bee Inspired Gardens, visit: <http://beeinspired.usu.edu/>

Greywater system pilot projects now underway in Moab

November 14, 2016

by Molly Marcello, The Times Independent

After a years-long collaboration between state regulators, permaculture designers, and homeowners, the first gravity-fed graywater system in Utah was recently permitted at the Moab home of Dr. Roslynn Brain, assistant professor in sustainability at Utah State University-Moab. Those close to the project said the permit opens the door for other graywater systems throughout the state, and Utah code is currently being revised to accommodate them.

Read more: [Moab Times-Independent - Graywater system pilot projects now underway in Moab](#)

Green Infrastructure Tour Recap

November 14, 2016
by Jeff Adams



CWC Executive Director Jeff Adams explains the functions and benefits of curb cuts and green infrastructure to workshop participants

Be Water Wise

November 14, 2016

by Sharon Sullivan, Moab Sun News

Would you like to do more with less – watering, that is? If so, you might want to attend a free workshop that offers demonstrations on how to harvest and conserve water.

“Water in the Drylands” – one of a series of Moab Bee Inspired Gardens workshops – will take place on Wednesday, Aug. 31, from 6 to 8 p.m. at Utah State University-Moab's pergola, 125 W. 200 South.

Topics include green infrastructure and stormwater management; techniques to maximize water efficiency in the drylands; and the use and utility of supplemental drip irrigation.

[Read the entire article here](#)

Year End Fundraising Campaign

November 14, 2016

by Jeff Adams

YES! Canyonlands Watershed Council is a charitable organization.

- PayPal - [HERE](#)
 - Venmo - [HERE](#)
 - Our EIN is: 87-0637713
-

Greetings!

From watchdog to work horse, Canyonlands Watershed Council (CWC) depends on your support and donations to carry out our mission. **Please consider contributing to our year end campaign to raise \$25,000 for watershed health in southeastern Utah.**

CWC is a Grand County, UT based 501(c)(3) not-for-profit organization whose mission is ***to promote and protect the health of southeastern Utah water and watersheds.***

We accomplish our mission through a range of activities including public outreach and education, on-the-ground watershed assessments, direct impact projects, multi-stakeholder collaborations, engaging in public processes, and developing resources that help to better understand our waters and watersheds.

CWC has a proven track record of success in promoting and protecting the health of our watersheds. From our role in the formation of the multi-stakeholder Moab Area Watershed Partnership to generating support and funding for the in-progress US Geological Survey's Spanish Valley groundwater management study, CWC is committed to working to enhance the health of southeast Utah's watersheds and the people who live and visit them. Together with your support, we will continue to succeed in achieving our vision of healthy watersheds and vibrant communities throughout our region.

Moab and the Spanish Valley are changing as tourism expands and land use shifts from agriculture to development. These changes have implications on our groundwater and surface water resources, as well as the quality of life for valley residents and the experience of visitors. The groundwater study is analyzing our available water supply and presents an important opportunity to discuss and decide as a community how we want to manage this vital resource. As development in the valley continues it is critical that the inherent impacts on stormwater quality and quantity be mitigated based on the best practices available to create multiple benefits and enhance ecosystem services we all depend upon.

With long term prosperity and resiliency in mind, CWC is committed to continuing an active role in public process to help ensure sound policies are developed that balance social, economic, and environmental values while protecting the water resources essential to our well-being and prosperity.

Our current programs are focused on two key areas: Urban Greening and Watershed Regeneration. Through collaborative projects and community engagement, we will achieve immediate on-the-ground benefits to compliment our work in policy and planning. Through this multi-pronged approach we seek to ensure the health of our waters and watershed are a central tenant in daily living and long term land management decisions.

Our Urban Greening efforts focus on enhancing the beauty and functionality of our developed areas to achieve multiple benefits, including protecting water quality, conserving water, creating pollinator habitat and more. Our Watershed Regeneration efforts focus on protecting and restoring our springs, wetlands, and riparian ecosystems and mitigating the impacts of increased recreational use. Part of our strategy is to develop eco-tourism and collaborative efforts with the businesses and organizations that use and benefit from our public lands.

We are working with our public officials on green stormwater infrastructure and greywater policies and pilot projects to expand our toolbox of best practices for effectively and wisely stewarding our water resources. This year, we have worked at the county and state level on greywater reuse policy and provided technical assistance in creating the first permitted residential greywater system in southeast Utah.

In collaboration with community partners such as Grand County Hospice and Bee Inspired Gardens, we are creating opportunities for community and visitors to be involved in directly enhancing our urban environment and health of our watersheds. Please visit our website to learn more about upcoming events and ways to become involved.

Looking ahead, 2017 is shaping up to be a big year. From policy and planning to on-the-ground projects, CWC will be a leading agent for healthy watersheds. We are excited to continue providing technical assistance and helping secure funding to develop urban greening projects around the valley. We will also be inventorying our public lands to identify and prioritize project sites for protecting our healthy ecosystems and restoring our degraded areas.

We cannot do this important work without your generous donations. Please consider becoming a member of Canyonlands Watershed Council and contributing our year end campaign to raise \$25,000 to promote and protect the health of our community and watersheds.

Thank you,

Jeff Adams and the CWC Board

If you have any questions or would like to become a supporter of our work, please contact Jeff via email ([jeff \(at\) farcountry.org](mailto:jeff@farcountry.org)) or cell phone 415-306-6618

Membership Levels:

Manns Peak - \$20

Mount Wass - \$50

Mount Tukuhnikivatz - \$100

Mount Mellenthin - \$350

Mount Peale - \$500

Other: \$_____

Document archive to help local citizens understand the complexities of watershed stewardship

November 28, 2016
by John Weisheit

WEBSITES

[Water Sense](#). EPA.

DOCUMENTS

[1979 - Colorado River Basin Water Problems and How to Reduce Their Impact](#). Government Accountability Office.

[1998 - National Drought Policy Act](#)

[2000 - Preparing for Drought in the 21st Century](#); ([Appendices](#)). National Drought Policy Commission.

[2001 - Drinking Water Protection Plan for Moab Wells](#)

[2001 - Skakel Springs Drinking Water Source Protection Plan](#)

[2002 - Updated Drinking Water Protection Plan for Moab Wells](#)

[2005 - Grand Challenges for Disaster Reduction \(emphasis on drought and floods\)](#). National Science and Technology Council.

[2006 - The Moab Mill Project](#). A technical report toward reclaiming uranium mill tailings along the Colorado River in Grand County, Utah. Living Rivers.

[2006 - Managing Drought and Water Scarcity in Vulnerable Environments](#). Geological Society of America.

[2008 - Lion's Back Hydrogeology Memo](#). EPA.

[2008 - A Look at Johnson's-Up-On-Top](#)

[2009 - Moab Sustainability Resolution](#)

[2009 - 35-years after the National Water Commission Report of 1973](#). Congressional Research Service.

[2009 - The End of Abundance: How Water Bureaucrats Created and Destroyed the Southern California Oasis](#). Zetland.

[2009 - Prosperity Without Growth Report](#). Jackson.

[2009 - Grand County Water Conservation and Management Plan](#). GWSSA.

[2010- Forest and Water Climate Adaption: A case Study of Moab and Castle Valley, Utah](#). CWC.

[2011 - Moab City Water Conservation Plan Update](#)

[2012 -Crossroads Utah](#). URC.

[2013 - Hydrologic Assessment of the Surface Water and Groundwater Resources of Castle Valley, Utah: Part 1: Hydrologic and Environmental Analysis \(HESA\) and Preliminary Water Budget](#)

[2014 - Moab City Water System Data](#)

[2014 - A Comprehensive Watershed Management Plan for the Moab Area](#). MAWP.

[2014 - Living with Water Scarcity; \(References\)](#). Zetland.

[2015- A Performance Audit of Projections of Utah's Water Needs](#). Utah legislative audit.

[2016 - Grand County Water Master Plan](#). GWSSA.

GRAPHICS

[Moab Area Watershed Graphic](#). MAWP & CWC.

CWC receives grant from New Belgium Brewing for Urban Greening

January 05, 2017

by Jeff Adams

Canyonlands Watershed Council has received a grant from New Belgium Brewing to support Urban Greening projects as part of our Watershed Stewards Program. Thank you New Belgium Brewing!

Urban Greening positively impacts the community, economy, and watershed by achieving multiple benefits through cost-effective, shovel ready solutions. Benefits include water conservation, stormwater management, neighborhood beautification, mitigation of urban heat island effects, and enhanced pollinator habitat.

We will be collaborating with public agencies and non-profit organizations on landscaping retrofits for resilience and will be hosting community education opportunities throughout the year.

Please check back for workshop opportunities and project updates.

Contact Jeff for more information or to be added to our email list to receive updates:
jeff@farcountry.org

The development of the County Resource Management Plan (CRMP) for Grand County, Utah

February 08, 2017

by John Weisheit

THE MANAGEMENT PLAN

- [Official website of the County Resource Management Plan for Grand County, Utah.](#)
-
- [Boiler plate language for planners, maps & raw data.](#) Utah Broadband Outreach.

CONTACTS

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shannon@rural-community.com
mhansen@rural-community.com

ADDITIONAL INFORMATION

[Grand County Resource Assessment.](#) USDA.

Watershed Stewardship and Permaculture in Castle Valley

February 13, 2017

by Jeff Adams

Watershed Stewardship and Permaculture in Castle Valley

A free workshop by Canyonlands Watershed Council with Jeff Adams and Jeremy Lynch, in collaboration with Grand County Library

Saturday, February 25th, 2017 10:00am to 12:30pm at the Castle Valley Library

During this interactive workshop you will discover the fundamentals of permaculture design, learn techniques for watershed stewardship, and participate in assessment and visioning sessions for the Castle Valley Town buildings' landscaped areas. Examples of local and regional projects will highlight shovel ready solutions for gully stabilization and erosion control, water harvesting landscape features, building healthy soils, and greywater systems. Building on the classroom presentation, participants will transition outdoors to engage in the art of "reading the landscape" and discuss site-specific opportunities to enhance the beauty, function, and resilience of the site.

Funding for this workshop provided by NewBelgium Brewery and private donors.

Lion's Back Development Project: Public Document Archive

February 23, 2017

by John Weisheit

LATEST NEWS

-
- July , 2020 - [Lionsback Resort Project Begins On Sand Flats Road](#). McMurdo, *Times Independent*.
- May 15, 2020 - [Supreme Court rejects city's effort to avoid public involvement in contentious Lionsback development](#). Doug McMurdo of *Times-Independent*
- May 15, 2020 - [Supreme Court declines Lionsback case](#). Maggie McQuire of *Moab Sun News*
- October 25, 2019 - [Appeals court panel hears Lions Back arguments. Attorney: lower court decision a 'travesty of justice'](#). McMurdo, *Times Independent*.
- July 5, 2019 - [Court of Appeals to Hear Lions Back Case In Moab. McMurdo](#) , *Times Independent*.
- [Click here](#) to read the announcement from the Utah Court of Appeals
- The hearing is on October 18, 2019 and begins at 10:00 A.M. at the Grand County Courthouse.

CITIZEN LAWSUIT: Filed March 30, 2017

This legal challenge about the proposed development project at Lion's Back is at the fourth stage of review concerning procedures regarding the Municipal Land Use Code:

- 1) The City of Moab Council should have conducted a public review process, because the proposed development was revised in a major way; the impact of this project doubled.
- 2) This first complaint by citizens should have been heard by the Appeal Authority for the City of Moab. This did not occur.
- 3) After the complaint to the Appeal Authority was bypassed, the complaint was argued in Utah's 7th District Court.
- 4) The District Court denied the appeal concerning due process with citizens and now the citizens will petition the Utah Appellate Court to review the case with fresh eyes.

- [Appeal Authority Application](#). City of Moab.
- [Brief: Utah Seventh District Court](#)
- [Brief: Utah Appellate Court](#)

Intervenors filed an appeal with Utah Court of Appeals October 2018 to February 2019

- News on July 5, 2019 - [Click here](#) to read this story by Doug McMurdo in the *Moab Times-Independent*
- [Appellants Brief](#) (10/17/18)
- [Letter to Utah Court of Appeals Transmitting Response Brief](#) (12/17/18)
- [Appellants Brief Exhibits](#)
- [Brief of Appellee](#) (12/17/18)
- [Response Brief of Defendants & Appellees](#) (12/17/18)
- [Appeal Reply to City](#) (02/15/19)
- [Appeal Reply to Intervenors](#) (02/15/19)

WATER RIGHTS

NOTE: To view these water right web pages, make sure the preferences in your browser will accept "pop-ups"

- [Map Search of Water Rights via Google Earth](#)
- SITLA's Water Right at Lion's Back # [05-2190](#)
- Grand County Cemetery District #[05-3576](#)
- City of Moab at Skakel Spring # [05-2105](#)

SITLA

- Moab Sun News: [SITLA Board Pondered Hardball Tactics in Negotiations with Moab City](#)
- [Agenda of January 19, 2017 Meeting](#) and...
- [The audio recording of Lion's Back agenda items](#) (Beginning at 50 minutes and 110 minutes)

CITY OF MOAB

City Council Meetings

- [February 14, 2017 - Special Meeting on Lion's Back](#)
- [February 28, 2017 - Lion's Back discussion and vote](#)

APPROVED AGREEMENTS

- [Source Water Protection Plan: Administration Flow Chart](#)
- [Fully Executed Development Phasing Agreement](#)
- [Development and Phasing Agreement](#). July, 2009.
- [Council Approved Lion's Back Drinking Water Source Protection Plan](#). January, 2010.

- [Pre-Annexation Agreement](#). October, 2008.

CONCEPT & PRELIMINARY MASTER PLANNED DEVELOPMENT (MPD) IN 2008

- [Concept MPD Submittal](#)
- [Preliminary MPD](#)

Supplemental Docs To Preliminary MPD

- [Raptor Assessment](#)
- [Traffic Impact Study](#). 2006.
- [Preliminary Drainage Report](#)
- [Preliminary Design Guidelines](#)
- [Preliminary Geologic & Geotechnical Site Assessment](#)
- [Phase One Preliminary Environmental Assessment & Topo Assessment](#)

Maps

- [Dry Utilities Master](#)
- [Grading Master](#)
- [Prelim Drainage Basins Master](#)
- [Prelim Street Master](#)
- [Prelim Street Section](#)
- [Prelim Water & Sanitary Sewer Master](#)
- [Site Inventory](#)
- [Site Photo](#)
- [Slope Analysis](#)

COURT CASE

- [Appeal Brief by Appellant](#)
- [Appeal Reply Brief from City](#)
- [Court Opinion](#)

BOARD OF ADJUSTMENTS

- [Appeal to City of Moab over approval of Lionsback Resort](#)
- 2008 - [August 20 hearing before Board of Adjustments](#)
- 2008 - [August 28 hearing before Board of Adjustments](#)

EMAILS FROM CONSTITUENTS

- [Google Groups](#)
- [Lion's Back Emails](#)

COMMENTS ADDITIONAL FROM PUBLIC

- [Summary of Concerns About The Lions Back Development](#). CWC.
- [Water Issues](#). CWC.

REVELENT CODE

- [MCC17.32 Sensitive Area Resort Zone](#)
- [MCC17.65 Master Planned Developments](#)

ORDINANCES

- [2010 - Lions Back Source Water Plan Approval](#)

SAND FLATS TRAFFIC 2014 to 2015

- [Traffic Monthly 2014 to 2015](#)
- [Traffic Weekly 2014 to 2015](#)
- [Traffic Daily 2014 to 2015](#)

UTILITIES DESIGN PLANS

- [Utility Reimbursement Agreement Proposed](#). November. 2015.
- [Base Map Water Main](#)
- [Base Map Sewer Main](#)
- [Utility Trench Conceptual Plan](#)

ZONING STATUS AGREEMENT DOCUMENTS

-
- [Zoning Status Agreement Outstanding Items Proposed](#). November, 2016.
- [Letter From McAnany to Amended Application Minor or Major Change](#).
September, 2016.
- [Zoning Status Agreement Proposed](#). December, 2016.
- [Presentation by SITLA to Council](#). December, 2016.
- [ZSA City Resolution #14](#) . February, 2017

OTHER REFERENCES

- [Moab City General Plan Update](#) (March, 2017 Draft)
 - [INDEX: Lion's Back Digital Document Library](#)
 - [Executive Summary January, 2017](#). SITLA.
 - [Sand Flats Road: Grand County Resolution Contemplating Transfer to City](#)
 - [Review of Drinking Water Source Protection Plan, 2008](#). EPA.
 - [Final Concept Package of Lion's Back](#)
 - [Lion's Back Presentation Overview for Council](#). February, 2017.
 - [2008 - A Look at Johnson's Up-On-Top](#). Grand County Citizens for Clean Water.
 - [Preliminary Design Guidelines](#)
 - [Attachments for preliminary design](#)
 - [Skakel Springs Drinking Water Source Protection Plan](#)
 - [Map: Lions Back and Skakel Spring Protection Zone](#)
 - [Map: City Annexation of Lions Back](#)
 - [Photos of Lion's Back](#)
 - [Drinking water source protection plan](#)
 - [SITLA lease agreement for Lion's Back](#)
 - [News, Opinion and Court Decree](#)
 - [News & Opinion from 2014 to 2017](#)
-

Upcoming Events

April 06, 2017

by Jeff Adams

We have teamed up with some great community partners to transform two gardens during April and offer these events, please come join us!

1) [Grand County Middle School Pollinator Garden Open House](#)

When: Friday 4/21 - 5 to 7pm

Where: At the Grand County Middle School's central courtyard, 439 S 100 E, Moab

The 8th Grade Environmental Science class has designed and installed an educational pollinator garden at their school's central courtyard and would like to show the community what they've done. Come to the middle school and learn about their project, see the new garden and enjoy light refreshments. This project is a collaboration with the Middle School, the [Bee Inspired Gardens Initiative](#), and [USU Extension Sustainability](#)

2) [Hospice Garden Planting Day](#)

When: **Earth Day** - Saturday 4/22 - 9 to Noon

Where: Moab Regional Hospital, 450 Williams Way, near the front entrance

Do you want to give back to your community on Earth Day? Join Grand County Hospice, Bee Inspired Gardens, and Canyonlands Watershed Council and spend some time outside to honor patients of Grand County Hospice. Not only will the garden become a beautiful space, but it will also feature responsible irrigation systems and diverse pollinator attracting and native plant species. This is a perfect way to spend a beautiful spring Saturday morning! Refreshments and all necessary equipment will be provided.

3) Moonflower 5% Day – Tuesday May 9th.

Shop at Moonflower and support the Canyonlands Watershed Council's on-going work to protect and enhance the health of our watersheds. This year we are leading several Urban Greening projects with community education opportunities and working on public planning and policy to build resiliency in our watershed and community.

San Juan Spanish Valley Special Service District

April 21, 2017
by John Weisheit

SAN JUAN SPANISH VALLEY SPECIAL SERVICE DISTRICT

WEBSITE

- www.spanishvalleywater.org

NEWS

- News of 11/16/17: [San Juan County Planning for up to 6,000 People in Spanish Valley](#). Moab Sun News.

2019 DOCUMENTS

- [2020 - Annual Monitoring Report](#). SJSVSSD.
- [2019 - Groundwater Monitoring Report for Spanish Valley, Utah](#). SJSVSSD.
- [2017 to 2019 - Well Data near Ken's Lake](#). Cascade.
- [2019 - Pump Log for SJSVSSD well](#). Beaman.

2018 DOCUMENTS

- [Hydrologic and Hydrogeologic Assessment of the Surface Water and Groundwater Resources Affecting the Moab City Springs and Wells, Moab, Utah: Phase 1: Hydrologic and Environmental System Analysis \(HESA\) and Conceptual Models](#). Kolm & Heijde.
- [Request and Commitment for Water and Sewer Services](#). San Juan County Commission.

2017 DOCUMENTS (includes request for extension)

- [Web site for Water Right 09-2349](#)
- [Web site for scanned documents Water Right 09-2349](#)
- November 17, 2017 - [Well Drilling Agreement](#)
- November 7, 2017 - [Response to SJSVSSD Groundwater Management Plan of October 2017](#)
- November 7, 2017 - [Response to SJSVSSD Groundwater Management Plan of June 2017](#)
- November 2, 2017 - [Public notice of time extension for beneficial use](#)
- November, 2017 - [Revised 40-year plan](#)
- October, 2017 - [40-year plan](#)

- October 5, 2017 - [Priority date of water right is now 9/27/17](#)
- September 15, 2017 - [Notice of permanently lapsed application and loss of original priority date](#)
- June 13, 2017 - [Submission of Groundwater Monitoring Plan](#)
- [Protest of Living Rivers & Colorado Riverkeeper](#)
- [Protest of Canyonlands Watershed Council](#)
- [City of Moab Letter of Concern](#)
- [GWSSA Letter of Concern](#)

SJSVSSD meeting of April 20, 2017

- [Spanish Valley Public Project Summary](#). SJSVSSD.
- [Spanish Valley Water & Sewer Master Plan Presentation](#). SJSVSSD.

PROTEST PERIOD OF SAN JUAN VALLEY SPECIAL SERVICE DISTRICT WATER RIGHT (2011)

- [Order of the State Engineer](#) (August 8, 2013)
 - [Web site for Water Right 09-2349](#)
 - [Web site for scanned documents Water Right 09-2349](#)
 - [2011- Water Right Change Application](#) (Water Right 09-2349)
 - [2011 - SJSVSSD letter to Nature Conservancy](#)
 - [Statement of a Water Right Segregation](#)
 - [Historic Property Evaluation](#)
 - [Corrections to the application](#)
 - Map: [Proposed wells and point of diversion](#)
 - Protest: [Living Rivers](#)
 - Protest: [Department of Interior](#)
 - Protest: [Moab City](#) and [here](#)
 - Protest: [Canyonlands Watershed Council](#)
 - Protest: [Grand Water & Sewer Service District](#)
 - Protest: [Nature Conservancy](#)
 - Answer to Protest: [SJSVSSD](#)
-

Archive of watershed news since 1896 from the Times-Independent

June 06, 2017

by Jeremy Lnych

The following tables have hyperlinks to articles from Moab's local newspaper called [*The Times-Independent*](#), which are archived at [Utah Digital Newspapers](#).

- [List of articles using search engine for the word "Creek"](#)
 - [List of articles using search engine for the word "Flood"](#)
 - [List of articles using search engine for the phrase "Moab Irrigation Company"](#)
 - [List of articles using search engine for the word "Rain"](#)
 - [List of articles using search engine for the word "Water"](#)
-

The Final Green and Colorado Comprehensive Management Plan Development and Mineral Leasing Plan

MAY 09, 2018

BY JOHN WEISHEIT



Foreground is Gray Canyon and background is Desolation Canyon
Utah's Resource Development Coordinating Committee (RDCC) of the Public
Lands Policy Coordination Office

- [Projects](#) (website & project search engine)

FINAL DOCUMENTS: RELEASED ON JANUARY 6, 2020

- [Public Postcard](#)
- [Record of Decision for Colorado River](#)
- [Record of Decision for Green & Colorado Rivers](#)

- [Comprehensive Management Plan and ROD for Colorado River](#)
- [Mineral Leasing Plan and ROD for Green & Colorado Rivers](#)
- [Comprehensive Management Plan for Colorado River](#)
- [Mineral Leasing Plan for Green & Colorado Rivers](#)

Green and Colorado Rivers Comprehensive Management Plans & Mineral Leasing Plan

- [Website for Green and Colorado CMP and MLP Project](#)

The Utah Division of Forestry, Fire and State Lands (FFSL) is developing the first comprehensive management plans (CMPs) for state-owned, sovereign land sections of the Colorado and Green Rivers, and updating the existing Mineral Leasing Plan (MLP) for these sovereign lands in Uintah, Grand, Emery, Wayne, Garfield, Kane, and San Juan Counties. Utah Admin Code R652-2-100 authorizes FFSL to prescribe land management objectives for sovereign lands. The beds of navigable waters within the state, including portions of the Green and Colorado River, are owned by the state but held in trust for the public. FFSL is required to ensure that all uses on, beneath, or above the bed of the Green and Colorado Rivers are regulated to ensure the protection of navigation, fish and wildlife habitat, aquatic beauty, public recreation and water quality. The development of a comprehensive management plan will help to ensure that FFSL maintains clear and consistent guidance regarding the management of the Green and Colorado River resources. The development of a specific minerals resource management plan will allow FFSL to implement detailed guidelines on resource development on sovereign lands.

Public Involvement

We welcome your input throughout the planning process. During the months of March and April 2018, FFSL will present information regarding the CMP and MLP process and seek public participation at open house meetings in each county that contains state-owned sovereign land sections of the rivers. Please attend the open house most convenient for you. If you cannot attend a meeting in person, you may also make comments via the project website. Please visit the project website for more details.

Public comments for the Draft CMP are due on July 19, 2019

Comments can be submitted at the public meetings, online at the project website, or via e-mail to the addresses below:

Project Website

Gretchen Semerad
gsemerad@swca.com
801-322-4307

Laura Vernon
lauravernon@utah.gov
801-538-5530

It is anticipated that the final CMPs and MLP and Decision Document will be completed by December 2019.

- [Press Release](#). Utah Department of Natural Resources.
 - [Draft CMP for Green and Colorado Rivers](#)
 - [Draft CRMP for the Colorado River](#)
 - [Draft for the Green River](#)
-

SITLA's Housing Plan for USU in Moab City

NOVEMBER 09, 2018



BY JOHN WEISHEIT
The Proposed USU Campus

YES! Canyonlands Watershed Council is a charitable organization.

- PayPal - [HERE](#)
- Venmo - [HERE](#)
- Our EIN is: 87-0637713

This is a real estate development project for housing by the State of Utah, School and Institutional Trust Lands Administration (SITLA) for a Utah State University (USU) Campus in Moab City ([website](#)).

SITLA has master planned a mixed-use, multi-family, and student housing project surrounding the future Moab Utah State University campus located on Highway 191 at the intersection of Mill Creek Drive, in Moab, Utah. The Project encompasses 320+/- acres and has been jointly planned by the Trust and USU-Moab. The Trust is soliciting statements of interest and qualifications for development and/or purchase of the Project. The purpose of this request is to allow the Trust to ascertain the experience,

compensation structure and resource commitment of developers interested in working on this project with the Trust.

NEWS

- 2017, November - [New Moab Campus Will Be Built](#). USU.
- 2018, October - [SITLA Continues Search For USU Area Developer](#). Moab Sun News.

DOCUMENT ARCHIVE

- [2012 - USU & SITLA Pre-annexation Agreement](#)
- [2012 - Future Moab Campus Master Plan](#). USU.
- [2015 - Moab Campus Feasibility Study](#). USU.
- [2018 - Housing Types](#). SITLA.
- [2018 - Mill Creek Drive West Extension Road Construction](#). Moab City.
- [2018 - Mill Creek Drive Design Boards](#). Moab City.
- [2018 - Mill Creek Drive Final Plat](#). Moab City.
- [2018 - Request For Qualifications Statement of Interest USU Campus](#). SITLA.

MOAB CITY DOCUMENTS

- [2017 - Moab City General Plan](#) (Final)
 - [2017 - Work Plan for 2018 and 2019](#)
-

Community Impact Board and Utah Counties Hope to Use Public Funds to Subsidize Infrastructure for Corporate Operations

DECEMBER 04, 2018
BY JOHN WEISHEIT

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 - Venmo - [HERE](#)
 - Our EIN is: 87-0637713
-

COMMUNITY IMPACT BOARD WEBSITE (Utah Workforce Services: Housing and Community Development)

- [Agendas, Minutes & Audio](#)

Additional Information

- [Click here](#) to read this blog by Bill Rau
- [Click here](#) to read this blog by John Weisheit

2015, August: Utah Groups Join Oakland in Opposing Coal Export Plan

- [Click here](#) to read San Francisco Baykeeper files lawsuit against proposed Oakland Coal Terminal
- [Click here](#) to read the press release from the NGO coalition
- [Click here](#) to read the letter from the NGO coalition to Utah's Community Impact Board (CIB)
- [Click here](#) to read the story in the East Bay Express by Darwin BondGraham
- [Click here](#) to read the letter from EarthJustice
- [Click here](#) to read why the residents of Oakland are opposed to coal exports

GRAMA Requests

- [Click here](#) to read Jeff Holt's email to CIB.
- [Click here](#) to read letter from BMO Capital Markets to county commissioners

October 22, 2015: Citizens of eastern Utah submit letter to Utah's Attorney General on use of CIB funds for proposed coal transport facility in Oakland, CA

The Board of Utah's Community Impact Fund (mineral lease money) is considering the approval of a loan of \$53 million to build a corporate coal transport facility at a port terminal in Oakland, California. And now, Utah representatives and senators, with a nod from the governor, plan to launder the money through a state transportation fund.

- [Click here](#) to read letter to Utah's Attorney General concerning use of CIB funds for development of a coal transport facility in Oakland, California
- [Click here](#) to read this blog by Bill Rau at On The Colorado
- [Click here](#) to read 1993 opinion by Attorney General of Utah about CIB funds
- [Click here](#) to read 1984 opinion by Attorney General of Utah about CIB funds
- [Click here](#) for more information
- [Click here](#) to read OpEd by Deseret News Editorial Board: "Coal Port Has Too Many Red Flags."
- [Click here](#) to read "Utah Lawmakers Voting to Spend Public Funds on Oakland Coal Terminal; Took \$29,000 from Company that Stands to Profit by Darwin BondGraham of East Bay Express
- [Click here](#) to read this story (March 9, 2016) by Christopher Coats of SNL News called Utah Bill Shifts Funding For Oakland Coal Port; Critics Call It Money Laundering.
- [Click here](#) to read this OpEd from the editorial board of the Salt Lake Tribune
- [Click here](#) to read this story by Molly Marcello in the Moab Times Independent
- [Click here](#) to read this story by Darwin BondGraham in the East Bay Express
- [Click here](#) to read this story in the Public News Service
- [Click here](#) to read this story by Brian Maffly of the Salt Lake Tribune
- [Click here](#) to read this story by William Yardley of the LA Times called "How Utah Quietly Made Plans to Ship Coal Through California"

2016, June: Groups write U.S. Attorney General asking for investigation of coal shipping terminal deal

- [Click here](#) to read NGO Press Release: Oakland Coal Export Terminal
- [Click here](#) to read the LETTER from Earthjustice on behalf of their clients
- [Click here](#) to read this story by Molly Marcello of Moab Times-Independent
- [Click here](#) to read this story by Ben Lockhart of The Deseret News
- [Click here](#) to read this story by Manuel Quiñones of E & E News
- [Click here](#) to read this story by Brian Maffly of Salt Lake Tribune
- [Click here](#) to read the minutes of Utah's CIB meeting of April 2016

2018, May: Utah Scraps \$53 Million Plan to Ship Coal to Oakland

- [Click here](#) to read this story by David DeBolt of the East Bay Times
- May 15, 2018 - AP story about the result of the developer's lawsuit [HERE](#).
- And this story by Brian Maffly of the Sal Lake Tribune [HERE](#)
- [Click here](#) to read this story called *Coal Industry Attorneys Threaten to Sue Oakland Over Records*

- [Click here](#) to read this story by Molly Marcello of the Moab Times Independent
 - [Click here](#) to read about Oakland's City Council Ban from William Yardley of the LA Times
 - [Click here](#) to read this High Country News article by Sarah Troy
-

USGS: Evaluation of Groundwater Resources in Spanish Valley Watershed, Grand & San Juan Counties, Utah

AUGUST 23, 2019

BY JOHN WEISHEIT

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- Our EIN is: 87-0637713

Release Date: AUGUST 16, 2019

Melissa Masbruch, Hydrologist
US Geologic Survey, Utah Water Science Center
Email: mmasbruch@usgs.gov
Phone: 801-908-5068

[Click here](#) to read the summary, the report, and to view three plates (graphics and maps)

A new assessment of groundwater resources in the Spanish Valley watershed in southern Utah shows an amount that is about 30–40% lower than previously reported, according to a U.S. Geological Survey report.

Future growth in the Moab, Utah, area is dependent on adequate water resources. With surface waters fully appropriated, water needs to support future development must be met with groundwater resources. The last assessment to determine how much groundwater is available in the Spanish Valley area was completed in the 1970s.

“These findings will be useful to local and state water managers in evaluating how much additional development can be sustained in the Moab area with the groundwater available,” said lead author and USGS scientist Melissa Masbruch. “This information can also help decision-makers make informed choices as they develop a future groundwater management plan.”

The total amount of groundwater entering and leaving the aquifer system within the Spanish Valley watershed is estimated to be 13,000 to 15,000 acre-feet per year. This estimate is based on the amount of groundwater flowing out of the aquifer, which provides a more robust assessment of how much water is in an aquifer system than recharge measurements. This current estimate is about 30–40% lower than the 1971 estimate of 22,000 acre-feet per year.

The Spanish Valley watershed includes the valley-fill and Glen Canyon Group aquifers. Results show that there is no significant groundwater inflow from the Glen Canyon Group aquifer to the valley-fill aquifer. Rather, inflow to the valley-fill aquifer was found to come from the Pack Creek watershed. This is in contrast to findings from the 1971 assessment's assumption that 14,000 acre-feet per year of groundwater enters the valley-fill aquifer from the Glen Canyon Group aquifer. Findings also show a groundwater outflow of 300 to 1,000 acre-feet per year from the watershed to the Colorado River. This amount is much lower than the 1971 estimate of 11,000 acre-feet per year.

For this study, scientists collected water-quality, water-level and flow data from wells, springs and streams in the Spanish Valley watershed from 2014 to 2016. Water-quality and water-level data were used to determine the sources of groundwater recharge and flow throughout the aquifers. Flow measurements helped to assess groundwater discharge to streams and springs and were used to determine inflow and outflow to the aquifers.

This study was done in cooperation with the Utah Division of Water Rights, City of Moab, Grand and San Juan Counties, Grand Water and Sewer Service Agency, Utah School and Institutional Trust Lands Administration, The Nature Conservancy, Utah Division of Wildlife Resources, Living Rivers, San Juan Spanish Valley Special Service District, U.S. Bureau of Land Management and the U.S. Forest Service.

###

MOVING FORWARD: Suggestions from Canyonlands Watershed Council

- **A watershed-wide monitoring program is of utmost importance:** Climate variability and water demand hardening (development that is not sustainable) must not impair the water security of this community, nor should it degrade the riparian values of Mill Creek, Pack Creek, and the natural flow of perennial springs; this heritage is cherished by residents and visitors.
- **Compromising the safe-yield is unacceptable:** Should the data analysis of the monitoring plan indicate that community values are in jeopardy, the response by the planning agencies must be transparent and the decision process must include a solution that has long-term sustainability.
- **Continue to collaborate with the regional agencies of the National Oceanic and Atmospheric Administration (NOAA):** Our community needs the best science for our specific community as it relates to the trend (1906 to 2019) of diminished precipitation, dry soils, increased evaporation and plant transpiration.
- **Invite the regional science community to provide presentations:** Use adequate venues on dates and times that will accommodate good attendance by the city and county planning agencies and the stakeholders of this community.

DO NOT WASTE TIME & MONEY ON WATER DIVERSION PROJECTS FROM THE COLORADO OR GREEN RIVERS:

- The annual average yield (supply) of the Colorado River Basin at Lee's Ferry, AZ in 1922 (the year of Colorado River Compact negotiation) was 18 million acre-feet (MAF).
- The current annual average yield (1906 to 2018) is now 14.8 MAF, a cumulative loss (112-years) of -3.2 MAF.
- From 2000 to 2017, the annual average yield at Lee's Ferry, AZ was 13 MAF.
- From 2000 to 2017, the current annual average total consumptive use (demand) of the Colorado River Basin above Lee's Ferry, AZ was 4.7 MAF.
- From 2000 to 2017, the current annual average flow below Lee's Ferry, AZ was 8.9 MAF.
- From 2000 to 2017, the total annual average demand for the upper and lower basins was 13.6 MAF, a deficit of -600,000 acre-feet per year.
- In the year 2060, the projected imbalance between supply and demand (using the data between 1906 and 2010) is estimated to be -3.2 MAF.
- Further reading, and a document archive, can be found [HERE](#)

NEWS

- [Click here](#) to read this story by *Moab Sun News* called "USGS Study Shows Less Water Than Previously Reported"
- [Click here](#) to read this story by Dennis Webb in the *Grand Junction Sentinel* about how the Western Slope of Colorado and Grand County, Utah are warming at a faster pace than the rest of the USA
- [Click here](#) to read this story by Carter Pape of *Times Independent* called "Moab Watershed 30 to 40 Percent Smaller Than Previously Reported"
- [Click here](#) to read this story by Carter Pape of *Times Independent* called "How Water Ends Up In Moab"
- [Click here](#) to read this story by Carter Pape of *Times Independent* called "USGS Confirms Valley Water Budget"

DOCUMENTS

- [Click here](#) to read the summary, report and to view three plates (graphics and maps)
-

Utah's Draft 2019 Regional Conservation Plan

SEPTEMBER 15, 2019

BY JOHN WEISHEIT

30-Day Public Comment Period ends on September 25, 2019

- [Press Release](#)
- [Regional Water Conservation Goals Information Sheet](#)

Mission of Utah Division of Water Resources: Plan, conserve, develop and protect Utah's water resources.

Regional Water Conservation Goals

The State of Utah is seeking public input through September 25 on newly established regional goals and practices for municipal and industrial (M&I) water conservation. M&I includes residential, commercial, institutional (for example, schools and parks), and industrial water use, and excludes agriculture, mining, and power generation.

As recommended by the [2015 Legislative Audit, 2017 Follow-up Audit, Third-Party Review, and 2017 Recommended State Water Strategy](#), regional water conservation goals were developed to enhance water conservation efforts around the state. Given Utah's diverse geography, establishing region-specific goals makes sense. These goals are created for nine regions around the state and take into account climate, elevation, and each region's unique characteristics and needs. This is the first time conservation goals have been established on a regional level and they build on the previously established statewide goal of reducing per-capita use by 25% by 2025, (using the 2000 M&I water use report as a starting value).

Thanks to the efforts of many Utahns and their water providers, per capita water use has declined by at least 18%. We've made significant progress, but there is still more to be done to accomplish these goals including policy and ordinance changes on state, local and municipal levels. Even with all the progress that has been made, balanced efforts both in water development and water conservation are still necessary to meet Utah's long-term water needs.

How did this project come about?

After the 2015 legislative audit recommended tailoring water conservation goals by region, the Division of Water Resources started gathering public input to formulate new goals. Over 1,650 people shared their opinions on a water conservation survey. Open houses were held in eight different regions across the state. After public input was tallied, a team consisting of water providers, members from the Governor's Office of Management and Budget, and Division of Water Resources staff worked for many

months with a third-party consultant to provide input on region-specific M&I water conservation goals. These goals will help guide the state's water industry in planning future infrastructure, policies, and programs consistent with Utah's semiarid climate and growing demand for water. We invite you to take a look and share your thoughts.

Danish Flats Water Discharge Permit 2019 Renewal

SEPTEMBER 22, 2019
BY JOHN WESIHEIT

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- Our EIN is: 87-0637713

September 12, 2019

Division of Water Quality?Utah Department of Environmental Quality Public Notice of Intent to Issue Ground Water Discharge Permit No. UGW190002.

The Utah Department of Environmental Quality (DEQ) is soliciting comments on the intent to issue a ground water discharge permit described below under authority of the Utah Water Quality Act, Section 19-5-108(1)(2) Utah Code Ann. 1953, as amended and Utah Administrative Code R317-6. Under Section 19-1-301.5, effective May 8, 2012, a person who wishes to challenge a Permit Order may only raise an issue or argument during an adjudicatory proceeding that was raised during the public comment period and was supported with sufficient information or documentation to enable the Director to fully consider the substance and significance of the issue. Utah Code Ann. 19-1-301.5 can be viewed at the following internet URL: http://le.utah.gov/~code/TITLE19/html/19_01_030105.htm

Permit Information:

OWL Danish Flats SWD
8201 Preston Road, Suite 520 Dallas, TX 75225

The evaporation ponds and permitted facilities are located approximately 8 miles north of Cisco, in Grand County, Utah.

The Division of Water Quality intends to issue Groundwater Discharge Permit No.UGW190002 for the existing Evaporation Pond facility owned by OWL Danish Flats SWD. Saline wastewater is disposed of in 6 evaporation ponds at the plant site, each approximately 5.5 acres in size. Best Available Technology (BAT) approved to protect groundwater from potential contamination includes 60-mil flexible membrane liners, leak detection sumps, and a compacted clay base that overlie low permeability Mancos Shale.

Public Comments: As of Thursday, September 12, 2019 the Division of Water Quality is providing public notice for the 30-day invitation of public comments concerning this

permit. Public comments are invited any time prior to Monday, October 14, 2019. Written comments may be directed to the Division of Water Quality (DWQ), P.O. Box 144870, Salt Lake City, UT 84114-4870. All comments received prior to close of business on Monday, October 14, 2019, will be considered in the formulation of final conditions to be imposed on the permit.

Additional Information

Additional information may be obtained upon request by contacting Chris Shope at (801) 536-4309 or cshope@utah.gov or by writing to the aforementioned address. Related documents are available for review during normal business hours at DWQ, 195 North 1950 West in Salt Lake City or on the DWQ web page at:

<http://www.waterquality.utah.gov/PublicNotices/index.htm>

In compliance with the Americans with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact:

Larene Wyss, Office of Human Resources at:

(801) 536-4284
TDD (801) 536-4284.
DWQ-2019-011230
195 North 1950 West
Salt Lake City, UT

Mailing Address:

PO Box 144870
Salt Lake City, UT 84114-4870
Telephone (801) 536-4300
Fax (801) 536-4301 • TDD (801) 536-4284
www.deq.utah.gov

DOCUMENT ARCHIVE FOR DANISH FLATS

2019 Permit

- [Public Notice](#)
- [Draft Ground Water Discharge Permit](#)
- [Statement of Basis](#)

2014 Permit

- [Public Notice](#)
- [Permit Application](#)
- [Draft Discharge Permit](#)

- [Discharge Permit](#)
 - [Draft Statement of Basis](#)
 - [Statement of Basis](#)
-

Flood Control in Moab City and Spanish Valley

MAY 22, 2020

BY JOHN WEISHEIT

CITY OF MOAB

- [Moab City Website](#)
- Document Archive

GRAND COUNTY

- [Grand County Website](#)
- Document Archive

SAN JUAN COUNTY

- San Juan County Website (not available)
- Document Archives (not available)

FEDERAL EMERGENCY MANAGEMENT ADMINISTRATION (FEMA)

- [FEMA Website](#)
- Document Archive

PROFESSIONAL PAPERS

- Visit On the Colorado- [Website](#)

PALEOFLOOD HYDROLOGY RESEARCH IN UTAH

- [Upper Colorado River](#)
- [Lower Green River](#)
- [Dolores River](#)

NEWS

- [Presentation and Panel Discussion at Moab Library with Professor Victor Baker.](#)
Inkstain Blog.
 - [KZMU - interview with Professor Victor R. Baker](#)
 - [Dr. Baker Interview Transcribed in Moab Sun News](#)
-

Spanish Valley Development Plan in San Juan County

JUNE 16, 2020

BY JOHN WEISHEIT

See also: [San Juan Spanish Valley Special Service District](#) for documents about the water rights necessary for proposed development in northern San Juan County.

NEWS

- [2020 - Commissioners Delay Spanish Valley Plan](#). San Juan Record.
- [2020- San Juan County Delays Action on SITLA's Spanish Valley Plans](#). Moab Times.
- [2019 - Development Planned in San Juan County Could Mean Thousands More Residents, Double Population](#). Salt lake Tribune.
- [2019 - Residents Push Back Against Plans To Develop Spanish Valley Starting With 13-acre Truck Stop](#). KUER.
- [2019 - San Juan County OKs Guidelines for Spanish Valley Development That Could Double County Population](#). SL Tribune.
- [2019 - SITLA issues Statement On Spanish Valley](#). Moab Times.
- [2019 - Zoning Ordinances Debated Fast Growing Spanish Valley](#). Moab Sun News.
-

PLANNING DOCUMENTS

-
- 2009, April - [Spanish Valley Block Plan](#). SITLA.
- 2017, September 19 - [Spanish Valley Area Plan San Juan County Commission Briefing](#)
- 2017, September 20 - [Scoping Meeting Notes Verbatim](#)
- 2017, September 20 - [Scoping Meeting Map](#)
- 2017, September - [Resident Landowner Stakeholder Interviews](#)
- 2017, November 20 - [Spanish Valley Area Plan Preliminary Concepts](#)
- [2018, August 15 - Request for Proposals](#). SITLA.
- [2018 - Spanish Valley Area Map](#). SITLA.
- [2018, April 17 - Spanish Valley Area Plan](#). SITLA.
- [2018, April 17 - Spanish Valley San Juan County Final Plan](#). San Juan County.
- [Spanish Valley Area Plan Guiding Principles](#)
- 2018 - [San Juan County General Plan](#)
- 2018 - [Spanish Valley Area Plan Alternatives Workshop Presentation](#)
- 2018, February 12 - [Area Plan](#)
- 2018, February 12 - [Phasing Map](#)
- 2018, February 13 - [Draft Plan Open House Flyer](#) (jpg)
- 2018, April 17 - [Spanish Valley Final Plan](#)
- 2019, March 19 - [Spanish Valley Ordinances for PC Zone Plan Presentation](#)

- 2019, July - [Summary of Comments San Juan County Highway 191 Commercial Moratorium](#) (Personal Info Redacted)
- 2019, August 5 - [Presentation San Juan Highway Commercial Moratorium Workshop](#). LDI.
- 2019, August 5 - [Public Workshop Flyer SJCHC](#)
- 2020, August 13 - [Attorney Review of Sitla PC Zone Application Spanish Valley](#)
- 2019, August 29 - [Public Workshop Summary Public Comments SJC Hwy Zone Land Use Options SJC Highway 191 Commercial Zoning](#)
- 2019, August 29 - [Email Comments After San Juan Ordinances](#)
- 2019, September 13 - [Draft Final SCSV Ordinances](#)
- 2019, September 13 - [Draft Ordinance; Resolve Temporary Prohibition Highway 191 Commercial Development](#)
- 2018, November 15 - [Spanish Valley Dark Sky Ordinances Revise](#)
- 2019, November 14 - [PC Revisions Draft Final San Juan County Spanish Valley Ordinances Map Options](#)
- 2019, November 19 - [Recommended San Juan County Spanish Valley Ordinances](#)
- 2020, August 24 - [Who Attended the Virtual Meeting with County Manager](#) (png)
- 2020, August - [Comment from Living River to San Juan County Commissioners](#).

DOCUMENT ARCHIVE

-
- [Map - San Juan County Trust Lands](#)
- [1990 - Utah's School Trust Lands a Century of Unrealized Expectations](#). Harmer.
- [Utah School Trust Lands](#). Hedden & Bigler.
- [1999- Law Review: Managing State Trust Land](#). NYU.

CONTACT THE COMMISSIONERS OF SAN JUAN COUNTY

- Chairman Kenneth Maryboy <kmaryboy@sanjuancounty.org>
 - Commissioner Willie Grayeyes <williegrayeyes@sanjuancounty.org>
 - Commissioner Bruce Adams <bbadams@sanjuancounty.org>
 - County Administrator Mack McDonald <mmcdonald@sanjuancounty.org>
-

Book Cliffs Highway Application Submission of 2020 and 2021 and all other previous applications

JULY 13, 2020

BY JOHN WEISHEIT

Note: As of December 2020, the Books Cliff Highway proposal was tabled. Then, in May of 2021, the proposal was reinitiated by the Seven County Infrastructure Coalition. Then, in March of 2022, the proposal was withdrawn. This does not necessarily mean the project will not return in the future. The Grand County Commission has opposed every iteration of this proposal since the early 1990s.

RECENT NEWS

March 18, 2022- [Book Cliffs Highway Project Canceled](#). Alison Harford and Rachel Fixsen for *Moab Sun News*.

June 3, 2021 - [Book Cliffs highway on again: Coalition adds highway back to active project list in search of infrastructure funding](#). Carter Pape of *Moab Times-Independent*.

[Click here](#) to read this story by Carter Pape in *Times-Independent* and titled "Book Cliffs Highway Suspended - Funds Reallocated"

[Click here](#) to read this story by Kate Groetzinger of *KUER Radio* and titled "Controversial Highway Through Book Cliffs Tabled For Now Due To Local Opposition"

2021 PROGRAM REACTIVATION DOCUMENTS

- July, 2021 - [Zip File](#). Documents from Utah GRAMA Fulfillment.

####

The proposed highway section in Grand County would begin at its northern boundary at the top of the Book Cliffs (elevation is generally 8,000 feet). The highway section in Uintah County is already paved and ends at its southern boundary. Before pavement, it was known as Seep Ridge Road. This lonely highway is already in need of repairs due to subsidence in the roadbase.

This paved highway (driving south) begins at the Green River Bridge near Ouray, Utah. The lateral roads go to existing oil and gas fields (mostly natural gas). However, demonstration sites that propose to strip mine oil shale (hard rock kerogen) and tar sands deposits are directly adjacent to this paved highway. These demonstration sites of unconventional fuels are not operational for several reasons, which include poor return on investment and lack of water for production.

For a good return on investment, it is necessary to develop hundreds-of-thousands of acres, but the quantity of water supplies to develop this unconventional oil resource at this level are not cheaply available. The water managers of the Colorado River Basin are currently managing a serious water shortage situation and hydropower production

inefficiencies due to low reservoir levels. This water scarcity condition has two explanations:

(1) Maximum water consumption in the Colorado River Basin was achieved in Year 2003 ([USBR Graphic](#)).

(2) The consequence of global greenhouse gas loading in the atmosphere, for the arid lands of Western USA, has served to increase water demand due to increasing evaporation (heat).

Fossil fuel production in Uintah and Duchene County is not managed properly at the level of investor financing. The goal is to exploit the resource as quickly as possible to guarantee a return on investment. The drive is not about demand for the resource, but rather for investor demand.

The resource reserves will be gone very soon and we already know the reclamation of the extraction sites will not happen at the same pace as the production did. It is already an embarrassing spectacle to visit and in the near future it will be a tragic wasteland, rather than a functioning and productive ecosystem.

The proponents of this highway insist that the highway will become a an attraction for tourism. It is absurd to think the visiting public would want to visit a wasteland of extreme fossil fuel activities. Indeed, this highway is about expanding this industrial hydrocarbon wasteland and this activity will not incentivize the tourist dollar.

The lack of decent stewardship in the management of these Public lands is incomprehensible and the current policies that encourage short-term gains for long-term consequences must be abandoned immediately.

MOST RECENT APPLICATION OF JUNE, 2020

- [Right-of-Way application for Eastern Utah Road Connection, Preliminary Plan of Development](#) (February 2019)
- [Biological Resources Reconnaissance Survey](#) (July, 2018)
- [2018, December - EURC Meeting with BLM](#)
- [BLM Response of Application Insufficiency](#) (App submitted March, 2019)
- [Grand County discussion of application](#) (09/01/2020)
- [Map of Proposed Route](#) (Modified East Canyon)
- [Map of Lateral Roads East Canyon](#)
- [Meeting Notes](#). BLM.
- October, 2020 - [Freedom of Information Act Documents](#)

2021 PROGRAM REACTIVATION DOCUMENTS

- July, 2021 - [Zip File](#). Documents from Utah GRAMA Fulfillment.

STUDIES

- [1991 - Survey Correspondence about Book Cliffs Highway](#)
- [1991 - Environmental Assessment for Road Survey, Ouray To Cisco Hwy.](#) BLM.
- [1991 - Preliminary Draft EIS, Highway from Ouray to Cisco.](#) BLM.
- [1992 - Draft EIS, Ouray to Interstate 70.](#) BLM.
- [2005 - Bookcliffs Road: Dumb Idea.](#) Christie.
- [2015 - Bookcliffs Transportation Corridor Study.](#) Seven County Infrastructure Coalition.
- [2021 - Highway Travel Times: Moab to Vernal.](#) Stock.

WEBSITES: Additional Information

- [Canyon Country Rising Tide \(CCRT\)](#)
- [CCRT Fact Sheet](#)

SENSITIVE SPECIES

- *Astragalus sabulosus* (Cisco milkvetch)
- [Photo of Cisco milkvetch.](#) USGS.

NEWS

-
- 2020, September - [Coalition Allocates Funds for Phase 2: Book Cliffs Highway.](#) John Thompson & UB Media.
- [County Not Keen On Book Cliffs Highway.](#)
- 2020, September - [Grand County Fights Resurrected Book Cliffs Highway Proposal.](#) Brian Maffly and SL Trib.
- 2020, September - [Proposed Highway Through Book Cliffs Faces Opposition From Grand County Again.](#) KUER and .Kate Groetzinger.
- 2019, April - [The Book Cliffs Highway Moving Forward.](#) Sage Grouse Rebel at CCRT.
- 2019, April [Utah Officials Seek Local Support in Moab for Book Cliffs Road.](#) Moab Sun New.
- 2019, July - [Commissioners Attempt to Revive Book Cliffs Highway.](#) John Thompson and UB Media
- 2019, December - [Battle Over Proposed Book Cliffs Highway Resumes/ Moab Times Independent.](#)
- 2014, August - [Book Cliffs Highway Update.](#) Stiles.

LITIGATION OVER INAPPROPRIATE FUNDING BY COMMUNITY IMPACT BOARD (CIB)

- [Lawsuit filed in August of 2020 by Living Rivers and Center for Biological Diversity.](#) Includes legal brief, exhibits and features in the news.

ADDITIONAL INFORMATION

- [County Coalition to use Community Impact funds to Deliver Coal to Oakland Port.](#) Far Country.
- [The Eastern Utah County Coalition for the Development of Oil and Gas Infrastructure.](#) Far Country.
- [Citizens of eastern Utah submit letter to Utah's Attorney General on use of CIB funds for proposed coal transport facility in Oakland, CA.](#) Living Rivers.
- [Groups write U.S. Attorney General asking for investigation of coal shipping terminal deal.](#) Living Rivers.

CIB REFORM

Documents and News

- [**2021 - Utah Oil Slick: Funding Polluters Instead of Rural Communities.**](#) Center for Biological Diversity.
 - Katie McKellar for Deseret News - [Utah misusing public funds for fossil fuel projects, environmental groups allege.](#)
 - [**2016 - Letter to USA Attorney General requesting Investigation Utah 53 Million Mineral Leasing Payments Coal Export Terminal Oakland California.**](#) Living Rivers.
 - Ben Lockhart for Deseret News - [Groups Write US Attorney General Asking For Investigation Coal Shipping Terminal Deal.](#)
 - Brian Maffly for Salt Lake Tribune - [Utah Groups Demand Federal Probe Into Utah Role Coal Port.](#)
 - Manuel Quiñones, E&E reporter - [Groups Ask DOJ to Probe Utah Funding For Export Project.](#)
-

SJSVSSD: Change Application for San Juan Spanish Valley Special Service District

JUNE 02, 2021
BY JOHN WEISHEIT

YES! Canyonlands Watershed Council is a charitable organization.

- PayPal - [HERE](#)
- Venmo - [HERE](#)
- Our EIN is: 87-0637713

New information: [Order of the State Engineer](#)

Note: A Ground Water Management Plan for Moab and Spanish Valleys will soon be implemented by the State Engineer.

SAN JUAN SPANISH VALLEY SPECIAL SERVICE DISTRICT (SJSVSSD)

- [Web site for SJSVSSD Water Right # 09-2349](#)
- A segregation from [Water Right # 09-438](#) (municipal supply)
- [Web site for scanned documents Water Right 09-2349](#)
- [2011- Water Right Change Application](#) (Water Right 09-2349)
- [Web site for Water Right 09-2349](#)
- [Web site for scanned documents Water Right 09-2349](#)
- [2011 - SJSVSSD letter to Nature Conservancy](#)
- [Statement of a Water Right Segregation](#)
- [Historic Property Evaluation](#)
- [Corrections to the application](#)
- Map: [Proposed wells and point of diversion](#)
- Protest: [Living Rivers](#)
- Protest: [Department of Interior](#)
- Protest: [Moab City](#) and here
- Protest: [Canyonlands Watershed Council](#)
- Protest: [Grand Water & Sewer Service District](#)
- Protest: [Nature Conservancy](#)
- Answer to Protest: [SJSVSSD](#)

STORY FROM THE TIMES-INDEPENDENT

GWSSA to protest San Juan agency's application for change to water rights

by Jeff Richards

Both the Grand Water and Sewer Service Agency (GWSSA) and Moab city are planning to file formal protests against a water change application filed recently with the Utah Division of Water Rights.

According to the change application filed with the state on April 27 by William Johnston, chairman of the San Juan Spanish Valley Special Service District (SJSVSSD), the special service district is seeking to transfer 5,000 acre-feet of water rights from the San Juan River near Bluff, Utah, to the Colorado River near Moab, and to proposed wells located in the southern portion of Spanish Valley and some in the Kane Spring drainage. The water is for proposed municipal use by customers living in the area of the SJSVSSD, according to the application.

But GWSSA and Moab city officials are among those expressing concerns about the proposal.

In a memo to the Moab City Council dated May 27, Moab City Engineer Rebecca Andrus noted that the proposed wells will be using the same aquifer used by the city.

"The addition of these wells could significantly impact the water supply for the city of Moab," Andrus wrote. "Some of the wells are in the city's source protection zones and many are adjacent, and could cause contamination."

The SJSVSSD application lists a total of 24 wells to be drilled, one of which is at an existing well location. The proposed wells range from 8 to 12 inches in diameter and will be between 200 and 2,500 feet deep, according to the application. A new 15 million gallon year-round storage reservoir is also planned, to be located within the special service district area. The application states that a diversion structure and pump on the east bank of the Colorado River will also be used to transport some water via pipeline to the point of use. The Colorado River is listed on the application as a tertiary water source, meaning it is third in line for providing the water. The application lists the Spanish Valley wells as the primary source and the Kane Springs aquifer as the secondary source.

GWSSA committee members said at their regular board meeting last week that pumping water uphill from the Colorado River hasn't proven to be economically feasible.

"If they wanted to take 100 acre feet out of our wells out here, and pump the other 4,900 acre feet out of the Colorado River, we wouldn't care," said Gary Wilson, vice president of the GWSSA operating committee. "But the other way around, it's a concern."

“If they actually had the funds to do that [pump substantial amounts of water from the Colorado River], I would write them a letter of support, not protest,” added Wilson.

On June 2, the GWSSA committee members voted unanimously to file a formal letter of protest with the state engineer. Earlier this week, Moab City Manager Donna Metzler said that the city is drafting a similar letter and that the issue is scheduled to be on the Moab City Council’s agenda for its next regular meeting on June 14.

USGS: National Ground-Water Monitoring Network

DECEMBER 09, 2021

BY JOHN WEISHEIT

The SECURE Water Act of 2009 provided funding and support mechanisms to all communities in the arid lands so that water resources can be managed more effectively. The National Ground-Water Monitoring Network (NGWWN) is one such program, which is administered by the United States Geological Survey.

Note: If you have questions about the National Ground-Water Monitoring Network Program, please contact:

Daryll Pope

Office - 804-261-2630

Cell - (609) 462-7119

eMail - dpope@usgs.gov

NGWWN WEBSITES

- [Home page of the National Groundwater Monitoring Network](#)
- [The data portal](#); a self-serve, interactive website.

FUNDING OPPORTUNITIES

The USGS National Ground-Water Monitoring Network (NGWMN) has been offering funding to agencies to participate in the NGWMN since Federal Fiscal Year 2015. Documents describing the projects funded through the NGWMN Cooperative Agreements for each year are listed below:

- [The funding opportunity portal](#)
 - [Fact sheet: Year 2022 funding opportunity](#)
 - [Powerpoint: grant writing support presentation](#) & archived [HERE](#).
 - [Package: Folder of necessary documents](#). zip.
-

WURMP: Committee to develop a Water Utility Resource Management Plan Moab & Spanish Valley, Utah

JANUARY 01, 2023

BY JOHN S. WEISHEIT

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- Our EIN is: 87-0637713

NARRATIVE

Essentially this water resource management plan is an assumption that growth in Moab-Spanish Valley, for the next 100-years, will need to develop water resource infrastructure for 48,000 people; about four times greater than the present population of 11,270 people as of 2022.

What is not an assumption, is that the aquifers of this community are presently being monitored to make sure we avoid mining our groundwater supplies. As to the Colorado River, the year in which demand exceeded supply happened in 2003. Since 1991, the 30-year average of inflow into Lake Powell has been declining 800,000 acre-feet every ten years, or 2.4 million acre-feet.

The correct 100-year plan should be about adapting to the impacts of climate change, rather than to assume business as usual.

PUBLIC EDUCATION EVENTS

SPONSOR:

Grand County Commission

WATER 101 (the first of three sessions)

PRESENTERS:

- Marc Stilson, Utah Division of Water Rights & [Presentation](#)
- Arne Hultquist, Moab Area Watershed Partnership & Presentation

Archive of live presentation via YouTube:

<https://www.youtube.com/watch?v=DC70Y8042uU>

Date, time and venue:

July 26, 2023 (Wednesday) at 6 PM
Utah State University, Classroom #101
1850 S. Aggie Boulevard
Moab, UT 84532

Posters: please print and distribute to your networks

- [Poster 01: Water 101 Workshop](#)
- [Poster 02: Water 101 Workshop](#)

WATER 201 EVENT (the second of a three part series)

- [The presentation was recorded and archived on YouTube](#)

NEWS ABOUT WATER 201 EVENT

- [2023 Is Not Going To Get Us Out Of This](#). By Spohia Fisher for Moab Times Independent.
- [A Crash Course On Our Crushing Water Reality](#). By Doug McMurdo for Moab Times Independent.
- [Residents Urged To Participate In Nov 1 Sustainability Action Plan Open House](#). By Doug McMurdo for Moab Times Independent.

Date, time and venue:

October 20, 2023 (Friday) at 6 PM
Utah State University, Classroom #101
1850 S. Aggie Boulevard
Moab, UT 84532

DOWNLOAD: the [poster](#) for WATER 201 and please share with your networks. Poster has a QR code to connect with the Zoom meeting.

Zoom Credentials

- <https://usu-edu.zoom.us/j/85415070224?pwd=aFJENW1VS2Judm5xa2oyMTZJVGV5TQT09>
- Meeting ID: 854 1507 0224
- Passcode: 469753

PRESENTERS

- **Dr. John (Jack) C Schmidt** has focused on the effects of dams and diversions on rivers, environmental change of rivers, and development of strategies for mitigating the adverse effects of river development. At the Water 201 workshop, he will speak about present and future stream flow and water use of the Colorado River, and how that is relevant to us here in Grand County.
- **Dr. Thomas (Tom) E Lachmar** has worked as a hydrogeologist for over 45 years. He holds multiple degrees in Geology, and worked at multiple consulting firms before joining the faculty in the Geosciences (formerly Geology)

Department at Utah State University in 1990. Many Moab residents have wondered how to make sense of the more than one dozen water studies involving Moab and Spanish Valley's water resources completed between 1971 and 2021. At the Water 201 workshop, Lachmar will share findings from his scientific peer review of all that published research. He will speak about the state of Moab's aquifers and what the results mean for the future of our residents.

- **Dr. Jayne Belnap** has been a resident scientist since 1980, studying the impacts of climate and human activities on ecosystem function, from local to global scales. Her Water 201 presentation will be a brief primer on the future climate, and its influence on water, for Grand County. She will cover how the combination of future precipitation and temperature, this climate's impact on plants and soils, human activities, and other forces will determine our future water supplies.

WATER 301 EVENT

The water managers of Moab-Spanish Valley

San Juan County does not attend these meetings

- [April 5, 2024 - YouTube Recording](#)

WATER UTILITIY RESOURCE MANAGEMENT PLAN (WURMP)Moab & Spanish Valley

- [Official website](#). City of Moab.
-

3rd Round of Public Meeting

- Sponsor: City of Moab
- Wednesday, September 20, 2023 at 6:00 p.m.
- via Zoom: <http://bit.ly/WURMPFocusGroup3>

2nd Round of Public Meetings

- Sponsor: City of Moab
- Monday, May 22nd at 6:00 via Zoom @ bit.ly/WURMPFocusGroup2
- Wednesday, May 24th from 5:00 to 7:00 pm at the Grand Center in Moab.

Note: The 1st round of foundational meetings were not public

DATA AND REFERENCES

- 1978 - [Contract between Moab Irrigation Company and Grand County Water Conservancy District](#)
- 2019 - [Moab Water Facts](#). pdf.
- 2022 - [First WURMP webinar data sheets](#). pdf.
- 2023 - [Data sheets updated](#). pdf.

SOLUTIONS

- [2023 - Amenity Trap: How High Amenity Communities Can Avoid Being Loved To Death](#). Headwaters Economics.

VISIONARY STRATEGIES

Ten Strategies for Climate Resilience on the Colorado River Basin

- [Homepage](#)
- [Press Release, Program Snapshot & Program Summary](#)
- [Full Report](#)
- [Appendix](#)

NEWS

- [City Water Expert Seeks Public Input](#). Ashley Bunton for *The Times-Independent*.
- [Aquifer uncertainties vex Moab City Council](#). By Ashley Bunton for Moab Times Independent.
- [A snapshot of Moab's water issues](#). By Alison Harford for *Moab Sun News*.
- [How to land the plane safely](#). By Sophia Fisher for *Moab Times Independent*.
- [Water for the next century](#). Rachel Fixsen for Moab Sun News.

OPINION

- [Sharing the sandbox](#). Kiley Miller for Moab Times-Independent.
- [Democracy in an era of water scarcity](#). Rani Derasary for Moab Times-Independent.

PUBLIC COMMENTS

- [Responses to Questions](#). August 15, 2023; Sophie Frankenburg at Logan and Simpson.
- May 04, 2023 - [Living Rivers](#). John Weisheit, Conservation Director.

PUBLIC MEETINGS

- December 14, 2022 - [First WURMP focus meeting via webinar](#). YouTube. [Data Sheets.pdf](#)
- February 21, 2023 - Joint City and County Meeting. [Understanding Groundwater in Spanish Valley](#). YouTube.
- March 21, 2023 - Grand County Commission. [Grand County's Water Rights by Laurel Hagen](#). YouTube.
- April 25, 2023 - [City Council WURMP Workshop](#). YouTube.

Criteria for a resource management plan. Utah Division of Water Resources

- [2021 - Water Resources Planing](#). Utah Division of Water Resources

GOVERNANCE AND CONTRACTOR

- Legislative authority is: City of Moab, Grand County, & San Juan County.

- Water Utility Purveyors: City of Moab, Grand Water & Sewer Service Agency, San Juan Spanish Valley Special Service District and Moab irrigation Company.
- City Engineer for City of Moab - Chuck Williams eMail.
- Hans, Allen and Luce; contractor to develop this management plan - Ben Miner eMail, Katie Jacobson (801-566-5599), Dan Jones.
- Logan Simpson Design - Sophie Frankenburg eMail is public engagement contractor; Jim Carter eMail.
- Sunrise Engineering - (800-560-6151) Devan Shields.

Formative Documents for the water Resource Management Plan

- [2022 - Memorandum of Understanding to Develop Water Utility Resource Management Plan.](#)
- [2022 - Water Utility Resource Management Plan Scope of Work and Proposal.](#)
- [2022 - Approval of MOU to Develop Water Utility Resource Management Plan: Agenda and Summary.](#)

UTAH CODE

73-5-15. Groundwater management plan ([view statute](#))

- Safe Yield: Should the local governments exceed the safe yield requirement for the aquifers of Moab-Spanish Valley, then regulating authority will be transferred to the State Engineer.

US GEOLOGICAL SURVEY

- 2023 - [USGS Monitoring Report](#)

QUESTIONS FOR PUBLIC COMMENT

- Matheson Wetlands: What is the brine layer doing and where is it going?
 - Hwy 191 Springs: Is the quantity decreasing and is the quality degrading?
 - Floods: Rain on snow, upstream dam failures, maximum precipitation events, monsoon cloudbursts, atmospheric rivers, sheet rain, development hardened landscapes. Colorado River, Mill Creek, Pack Creek; independently or all at sources of stream flow at the same time?
 - Mill Creek: It waters the shade trees and provides riparian habitat, and recharges the vsley fill aquifer aquifer, which weighs down upon on the brine layer effectively. Is this free ecological service important to our community, or not?
 - Sewer Service expansion will be required and preferably the facility will not be in the 500-year floodplain of the Colorado River, or the tributaries of Mill Creek and/ or Pack Creek. Transportation corridor is already congested and unsafe.
-

SUMMARY: Groundwater Protection Analysis for Moab City and Spanish Valley

JANUARY 02, 2023

BY JOHN WEISHEIT

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- Our EIN is: 87-0637713

The following analyses for groundwater protection in Moab & Spanish Valley includes contributions from the following organizations:

- Utah Division of Water Rights
- US Geological Survey
- Utah Geological Survey
- Bureau of Land Management
- US Forest Service
- Western Water Assessment (NOAA)
- University of Utah
- Utah State University
- Southeast Utah Health Department
- Moab City
- Grand County and its Special Service Districts
- San Juan Spanish Valley Special Service District
- Moab Area Watershed Partnership
- Canyonlands Watershed Council
- Living Rivers & Colorado Riverkeeper

PRESENTATIONS: MAWP MEETING OF MARCH, 2021

Summaries of Moab-Spanish Valley Groundwater Studies

- [Climate Change Impacts on Groundwater in Moab-Spanish Valley](#). WWA.
- [Hydrology Monitoring of Moab Area](#). USGS.
- [Matheson Wetlands Preliminary Workplan](#). UGS.
- [Moab-Spanish Valley Groundwater Study Summary](#). Gardner et al.
- [Safe Yield Discussion](#). UDWRi.

CITY AND COUNTY MEETINGS (Virtual)

- May 4, 2021 - [Grand County Council with Utah Division of Water Riights](#). Mark Stilson.

MOAB NEWS: Water Scarcity Issues Confronting Moab-Spanish Valley

- [Click here](#) to read this story by Kate Groetzinger from KUER Public Radio called "Moab May Be Running Out Of Water. That's Prompting Residents To Rethink Conservation And Development. "
- [Click here](#) to read this story by Graham Dudley from KSL TV called "How Much Water Is Really Under Moab? Scientists say, Less Than Thought."
- [Click here](#) to read "Moab's Aquifer May Be Maxed Out Prompting City To Explore Water Conservation" by Kate Groetzinger for KUER.
- [Click here](#) to ready this story by Doug McMurdo of *Times-Independent*: "Water restrictions coming to Moab."
- [Click here](#) to read this story by Rachel Fixsen of *Moab Sun News*: "Thirsty Valley: City Officials Take Hard Look At Water Resources"
- [Click here](#) to read this story by Doug McMurdo of *Moab Times-Independent*: "Got Water? More Questions Than Answers On Aquifer Capacity"
- [Click here](#) to read this story by *Moab Sun News* called "USGS Study Shows Less Water Than Previously Reported"
- [Click here](#) to read this story by Dennis Webb in the *Grand Junction Sentinel* about how the Western Slope of Colorado and Grand County, Utah are warming at a faster pace than the rest of the USA
- [Click here](#) to read this story by Carter Pape of *Times Independent* called "Moab Watershed 30 to 40 Percent Smaller Than Previously Reported"
- [Click here](#) to read this story by Carter Pape of *Times Independent* called "How Water Ends Up In Moab"
- [Click here](#) to read this story by Carter Pape of *Times Independent* called "USGS Confirms Valley Water Budget"

UTAH CODE FOR GROUNDWATER PROTECTION

- [Groundwater Management Plan Development](#)

2021 - STATE ENGINEER RESTRICTIONS FOR NEW APPROPRIATIONS IN MOAB AREA ([reference](#))

SURFACE & GROUND WATER: The water resources of this area are considered to be limited. New appropriations are limited to small amounts of beneficial use sufficient to serve the domestic requirements of one family, the irrigation of one acre, and ten head of livestock (or equivalent livestock units). New diversions and consumptive uses that require more water than this must be accomplished by filing a change application on valid existing water rights owned or acquired by the applicant. However, some water is available for larger appropriations on a Temporary (one-year) or Fixed Time period basis. Non-consumptive uses such as hydroelectric power generation would be considered on the individual merits of each application.

All applications, including changes on existing water rights, are considered on their individual merits, with emphasis on their potential to interfere with existing rights and to ensure that there is no enlargement of the underlying rights.

Applications are generally approved upon showing of an immediate need for water and with the presumptions that the applicant has all necessary resources and authorities to diligently develop the proposed beneficial uses of water and to file proof. Proof must be submitted by a registered land surveyor or engineer licensed in the State of Utah. Requests for extensions of time in which to submit proof will be critically reviewed after the initial five-year period.

The following specific restrictions apply:

Moab City - No appropriations for domestic use will be approved within the city limits of Moab. Limited stockwatering (up to ten head of livestock) and 1/4 acre of irrigation use east of Main Street will be considered. Larger use appropriations west of Main Street to the Colorado River, for up to ten head of livestock watering and 1 acre of irrigation, will be accepted and reviewed on their individual merits.

Willow Basin - Surface waters are closed to new appropriations. New diversions and consumptive uses must be accomplished by filing a change application on valid existing water rights owned or acquired by the applicant. New applications for ground water are limited to 2 acre feet. [Click here](#) to see a map of the restricted area.

Mill Creek Upper Watershed Drainage - Surface and ground waters are closed to new appropriations. New diversions and consumptive uses must be accomplished by filing a change application on valid existing First Class priority water rights or water shares based on First Class priority water rights held by the Moab Irrigation Company. Change approval may require the installation of meters and regulation by the Mill Creek Commissioner at the applicant's expense. [Click here](#) to see a map of the restricted area.

Town of Castle Valley – Surface and ground waters are closed to new appropriations within the municipal boundaries of the town. New diversions and consumptive uses must be accomplished by filing a change application on valid existing water rights owned or acquired by the applicant. Water will also remain available for use based on a water permit agreement with the Town of Castle Valley. [Click here](#) to see a map of the restricted area.

LEGAL REVIEWS

- [2021 - The Importance of Pre-compact Water Rights in the Climate Change Era of Colorado River Water Planning](#). Hagen.

COMPILATION OF RECENT HYDROGEOLOGY ASSESSMENTS

- [USGS Study of 2019](#): summary, report and maps combined.

- Academic Journal Review: [2020 - Rethinking Groundwater Flow System Using Multiple Tracer Geochemical Approach: Case Study Moab-Spanish Valley](#). Gardner.
- University of Utah and USGS - [Suggestions for Groundwater Monitoring for Moab-Spanish Valley](#). Gardner and Solomon.
- Graphic: [The flow of groundwater](#). USGS.
- 2023 - [USGS Monitoring Report](#)

MOAB CITY HYDROLOGIC ASSESSMENTS

Hydrologic And Hydrogeologic Assessment (HESA)* of the surface water and groundwater resources affecting the Moab City Springs and Wells & surface water of Mill Creek and Pack Creek in Moab-Spanish Valley in Grand County and San Juan County. By Hydrologic Systems Analysis, & Heath Hydrology, contractors for Moab City.

* HESA - Hydrological and Environmental Systems Analysis involves the management, processing and interpretation of huge amounts of geoscientific as well as ecological and historical data of many different types and sources, which can only be handled coherently and efficiently by using interactive Geoscientific Information Systems (GIS).

-
- Phase One: [2018 - HESA-based hydrologic and environmental system analysis and conceptual models](#)
- Phase Two: [2019 - Preliminary HESA-based water budget and aquifer storage evaluation](#)
- Phase Three: [2020 - Proposed Updated Drinking Water Source Protection Zone Delineations & Proposed Monitoring Plan](#)
- Phase Four: [2020 - Preliminary HESA-based water budget aquifer storage evaluation Spanish Valley and Mill Creek/ Pack Creek hydrologic systems](#)

MOAB CITY COUNCIL

- Special City Council Meeting of December 16, 2020; Water Resources Status Presentation by staff - [YouTube Video](#) & presentation by council member Mike Duncan called *Moving to a water-restricted future* (pdf).
- Memo to City Council - [Response to Comments on Phase 3 and 4 Reports](#). Kolm.

UTAH DIVISION OF WATER RIGHTS (UDWRi)

- 2019 - [Presentation: Groundwater Monitoring North Moab-Spanish Valley](#)
- 2020, January - [Presentation: Groundwater Monitoring Central Moab-Spanish Valley](#)
- 2020, July - [Presentation: Groundwater Monitoring South Moab-Spanish Valley](#)
- 2020, November - [Current Water Rights Policy for Moab- Spanish Valley](#)
- 2014, April - [Moab-Spanish Valley Presentation for Groundwater Monitoring Program](#)
- **Note:** Court Decree for Water Right Adjudications are pending

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-

MOAB AREA WATERSHED PARTNERSHIP (MAWP)

- [2014 - Watershed Mangement Plan](#)

MOAB WETLANDS AND COLORADO RIVER FLOODPLAIN

- [2003 - Investigation of the Hydrologic Connection between the Moab Mill Tailings and the Matheson Wetland Preserve.](#) Gardner and Solomon; Nature Conservancy.
- [2006 - The Moab Mill Project: A technical report towards reclaiming uranium mill tailings along the Colorado River in Grand County, Utah.](#) Dohrenwend and Greenbaum; Living Rivers.

WATER SUPPLY & DEMAND ASSESSMENTS

- [2016 - Average Water Consumption for Moab City.](#) CWC.
- [2016 - Water Production & Utilization.](#) CWC.
- [2016 - Total Water Production for Gravity \(springs\) & Pumped.](#) CWC.
- [2019 - Evaluation And Recommendation of Water Availability.](#) Moab City.
- [2019 - Moab Water Facts.](#) WCDMAB.
- [2019 - Memo to City Council: Water Availability.](#) WCDMAB.

POPULATION STATISTICS

- [2015 - Moab & Grand County Population Growth: 1990 to 2014.](#) CWC.
- [2013 - Grand County Buildout Projections.](#) CWC.

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WATER CONSERVATION PLANS

- [2011 - Water Conservation Plan.](#) Moab City.
- [2014 - Water Conservation Plan.](#) GWSSA.
- [2016 - Water Conservation Plan.](#) Moab City.

-

WATER USAGE PLANS & PROJECTIONS

-
- [2008 - 40-Year Plan: Grand Water and Sewer Service Agency](#) (GWSSA)
- [2016 - Culinary Water System Master Plan.](#) GWSSA.
- [2017 - 40-Year Plan: San Juan Spanish Valley Special Service District](#) (SJSVSSD)
- [2018 - 40-year Plan.](#) GWSSA.
- [2018 - Water Distribution and Storage Master Plan.](#) Moab City.
- [2018 - Water Distribution Plan.](#) Moab Irrigation Company.

CLIMATE ASSESSMENT & CLIMATE ADAPTATION

-
- [2010 - Forest and Water Climate Adaptation: A Case Study of Moab and Castle Valley, Utah](#). CWC.
- [2019 - Spanish Valley/Moab Drought and Climate Workshop Report: Vulnerability, Consequences, and Adaptation Planning Scenarios \(VCAPS\)](#). Western Climate Assessment at CU Boulder (NOAA) & Environmental Dispute Resolution Program at UofU Salt Lake City (Wallace Stegner Center).

GROUNDWATER MONITORING DATA

US Geological Survey

- [Future Groundwater Monitoring Suggestions for Spanish Valley](#). USGS & U of U.
- [Groundwater Watch for Moab-Spanish Valley](#)
- [National Ground-Water Monitoring Network](#)

City of Moab

- [Moab City Historical Well and Spring Data](#); 1978 to 2013.
- [Possible City Well & Spring Contamination Sources](#)

San Juan Spanish Valley Special Service District

- [2020 - Annual Monitoring Report for Spanish Valley](#). SJSVSSD.
- [2019 - Groundwater Monitoring Report for Spanish Valley, Utah](#). SJSVSSD.
- [2018 - Groundwater Monitoring Report for Spanish Valley](#). SJSVSSD.

SURFACE WATER MONITORING DATA FOR GRAND COUNTY

US Geological Survey

- Mill Creek above Sheley Tunnel [#09183500](#)
- Mill Creek below Sheley Tunnel [#09183600](#)
- **Note:** Sheley Tunnel is a diversion into Ken's Lake
- Mill Creek below mouth of Pack Creek (Moab) [#09185100](#)
- Upper Pack Creek (gage installation is recommended)
- Dolores River mouth (before confluence with Colorado River) [#0918000](#)
- Colorado River below mouth of Dolores River ("Cisco") [#091805000](#)
- Colorado River below Potash Boat Ramp (last gage on the Colorado River above the confluence with the Green River) [#09185600](#)
- Green River at Green River City [#09315000](#)
- Green River below Mineral Bottom Boat Ramp (last gage on the Green River) [#09328920](#)

WEATHER STATIONS AND DATA FOR GRAND COUNTY

- [Desert Research institute](#)
- [Meso West - Utah](#)

MAPS

- 1997 - [Map of recharge areas for the Glen Canyon and valley-fill aquifers, Spanish Valley area, Grand and San Juan Counties, Utah](#). US Geological Survey. Steiger et al.
 - [2002 - Geologic Map of Moab-Spanish Valley](#). Doelling.
 - 2007 - [Aquifer recharge map \(USG\) & alternative version \(USGS\)](#).
 - [Septic tank recommendation map](#)
 - [Map: Locations of Moab aquifers and oil & gas parcels](#)
 - [Publications and maps from US Geological Survey](#)
 - [Publications and maps from US Geological Survey](#)
-

SUMMARY: Groundwater Science for Moab and Spanish Valley

JANUARY 03, 2023

BY JOHN WEISHEIT

STATISTICS OF THE WATERSHED FOR MOAB-SPANISH VALLEY

- 24 million years ago - igneous intrusive plutons begin to create the La Sal Mountains.
- 1 million years ago - The collapse of a salt anticline forms Moab-Spanish Valley.
- 10,000 years ago - Humans begin to utilize this watershed.
- 12,646 feet - Highest elevation of this watershed at Mt. Mellenthin.
- Note: The tallest peak, Mt. Peale, does not drain into Moab-Spanish Valley
- 3,960 feet - Lowest elevation on this watershed at the confluence of Mill Creek and the Colorado River.
- 144 square miles - Total square miles in this watershed; Pack Creek, Mill Creek, and Grandstaff Canyon.
- 18 square miles - Total square miles of Moab-Spanish Valley.
- 360 feet - Maximum thickness of alluvium in Moab-Spanish Valley.
- 8 inches - Annual average precipitation at City of Moab.
- 13 inches - Annual average precipitation for upper Spanish Valley.
- 35 inches - Annual average precipitation on the peaks of the La Sal Mountains (not precisely known).
- 5,401 acre-feet - total water rights for City of Moab
- 3,940 acre-feet - total water rights of Grand County Water and Sewer Service District.
- 500 acre-feet - total water rights of San Juan Spanish Valley Special Service District.
- 1,783 acre-feet - total water rights for Moab Irrigation Company.

LIVING RIVERS, COLORADO RIVERKEEPER AND CANYONLANDS WATERSHED COUNCIL

- The above non-governmental organizations invested \$9,000 for the peer review process of the groundwater study completed in 2020 by the US Geological Survey.
- Since 2021, these organizations also invested about \$10,000 for water monitoring equipment: (1) a surface water gage on Upper Pack Creek; (2) two instruments that monitor the water table at wells located at Kayenta Heights.

UTAH STATE UNIVERSITY

- August, 2022 - [A Plain Language Review: The Groundwater Science of Moab-Spanish Valley; 1971 to 2022](#). Professor Thomas Lachmar & [Curriculum Vitae](#).

- October, 2022 - [Interview with Professor Lachmar with Moab Science](#). Kristina Young.
- January, 2023 - [Moab Sun News](#). Moab Science.
- January, 2023 - [Professor Lachmar's powerpoint presentation to Moab Area Watershed Partnership on January 18, 2023](#).
- January, 2023 - [KZMU News](#). Molly Marcello.

UNIVERSITY OF UTAH

- 2021 - [The Importance of Pre-compact Water Rights in the Climate Change Era of Colorado River Water Planning](#). Hagen.
- 2019 - [Spanish Valley/Moab Drought and Climate Workshop Report: Vulnerability, Consequences, and Adaptation Planning Scenarios \(VCAPS\)](#). Western Climate Assessment & Environmental Dispute Resolution Program at UofU Salt Lake City (Wallace Stegner Center).

THE FORMATIVE HYDROGEOLOGY REPORTS

Sumison Report

- 1971 - [Geology and water resources of the Spanish Valley area, Grand and San Juan Counties, Utah](#). US Geological Survey. Sumison.

Eychaner Report

- 1977 - [A digital model of ground-water flow in Spanish Valley, Grand and San Juan Counties, Utah](#). US Geological Survey. Eychaner.

Blanchard Report

- 1990 - [Ground-water conditions in the Grand County area, Utah, with emphasis on the Mill Creek-Spanish Valley area](#). US Geological Survey. Blanchard.

Eisinger Report

- 1999 - [A summary of the ground-water resources and geohydrology of Grand County, Utah](#). Utah Geological Survey. Eisinger et al.

Lowe Report

- 2007 - [The Hydrogeology of Moab-Spanish Valley, Grand and San Juan Counties, Utah, with emphasis on maps for water-resource management and land-use planning](#). Utah Geological Survey. Lowe et al. [Plates 1-12](#). [Septic recommendation map](#).
-

GROUNDWATER AVAILABILITY REPORTS

Moab-Spanish Valley

- 2001 - [Groundwater Availability in Spanish Valley](#). Kovacs and Downs.

USGS 2019 HYDROGEOLOGY ASSESSMENTS

- [USGS Study of 2019](#): summary, report and maps combined.
- Academic Journal Review: [2020 - Rethinking Groundwater Flow System Using Multiple Tracer Geochemical Approach: Case Study Moab-Spanish Valley](#). Gardner.
- University of Utah and USGS - [Suggestions for Groundwater Monitoring for Moab-Spanish Valley](#). Gardner and Solomon.
- Graphic: [The flow of groundwater](#). USGS.
- 2023 - [USGS Monitoring Report](#)

MOAB CITY HYDROLOGIC ASSESSMENTS

Hydrologic And Hydrogeologic Assessment (HESA)* of the surface water and groundwater resources affecting the Moab City Springs and Wells & surface water of Mill Creek and Pack Creek in Moab-Spanish Valley in Grand County and San Juan County. By Hydrologic Systems Analysis, & Heath Hydrology, contractors for Moab City.

* HESA - Hydrological and Environmental Systems Analysis involves the management, processing and interpretation of huge amounts of geoscientific as well as ecological and historical data of many different types and sources, which can only be handled coherently and efficiently by using interactive Geoscientific Information Systems (GIS).

- Phase One: [2018 - HESA-based hydrologic and environmental system analysis and conceptual models](#)
- Phase Two: [2019 - Preliminary HESA-based water budget and aquifer storage evaluation](#)
- Phase Three: [2020 - Proposed Updated Drinking Water Source Protection Zone Delineations & Proposed Monitoring Plan](#)
- Phase Four: [2020 - Preliminary HESA-based water budget aquifer storage evaluation Spanish Valley and Mill Creek/ Pack Creek hydrologic systems](#)

UTAH DIVISION OF WATER RIGHTS (UDWRi)

- 2019 - [Presentation: Groundwater Monitoring North Moab-Spanish Valley](#)
- 2020, January - [Presentation: Groundwater Monitoring Central Moab-Spanish Valley](#)
- 2020, July - [Presentation: Groundwater Monitoring South Moab-Spanish Valley](#)
- 2020, November - [Current Water Rights Policy for Moab- Spanish Valley](#)
- 2014, April - [Moab-Spanish Valley Presentation for Groundwaer Monitoring Program](#)
- **Note:** Court Decree for Water Right Adjudications are pending

CLIMATE ASSESSMENT & CLIMATE ADAPTATION

- [2010 - Forest and Water Climate Adaptation: A Case Study of Moab and Castle Valley, Utah](#). CWC.
- 2019 - Spanish Valley/Moab Drought and Climate Workshop Report: Vulnerability, Consequences, and Adaptation Planning Scenarios (VCAPS).

Western Climate Assessment at CU Boulder (NOAA) & Environmental Dispute Resolution Program at UofU Salt Lake City (Wallace Stegner Center).

MATHESON WETLAND AND PRESERVE

- [2003 Investigation of the Hydrologic Connection between the Moab Mill Tailings and the Matheson Wetland Preserve](#). Gardner and Solomon.
- [2004 - Ecohydrology in Colorado River Riparian Forest](#). Pataki.
- [2004 - Environmental Tracer Investigation Matheson Preserve Moab](#). Gardner.
- [2004 - Evaporation Water Budget Matheson Preserve Moab](#). Crowley.

Public Presentations about Matheson Wetland Preserve

- [2004 - Powerpoint Presentation: Hydrologic Evaluation Matheson Wetland Preserve](#). University of Utah.
- [2004 - Notes: Hydrologic Investigation Scott Matheson Wetland Preserve Moab](#). University of Utah.

JOHNSONS UP ON TOP REPORTS

- [2001 - Hydrogeology Report of Johnson's-Up-On-Top Mesa](#).
- [2001- Reconnaissance study of age and recharge temperature of groundwater near Moab, Utah](#). University of Utah. Kip Solomon.
- [2004 - Analysis by Lance Christie of Solomon & Gardner Report](#)
- A Look at Johnson's Up On Top. Grand County Citizens for Clean Water.

MOAB'S SOLE-SOURCE AQUIFER PROTECTION PLAN

- [Geologic Data](#)
- [Color Map](#)
- [Legend: Color Map](#)
- 2001 - [Drinking Water Source Protection Plan](#)
- 2001 - [Drinking Water Source Protection Plan](#)
- 2001 - [Skakel Springs Drinking Water Source Protection Plan](#)
- 2002 - [Drinking Water Source Protection Plan](#)
- 2008 - [Letter to Moab City](#) regarding development on aquifer recharge zones. EPA.

REGIONAL HYDROGEOLOGY REPORTS

- [1983 - Reconnaissance of Geohydrology in Moab & Monticello, Western Paradox Basin in Grand & San Juan County Utah](#). Weir.
-
- 1991 - [Geohydrology of Mesozoic rocks in the upper Colorado River basin in Arizona, Colorado, New Mexico, Utah and Wyoming, excluding the San Juan basin](#). US Geological Survey. Freethy et al.
- 2009 - [Simulation of Ground-Water Flow and Solute Transport in the Glen Canyon Aquifer, East-Central Utah](#). Freethy.

REPORTS OF SPECIAL INTEREST REPORT

- 1994 - [Solution-collapse Breccia Pipes Moab & Spanish Valley](#). USGS.
- [2004 - Ground-water quality classification and recommended septic tank soil-absorption-system density maps, Castle Valley, Grand County, Utah](#). Lowe, USG. (Plates)
- 2008 - [Ground-water sensitivity and vulnerability to pesticides, Moab-Spanish Valley, Grand and San Juan Counties, Utah](#). Lowe, USG. (Plates included).
- 2012 - [Review of the Hydrogeology of the Spanish Valley Area, and Effects on Water Levels from Proposed Groundwater Withdrawals at BLM Water Right Sites](#). USGS

CASTLE VALLEY REPORTS

- 1996 - [Recharge area and water quality of the valley-fill aquifer Castle Valley, Grand County](#). UGS.
- 2016 - [Hydrologic Assessment of Surface and Water Resources in Castle Valley, UT: Analysis and Water Budget; Final Report Phase 1](#). Kolm.
- [Draft: Castle Valley Groundwater Modeling](#). Downs.
- [Final Castle Valley Groundwater Modeling](#). Downs.

HYDROLOGY

- [Water Supply Papers for Utah](#)
- [1946 - Cloudburst floods in Utah](#). Woolley. US Geological Survey.
- [2004 - Initial-Phase Investigation of Multi-Dimensional Streamflow Simulations in the Colorado River, Moab Valley, Grand County, Utah](#). Terry A. Kenney. US Geological Survey.
- [2006 - The Moab Mill Project](#). A technical report toward reclaiming uranium mill tailings along the Colorado River in Grand County, Utah. Living Rivers.
- Click [here](#) for more hydrology reports

MAPS

- 1997 - [Map of recharge areas for the Glen Canyon and valley-fill aquifers, Spanish Valley area, Grand and San Juan Counties, Utah](#). US Geological Survey. Steiger et al.
- [2002 - Geologic Map of Moab-Spanish Valley](#). Doelling.
- 2007 - [Aquifer recharge map \(USG\) & alternative version \(USGS\)](#).
- [Septic tank recommendation map](#)
- [Map: Locations of Moab aquifers and oil & gas parcels](#)
- [Publications and maps from US Geological Survey](#)
- [Publications and maps from US Geological Survey](#)

OTHER GLEN CANYON GROUP HYDROGEOLOGY REPORTS

- 2000 - [Geohydrology and numerical simulation of ground-water flow in the central Virgin River basin of Iron and Washington Counties, Utah](#). (aquifers in Navajo Sandstone). US Geological Survey. Heilweil et al.

SOILS

- [Canyonlands Soil Survey](#)

GEOLOGIC HAZARDS

- [1992 - Soil and Rock Causing Engineering Problems in Utah](#). UGS.
- [2003 - Geologic Hazards of Moab-Spanish Valley. Plate 01; Plate 02; Plate 03; Plate 04](#). UGS.

HELPFUL WEBSITES

- [USGS groundwater monitoring in Grand County](#)
- Please see the following [website](#) for Moab area ground water geologic information.
- [Managing aquifer recharge](#) in order to minimize ground water decline.
- [Website](#) with considerable information on ground water conditions in Utah.
- An on-line copy of the publication [Ground Water Conditions in Utah](#), Spring of 2009. This publication is re-published annually.
- [Graphs of ground water movement](#) over time in the Moab area. Maps showing the well locations are included.
- Utah office of the U. S. Geological Survey for [specific well monitoring data](#).
- [Ground-water source protection user's guide](#). Utah Division of Water Quality.
- [Publications and maps from Utah Geologic Survey](#)
- [Utah Geologic Survey publication search engine](#)
- [Geology of Canyonlands National Park](#)
- [Publications and maps from Utah Geologic Survey](#)
- [Utah Geologic Survey publication search engine](#)
- [Geology of Canyonlands National Park](#)

BIBLIOGRAPHIES

- [Uinta Basin](#)

PRESENTATIONS

- **Presentation:** A Zoom Meeting with John Weisheit with Q & A - [The Future of Water in Moab-Spanish Valley](#). MP4 file.
-

American Potash seeks operations in Grand County, Utah

NOVEMBER 21, 2023
BY JOHN S. WEISHEIT

YES! Canyonlands Watershed Council is a charitable organization.

- PayPal - [HERE](#)
- Venmo - [HERE](#)
- Our EIN is: 87-0637713

All comments must be submitted by

- 11:59 p.m. MST on Dec. 18, 2023
- BLM Moab Field Office, Attn: American Potash Green River Project, 82 East Dogwood Moab, Utah 84532
- Email: BLM_UT_MB_Comments@blm.gov,
- Subject: American Potash Green River Project

Documents of the Administrative Record

- [Archive from BLM E-Planning website for American Potash Environmental Assessment](#)
- [2023 - Environmental Assessment: American Potash Green River Potash Project](#)
- [2022 - Revised proposal for exploration by American Potash \(Sweetwater LLC\)](#)
- [2021 - Change of contact info for American Potash project managers](#)

Press Release by Bureau of Land Management

The Bureau of Land Management (BLM) Moab Field Office seeks public input during a 30-day comment period on the [American Potash LLC Green River Potash Project Environmental Assessment](#). The environmental assessment analyzes a proposal from American Potash LLC to drill four exploratory wells on federal lands in Grand County, Utah, to obtain geologic data about potentially valuable potash deposits and other associated mineral salts. The proposed wells are located approximately 27 miles southeast of Green River, Utah, and 21 miles northwest of Moab, Utah.

“The BLM manages lands for multiple use and sustained yield, providing opportunities for responsible mineral and energy development,” said Moab Field Manager Dave Pals. “The public can help inform these multiple uses by providing detailed comments on

environmental analyses for proposals such as this one. We appreciate input and feedback to improve this analysis and help inform the decision for this project.”

Interested members of the public, local governments, Tribal Nations, organizations and other stakeholders are encouraged to provide written comments during this comment period to help refine the environmental analysis and clarify issues.

Written comments may be hand delivered, mailed, emailed or submitted through ePlanning. Please reference “American Potash Green River Project” when submitting comments. All comments must be submitted by 11:59 p.m. MST on Dec. 18, 2023, to be considered.

- ePlanning: <https://eplanning.blm.gov/eplanning-ui/project/2018582/510>
- Mail or hand delivery: BLM Moab Field Office, Attn: American Potash Green River Project, 82 East Dogwood Moab, Utah 84532
- Email: BLM_UT_MB_Comments@blm.gov, Subject: American Potash Green River Project

Before including an address, phone number, email address or other personally identifiable information in any comments, be aware the entire comment, including personal identifying information, may be made publicly available at any time. Requests to withhold personal identifying information from public review can be submitted, but the BLM cannot guarantee it will be able to do so.

The proposed wells are located within the Red Wash Potash Leasing Area, as designated by the 2016 Moab Master Leasing Plan. The Master Leasing Plan applies stringent reclamation requirements and sets limits on surface-disturbing activities. If approved, the drilling would be completed within two years, and the resulting holes would be plugged and abandoned with the disturbed area being reclaimed. Potash is frequently used in fertilizers to help support agricultural production.

TALKING POINTS

- Two months ago, the BLM finalized a travel plan that took much-needed steps to protect Labyrinth Canyon’s quiet soundscapes and stunning scenery. This proposal – affecting that very same landscape – would undo that progress and could serve as the beginning of large-scale, industrial development of the area.
- Exploratory drilling alone would consume millions of gallons of Colorado River water—water that is simply not available due to the decades-long drought brought on by the climate crisis that has driven river levels to historic lows.
- Does not adversely impact the Labyrinth Canyon area, including lands with wilderness characteristics (proposed by the public and/or identified by BLM).
- Avoids important wildlife habitat including for bighorn sheep.
- Does not impact the area’s outstanding opportunities for quiet recreation.
- The four well pads and access roads will disturb 17 acres (of course, significantly more surface disturbance will occur if/when the project moves beyond this initial).

- The project is within a “Known Potash Leasing Area” or KPLA. The KPLA was created by the 2016 Moab Master Leasing Plan. The KPLA designation means that the area is available for potash leasing and development and that it has a preference over oil-gas development, but this fact does not mean that extractive development is a foregone conclusion or that it takes precedence over other BLM uses for the land (conservation, recreation, etc.)
 - The BLM’s draft environmental assessment (EA) explains that each well will use 4 million gallons of water to drill (16 million gallons total) – this is just for drilling the core holes. The amount of water that would be used if this project actually goes to full development is staggering – for example, the Intrepid Potash mine uses 350 million gallons per year of Colorado River water.
 - Potash is not a “critical” mineral. This Federal Register page contains the most recent list of minerals deemed to be “critical” by the Federal government. The 2021 proposed draft of this list explains in more detail why potash and phosphate are not included.
 - The A1 Lithium project, which proposes drilling lithium test wells (not full development), will use 24,190 gallons of water for drilling operations. While not an insignificant amount of water, it is fairly modest when compared to other extraction schemes. See A1 Lithium EA at p. 36.
 - For oil and gas the Moab Master Leasing Plan (MLP) states: “the water needs of oil and gas are far less than potash development.” It then explains that a typical oil-gas well “drilled to the primary target formation would involve about 294,000 gallons of water.” See MLP Chapter 4 at p. 4-136.
 - In contrast, this proposal (American Potash EA) states that the drilling of each well will consume 2.9 to 3.7 million gallons of water. See American Potash EA at p. 44). With four exploratory wells, that’s a total of 11.6 to 14.8 million gallons of water.
 - Additionally, regarding potash, the Moab MLP explains that “[w]ater consumption associated with solar evaporation processing operations is estimated at 5,000 gallons per ton of potash production for a total of about 2 billion gallons per year.”(MLP at 4-51). So, while the drilling of the test wells appears to have a significantly higher water consumption than other extractive projects, the second stage--evaporation ponds--is where the water use is truly staggering.
 - **NOTE:** the 2 billion gallons is for the entire MLP planning area, not just this one project. the American Potash EA explains that the Intrepid Potash mine uses 350 million gallons per year of Colorado River water.
-

Echo Canyon Municipality, Kane Creek Preservation and Development Project at Kings Bottom

FEBRUARY 12, 2024

BY JOHN S. WEISHEIT



Kings Bottom. Satellite imagery by Google Earth.

More about the photo above: Kings Bottom is an attachment bar, which are created by large eddies during large flood events; expansion bar is actually the better word. When the next large flood arrives, there will be slope failures, and/or infrastructure will be crushed by all the driftwood and woody debris entrained within the flood flow and the recirculating eddy. When the flood recedes, the entire bottom will be replaced by an entirely new and different attachment bar, which may be larger, smaller, or become an island, or disappear altogether.

- [Video of damage to homes on the floodplain of the Virgin River and its tributaries in 2005.](#)

In other words, in a river corridor, terminal eviction eventually happens to every property owner, including the Bureau of Reclamation, the ultimate dam builder.

It is not wise to dismiss the natural movements and pulses of Nature's water cycle. Consider that the Colorado River has already eroded half the total volume of the Colorado Plateau's massive rock formations that are either volcanic, metamorphic, or sedimentary (marine and continental).

Consider too, that the geologic history of the Colorado River is a classic "fill and spill" basin. An incredibly vibrant river system that, in geologic time, just recently reached the ocean. This river is still young, in that it has yet to accomplish filling the last structural depression with detritus from the Colorado Plateau and the Rocky Mountains. This depression is below sea level and known as the Salton Sink in southern California and northern Mexico.

- [Cenozoic Geology of the Colorado Plateau](#). Charles Butler Hunt.
- Note: this professional paper was written in 1956. It is still the most referenced geology paper ever written about the Colorado Plateau.

YES! Canyonlands Watershed Council is a charitable organization.

- PayPal - [HERE](#)
- Venmo - [HERE](#)
- Our EIN is: 87-0637713
- Friends of the Abajos doing business as Canyonlands Watershed Council.

DEVELOPERS - CONTACT INFORMATION

Kane Creek Preservation and Development, LLC

- **eMail:** info@kanecreekmoab.com
- **Partners:** Craig Weston, Tom Gottlieb & Trent Arnold
- **Website:** does not yet exist
- **Civil Engineer:** Jeff Pillus; jeffp@setengineering.com
- **Attorney:** J. Craig Smith; jcsmith@shutah.law

DOCUMENTS

- [Securities and Exchange Commission Document for Kane Creek LLC](#)
- [Request To Grand County For Sanitary Sewer Service](#)
- [Application for sewer service by Kane Spring Improvement District](#)

KANE SPRING IMPROVEMENT DISTRICT BOARD MEETINGS

- Contact info: kanespringsimprovementdistrict@gmail.com
- [Website](#)
- [Application for sewer service by Kane Spring Improvement District](#)

- June 14, 2023 - [Agenda of first meeting](#)
- June 14, 2023 - [Audio recording of first meeting](#)
- September 05, 2023 - [Minutes](#)
- February 23, 2024 - [Minutes](#)

GRAPHICS

- 1997 to 2023 - [Satellite imagery above Kings Bottom](#). Google Earth.
- January 2024 - [Mechanical excavation on the perched benches layered with Pleistocene river gravels above Kings Bottom](#).
- **Note:** The total volume of excavated fill material is estimated to be 827,000 cubic yards (51,688 truck loads).

PERMIT FOR SEWAGE TREATMENT FACILITY

PUBLIC ANNOUNCEMENT: There is a public meeting on August 3, 2023 at the Grand Center that begins at 6pm. This hearing is about a permit application to construct an independent, on site sewage treatment plant at King's Bottom along Kane Creek Road and the Colorado River.

The developer is Kane Creek Preservation and Development, LLC (KCPD)

- [Application for sewer service by Kane Spring Improvement District](#)
- [DWQ's Website for permit application for KCPD](#)
- [Approval of discharge permit for KCPD's minor municipal sewage treatment plant](#). DWQ.

The extended comment period closes August 4th, 2023

AGENDA: From Utah Department of Water Quality (DWQ); the agency contact person is [Jeff Studenka](#)

- Open House for Discharge Permit Application for Utah Pollution Discharge Elimination System (UPDES) (sewage processing facility) for Kane Creek Development and Preservation, LLC.
- Informational session begins at 6:00 pm
- Hearing from 6:30 pm to 8:00 pm on August 3, 2023
- Grand Center, Main Hall
- 182 N 500 W Moab, UT 84532
- [Public Presentation by DWQ of Jeff Studenka at Moab on August 3, 2023](#).
- [Recording of Public Hearing](#). Note: This recording was not edited and the proceedings do not begin until minute 53.

DOCUMENTS

- [Application for sewer service through Kane Spring Improvement District](#)
- [Public Notice and Public Hearing for KCPD sewage treatment plant](#). DWQ.

- [Fact Sheet for sewage treatment plant](#). DWQ.
- [Feasibility study for water supply and wastewater treatment](#). Anderson Engineering. (includes brief development plans)
- [Spreadsheets of data and notes for sewage treatment plant](#). xlsx file.
- [Wasteload Analysis](#). Shope.

TALKING POINTS ABOUT THE SEWAGE TREATMENT PLANT

- Kane Creek Road and King's Bottom are below the 100-year flood zone (156,440 cubic feet per second. See: Year 2014 calibration table in the Flood Hazard Section, above).
- King's Bottom is an attachment bar, which are created by large eddies during large flood events. When the next large flood arrives, there will be slope failures at King's Bottom, and/or infrastructure will be crushed by all the driftwood and woody debris entrained within the flood flow and the recirculating eddy. When the flood recedes, the entire bottom will be replaced by an entirely new and different attachment bar, which may be larger, smaller, or become an island, or disappear altogether.
- This is a preliminary discussion based on public information that is limited, or withheld. At some point a request for information will be provided via GRAMA Request (See Administrative Documents section above).
- In the floodplain (below the 100-year level) of the Colorado River, roads and residential homes will be constructed.
- The last 100-year flood occurred in 1862; that event was an atmospheric river from the Pacific Ocean that lasted 43-days. A near 100-year flood occurred in 1884. Several large floods occurred in a pluvial between 1905 to 1921. Flood frequency and flood magnitude is expected to increase because our warming atmosphere can hold more water vapor.
- The development will require flood insurance and the premiums will be high. This insurance will be federal flood insurance (FEMA).
- Before housing can be developed, it is obvious that a traffic plan to handle increased traffic will be necessary, for vehicles hauling heavy payloads, and for first responder vehicles.
- It is obvious that the utility corridor will have to be improved, which includes the installation of fire hydrants and a storage tank for the water.
- There will be amenities in the floodplain of the Colorado River. We assume this include eateries, hotels, rentals, and other commercial enterprises.

ANNOUNCEMENT: October 11, 2023 - FINAL Decision of Department of Water Quality regarding complain by citizens and the subsequent public hearing on June 14th.

SUMMARY - What was approved is the sewage treatment facility of the proposed development. It has been determined that "Permit coverage under the UPDES Construction General Storm Water Permit is required, however, for any construction at

the facility which disturbs an acre or more or is part of a common plan of development or sale that is an acre or greater."

Further information regarding storm water permit requirements can be found at <http://stormwater.utah.gov>.

COMMENT LETTER

- [Living Rivers to Utah Division of Water Quality about Kane Creek Development](#)

PUBLIC HEARING DOCUMENTS

- [Decision Reference Email](#). DWQ.
- [Public Comments Responsiveness Summary](#). DWQ.
- [Moab Public Hearing Comments Regarding Kane Creek UPDES 2023 Permit](#). DWQ.
- [Kane Creek Preservation And Development UPDES Permit](#). DWQ.

APPEAL PROCESS

- The procedures for appealing a permit decision can be found under Utah Code § 19-1-301.5 and Utah Admin. Code R305-7-104(5) and R305-7-203.

UPDATE ON UPDES CONSTRUCTION PERMIT

Construction approved by Utah Department of Environmental Quality, which issued a Utah Pollution Discharge Elimination System (UPDES) Permit to Kane Creek Preservation and Development, LLC (KCPD) will begin on December 4, 2023.

Citizens requested a public presentation about this permit, which was granted, and as follows

ANNOUNCEMENT from Utah Department of Water Quality.

- Public Meeting
- Monday, November 27, 2023
- Virtual Meeting Time: 6:00-7:00 PM
- Staff presentation: 6:00-6:20 PM
- Questions: 6:20-7:00 PM

Zoom credentials:

- <https://utah-gov.zoom.us/j/82526987466?pwd=Zy9WWUFXdXITR0JXMTR2NjIFVtBxZz09#success> HEARING
- ID: 825 2698 7466
- Passcode: gOfR^Y4t

Information

- Permit: UPDES Construction General Permit, Permit Number UTRC0000
- Agency: Utah Department of Environmental Quality, Division of Water Quality

In compliance with the Americans with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact the Utah State Accessibility website at <https://www.utah.gov/accessibility.html>

Echo Canyon Municipality, Kings Bottoms & Kane Creek Preservation and Development LLC and the FLOOD HISTORY OF THE COLORADO RIVER

FEBRUARY 13, 2024

BY JOHN S. WEISHEIT

COLORADO RIVER FLOODS & CLOUDBURST HAZARDS

Discussion about the "100-Year Flood"

- **Read:** [US Geological Survey Discussion](#)
- Defining a 100-year flood is related to general acceptable policies for government agencies and insurance providers. This is a statistical analysis, which is obviously acceptable to governing agencies, as long as it is also understood that this standard is the minimalist approach. See: [Initial-Phase Investigation of Multi-Dimensional Streamflow Simulations in the Colorado River, Moab Valley, Grand County, Utah, 2004](#). Kenney, USGS.
- An empirical study is letting Nature speak for itself. Nature is random, unpredictable, and extreme. For example, the 20th century was the wettest century in the last 2000-years, according to calibrated tree-ring data. Yet, the Colorado River in the 20th century did not have a single 100-year flood event, whether statistical or empirical.
- Whereas the 19th century had many serious flood events related to an atmospheric river event and volcanic eruptions in the South Pacific.
- Paleoflood hydrology is the science that provides empirical data about the frequency and magnitude of prehistoric flood events.
- Science Moab Interview with Professor Vic Baker ([listen](#)).
- Identifying flood indicators in nature: [Historical and Paleoflood Analyses for Probabilistic Flood-Hazard Assessments: Approaches and Review Guidelines](#). Harden.
- This data in real time was recently calibrated for the Colorado River Basin above the confluence with the Green River, and as follows:
- **A 100-year flood** would have a peak discharge ranging from 156,440 to 179,050 cfs. Thirty-four such floods have happened in the last 2,000 years.
- **A 500-year flood** would have a peak discharge ranging from 224,780 to 265,570 cfs. Twenty such floods have happened in the last 2,000 years.
- **A 1000-year flood** would have a peak discharge ranging from 256,740 to 310,770 cfs. Four such floods have happened in the last 2,000 years.
- Source: [A 2000 year natural record of magnitudes and frequencies for the largest Upper Colorado River floods near Moab, Utah](#). Noam Greenbaum, Tessa M. Harden, Victor R. Baker, John Weisheit, Michael L. Cline, Naomi Porat, Rafi Halevi, and John Dohrenwend; 2014.

TABLE: The data results of statistical floods and emperical floods

2000 years of flood history: Upper Colorado River floods near Moab, Utah

DATA Statistical Vs Empirical	100 year	Number of Floods	500 year	Number of Floods	1,000 year	Number of Floods	Probable Maximum Flood
Statistical Data Kenney (2004, USGS)							
In cubic meters per second	2,765	?	3,400	?	?	?	8,500
In cubic feet per second	97,645	?	120,070	?	?	?	300,175
Empirical Data Greenbaum, et al. (2014, Univ. of Arizona)							
Cubic meters per second (at average ranges)	4,670	34	6,675	20	7,680	5	9,200
Cubic feet per second (at average ranges)	164,920	34	235,725	20	271,217	5	324,895
Volume in 24 hours	327,112 acre-feet		467,554 acre-feet		537,950 acre-feet		644,419 acre-feet

FLOOD SCIENCE

- [CLICK HERE FOR A PRESENTATION](#) about flood hazards at Kings Bottom by John Weisheit, conservation director of Living Rivers & Colorado Riverkeeper. **Note:** this presentation was shared with the developer, engineer, attorney and our administrative agencies and elected officials.
- [CLICK HERE TO LISTEN](#) to Professor Victor Baker about paeleoflood hydrology. Science Moab, KZMU Community Radio.
- Read about the hundreds of paleoflood reports at this [website](#).
-

FEMA FLOODPLAIN MAPS

- [FEMA website for flood zones in Grand County, Utah](#)

GRAPHICS

- [May 25, 2023 - Kane Creek South End Snow Melt Flooding at 37,000 cubic feet per second. jpg.](#)

DISCUSSION OF DEVELOPMENT BELOW THE 100-YEAR FLOOD ZONE

- **Phase 1, 2, 3, 4, & 5** is in Area 1
 - Area 1 is between the Colorado River and Kane Creek Road.
 - **Phase 6** is in Area 4
 - Area 4 is between the Colorado River and Kane Creek Road.
 - **Phase 7** is in Area 5
 - Area 5 is between Kane Creek Road and bedrock.
 - **Phase 8** is in Area 2
 - Area 2 is between Colorado River and Kane Creek Road.
 - **Phase 9** is in Area 6
 - Area 6 is between Colorado River and Kane Creek Road.
 - **Source:** FEMA Maps and Anderson Engineering (see document section above).
 - [Kane Creek PD Plat Map. jpg.](#)
-

Echo Canyon Municipality and Kane Creek Preservation and Development, LLC.

ENFORCEMENT OF LAND USE CODES

FEBRUARY 14, 2024
BY JOHN S. WEISHEIT

A CHRONOLOGY OF DOCUMENTS FOR Kane Creek Preservation & Development, LLC

- **As of February, 2024**

Website and updates: [Document archive from Grand County Administration](#)

Narrative: The zoning for the subject property is currently under review with the Planning & Zoning Department and the County Attorney, as the legal description from Ordinance RD 229 does not match the GIS zoning map, which is not an official zoning map, but is used for general reference. Grand County admin is currently working to locate an official zoning map on file with the County Recorder's office.

Open Records Request via GRAMA (Government Records Access and Management Act)

- Website: [to file a GRAMA request in Grand County](#)

YEAR 1992 - A zoning variance for a private campground

- July, 1992 - [Grand County Planning Commission Minutes for Nelson Rezone Application](#)
- May 4, 1992 - [Ordinance 229 Meeting Minutes](#)
- June 22, 1992 - [Grand County Commission Minutes for Public Hearing about Nelson Rezone](#)
- July 06, 1992 - [Grand County Commission Minutes and Ordinance Approval](#)
- July 6, 1992 - [Grand County Ordinance 229](#)
- January 19, 2024 - MAP: Ordinance 229

YEAR 2009 - Federal Flood Insurance Study for Grand County

- April 2, 2009 - [Flood Insurance Study for Grand County](#). FEMA.

YEAR 2018 - Kings Bottom is purchased by developers

- January 4, 2018 - [Wetland Delineation Study](#). Intermountain Ecosystems.

- January 19, 2018 - [Threatened and Endangered Compliance for Kane Creek Project](#). Alm and Assoc.

YEAR 2019

- January 2019 - [Aquatic Resources Delineation Report](#). SME Environmental Consultants.

YEAR 2020 - A site plan by the developers for a campground

- January 1, 2020 - [Kane Springs Campground Overall Site Plan](#).
- February 12, 2020 - [Memo Structural Fill Recommendations](#). GeoStrata.
- April 2, 2020 - [Kane Springs Letter of Map Revision \(LOMR\)](#). FEMA.
- April 3, 2020 - [Flood Insurance Study for Grand County](#). FEMA.
- April, 2020 - [Cultural Resource Inventory Kane Creek Campground](#). Stratified Environmental & Archaeological Services.
- June 3, 2020 - [Preliminary Jurisdictional Determination](#). ACOE.
- 2020.07.29. - [Kane Springs Campground Mass Grading](#). SET Engineering.
- August 24, 2020 - [Stormwater Pollution Prevention Plan](#). Harrison Field Services.
- August 26, 2020 - [Kane Springs Campground Mass Grading Exhibit](#). SET Engineering.
- August 27, 2020 - [Notice of Intent for Stormwater Discharge](#). UDEQ.
- September 01, 2020 - [Stream Alteration Permit Application](#). ACOE.
- September 4, 2020 - [Stream Alteration Permit Receipt](#). UDWR.
- September 9, 2020 - [Grand County Grading Excavation Permit](#). Grand County.
- November 13, 2020 - [Letter of Map Revision: Determination for Grand County](#). FEMA.
- December 11, 2020 - [Floodplain Development Permit Application](#). Grand County.

YEAR 2021

- May 18, 2021 - [Preliminary Traffic Memo](#). SET Engineering.

YEAR 2022

- January 27, 2022 - [Traffic Impact Analysis](#). SET Engineering.
- January 28, 2022 - [Master Plan Under Review](#). KCPD.
- April 27, 2022 - [Memo for Traffic Analysis Comments](#). Horrocks.

YEAR 2023

- January 28, 2023 - [Conceptual Site Master Plan](#). DTJ.
- January 31, 2023 - [Traffic Impact Analysis](#). SET Engineering.

- June 6, 2023 - [Memo for Roadway Improvements](#). Horrocks.
- [ZIP FILE](#)

YEAR 2024

- [Approval of Drinking Water Plan at Well #1 near Pritchett Canyon](#). Safe yield is 40 gallons per minute or 64.5 acre feet per year.

OTHER ADMINISTRATIVE DOCUMENTS

First fulfillment of a GRAMA request to Grand County

- [Download the ZIP file](#)

COUNTY DOCUMENTS

- January 11, 2024 - [Update and History of Kane Creek Development](#) (since 1992). Grand County admin.

PERMITTING - CONTACT INFORMATION

FEMA - Federal Emergency Management Agency

Region 8 Deputy Administrator Katherine Fox
katherine.fox5@fema.dhs.gov

[2009 - Kane Springs Determination Letter](#)

US Fish and Wildlife Service

George Weekley; Deputy Field Office Supervisor
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US Army Corps of Engineers

Samual Bohannon; Regulatory Project Manager
533 West 2600 South; Suite 150
Bountiful, UT. 84010-7744
801-295-8380; Ext. 8313
Samuel.T.Bohannon@usace.army.mil

Utah Department of Water Quality

Discharge Elimination System Permits

<https://deq.utah.gov/division-water-quality>

Jeff Studenka
jstudenka@utah.gov
385-602-7303

Stream Alteration

Price, Utah Region
Daren Rasmussen

Phone: (801) 538-7377

Email: darenrasmussen@utah.gov

Click here to review: Stream Alteration Application No. 20-05-05SA

Utah Sovereign Lands Coordinator

Tony Mancuso

435-210-0362

tmancuso@utah.gov

Sovereign Lands: Colorado and Green River Management Plans

Final documents released on January 6, 2020

- [Public Postcard](#)
- [Record of Decision for Colorado River](#)
- [Record of Decision for Green & Colorado Rivers](#)
- [Comprehensive Management Plan and ROD for Colorado River](#)
- [Mineral Leasing Plan and ROD for Green & Colorado Rivers](#)
- [Comprehensive Management Plan for Colorado River](#)
- [Mineral Leasing Plan for Green & Colorado Rivers](#)

Grand County Building Inspector

William Hulce

125 E Center St.

Moab, UT 84532

435-259-4134

building@grandcountyutah.net

OTHER INTERESTED PARTIES

UMTRA Liaison/Technical Inspector

Moab Uranium Waste Tailings

Jessica Thacker

435-719-2811

jthacker@grandcountyutah.net

Environmental Protection Administration

TBA

The State Historic Preservation Office

State Historic Preservation Officer

Archaeology - Chris Merritt

801-245-7263

ADDITIONAL BASELINE INFORMATION

- 2002 - [Remedial action at Moab uranium mill site: now and long-term](#). National Academy of Sciences.
- 2004 - [Biological Opinion for Moab uranium mill mitigation](#). USFWS.

- Bibliography of ecological resources of the Colorado River near Moab.
-

PRESENTATIONS, NEWS and OPINION about the proposed development project at Echo Canyon Municipality and Kings Bottom above Kane Creek

FEBRUARY 17, 2024
BY JOHN S. WEISHEIT



*Moab Garage Company boat on the Colorado River, 1920s.
courtesy of Utah State Historical Society*

Kings Bottom, mouth of Kane Creek and Williams Bottom

PUBLIC PETITION AGAINST KANE CREEK DEVELOPMENT

- [Petition against Kane Creek Development](#)

THE COMMUNITY ORGANIZERS

Kane Creek Development Watch (KCDW)

- [CLICK HERE - To Donate To KCDW via ZEFFY](#)
- **Fiscal sponsor:** Friends of the Abajos, doing business as Canyonlands Watershed Council
- **Contact the petition organizers:** keepGCgrand@gmail.com
- **Website:** [Kane Creek Development Watch](#)
- **Mission Statement:** Kane Creek Development Watch (KCDW) is a group of dedicated citizens committed to preserving the unique beauty and ecological integrity of the Colorado River corridor near Moab, Utah. Our mission is to safeguard this vital area from a development that poses significant socio-economic and environmental threats to our vibrant local community. Our goal is to secure the land back from the developers and ensure its protection for future generations.
- [DONATE TO KCDW via ZEFFY](#)

RADIO INTERVIEWS

- February 22, 2024 - [Utah Public Radio](#). By Tom Williams. The guests are: Jon Kovash, Molly Marcello, Sophia Fisher, Laura Long and Bill Love.

PUBLIC COMMENT & LETTERS

- [Grand County website to provide public comments to the commissioners and staff.](#)
- [Link to the Zoom Meetings of the County Commissioners.](#)
- [Comment letter by Living Rivers to Utah Division of Water Quality about Kane Creek Development](#)
- **Citizens to be Heard:** County Commission Meeting of January 16, 2024 - [Meeting begins at 1 hour, 3 minutes and 50 seconds](#)). You Tube.
- [Click here for a presentation](#) about flood hazards at Kings Bottom by John Weisheit, conservation director of Living Rivers & Colorado Riverkeeper. **Note:** this presentation was shared with the developer, engineer, attorney and our administrative agencies and elected officials.

OPINIONS AND LETTERS TO THE EDITOR (OpEds & LTTEs)

- May 13, 2026 - [Echo Canyon Project Still Faces Major Hurdles](#). By Dave Closser for the Moab Times-Independent.
- April 08, 2026 - [The True Spirit Of Moab](#). By Dave Closser for Moab Times Independent.
- April 08, 2026 - [Echo Canyon: Saying Vs Doing](#). By Jerry Shue for Moab Sun News.
- April 01, 2026 - [Echo Canyon: Building a community that reflects the spirit of Moab](#). By Craig Weston for Moab Times Independent.

- December 31, 2025 - [Echo Canyon: A breakdown in buyer protections](#). By Dave Closser for Moab Times-Independent.
- October 22, 2025 - [Craig Weston's Echo Canyon Legacy--Buyer Beware!](#) By Jerry Shue for Moab Times-Independent.
- October 01, 2025 - [Kane Creek/Echo Canyon Development Lots For Sale](#). By Dave Closser for Moab Times-Independent.
- August 08, 2025 - [Kane Creek/Echo Canyon Development Update](#). By Dave Closser for Moab Times-Independent.
- June 11, 2025 - [Echo Canyons \(Kane Creek\) impending traffic crises ahead](#). By Dave Closser for Moab Times-Independent.
- June 6, 2024 - [Controversial Kane Creek developer quietly makes major donations in AGs race](#). By Eric Peterson for Moab Sun News.
- May 28, 2024 - [What could go wrong?](#) By Jerry Shue for Moab Times-Independent.
- May 14, 2024 - [General Plans are more than a wish list, they are the law](#). By Alison Simon for Moab Times Independent.
- May 14, 2024 - [Former Commissioner: New groups to Moab were here in the 90s](#). By Sam Cunningham For Moab Times Independent.
- May 9, 2024 - [Actually setting the record straight on Kane Creek](#). By Laura Long For Moab Times-Independent.
- May 7, 2024 - [Rebuttals to Jackson and KCPDs General Parters](#). By Cody Priano And Paul Lehr for Moab Times-Independent.
- April 30, 2024 - [General partners set the record straight on Kane Creek](#). Trent Arnold et al for Moab Times-Independent.
- April 23, 2024 - [Responses to Lynn Jackson's OpEd](#). Baird, McGann, and Roseme.
- April 16, 2024 - [Don't let emotions drive Kane Creek development decisions](#). By Lynn Jackson for Moab Times-Independent.
- February 20, 2024 - [Kane Creek developers address mining allegations and other issues](#). Arnold, Weston & Gottlieb for Moab Times-Independent.
- February 13, 2024 - [Putting the 1992 Kane Creek Zoning decision in Context](#). Sam Cunningham for Moab Times-Independent.
- February 13, 2024 - [More On The Alleged Unlawful Mining At Kane Creek](#). Tuesday Wright for Moab Times-Independent.
- February 12, 2024 - [Concerns over sand and gravel extraction at Kane Creek Project](#). Kiley Miller for Moab Times-Independent.
- [February 6, 2024 - County is investigating Kane Creek zoning](#). By Sophia Fisher for Moab Tiomes-Independent.
- February 5, 2024 - [Town unites to fight a floodplain development](#). Mary Moran for Writers on the Range.
- January 31, 2024 - [Former County Commissioner: Kane Creek Was Supposed To Be a 10-acre Campground](#). Sam Cunningham for Moab Times-Independent.
- January 23, 2024 - [Please spare Kane Creek](#). Barb Crossan for Moab Times-Independent.
- January 23, 2024 - [It's time to stand up for what Moab deserves](#). Emily Sukiennik for Times-Independent.

- Janaury 23, 2024 - [It's Not Too Late To Shut Down Kane Creek Project](#). Steve Russell for Moab Times-Independent.
- January 17, 2024 - [Sewage concerns, water realities at Kane Creek Development](#). John Gould for Moab Times-Independent.
- January 09, 2024 - [Kane Creek development proposal "is bad, sad idea."](#) Carrie Bailey & Marsha Marshal for Moab Times Independent.
- December, 2023 - [Kane Creek development and Grand County's "adventurous small town spirit."](#) Laura Long for Moab Sun News.
- July 27, 2023 - [The developers at Kings Bottom & Kane Creek Road do not understand the flood history of the Colorado River](#). John Weisheit for Moab Times Independent.
- July 7, 2023 - [Kane Creek development should be opposed](#), Sarah Stock for Moab Sun News.

NEWS

- [March 24, 2025 - The Wild West Showdown Over Developing a Revered Utah Getaway](#). By Jim Carlton for The Wall Street Journal.
- [March 6, 2025 - Hundreds oppose Kane Creek incorporation at public hearing as process moves forward](#). By Andrew Christiansen For Moab Times-Independent.
- [February 18, 2025 - Kane Creek town proposal moves forward, public hearing set](#). By Andrew Christiansen for Moab Times-Independent.
- [December 18, 2024 - Grand County Commission denies Kane Creek Zoning Appeal](#). By Andrew Christiansen for Moab Times-Independent.
- [December 18, 2024 - Grand County Commission denies Kane Creek zoning appeal](#). By Andrew Christiansen For Moab Times-Independent.
- [December 05, 2024 - Watch Group and developers clash over Kane Creek subdivision zoning](#). By Andrew Christiansen for Moab Times-Independent.
- [November 18, 2024 - Over 100 protesters rally against Kane Creek development](#). By Andrew Christiansen for Moab Times-Independent.
- October 22, 2024 - [Speaker Schultz calls for pause on major water bills in 2025](#). By Ben Winslow for Fox 13 News.
- October 7, 2024 - [Kane Creek development secures wastewater permit in appeal hearing](#). By Andrew Christiansen for Moab Times-Independent.
- [June 18, 2024 - Citing improper actions by Winfield, Nassau Resigns](#). By Doug McMurdo for Moab Times-Independent.
- June 6, 2024 - [Controversial Kane Creek developer quietly makes major donations in state Attorney General's Race](#). By Eric Peterson for the The Utah Investigative Journalism Project and Moab Sun News.
- [May 30, 2024 - State shuts down Kane Creek Project water well](#). By Doug McMurdo for Moab Times-Independent.
- May 8, 2024 - [County nixes Kane Creek Developments wastewater permit](#). By Sophia Fisher for Moab Times-Independent.
- April 17, 2024 - [Commission delays vote on Kane Creek Permit](#). By Sophia Fisher for Moab Times-Independent.

- April 1, 2024 - [Four organizations protest Kane Creek water application](#). By Sophia Fisher for Moab Times-Independent.
- March 5, 2024 - [Kane Creek Earthwork Is Legal, County Says](#). By Doug McMurdo for Moab Times-Independent.
- March 5, 2024 - [Legislature grants \\$1M to nonprofit led by Kane Creek developer](#). By Sophia Fisher for Moab Times-Independent.
- February 27, 2024 - [No Consensus On Kane Creek Mining Allegations](#). By Sophia Fisher for Moab Times-Independent.
- February 27, 2024 - [Legislature on track to grant \\$1 Million to Kane Creek developers](#). By Sophia Fisher For Moab Times-Independent.
- February 15, 2024 - [Interview with Jon Kovash: Kane Creek developers wield cash](#). By Molly Marcello for KZMU Community Radio in Moab, UT.
- February 2, 2024 - [Kane Creek development / Moab campground turned into homes near Colorado River](#). Sophia Fisher for Salt Lake Tribune.
- January 26, 2024 - [Mining Monitor, Moab's Kings Bottom Development and Sun Zia lawsuit](#). By Jonathan Thompson for The Land Desk.
- January 23, 2024 - [Uproar over Kane Creek Development Dominates Commission Meeting](#). By Sophia Fisher for Moab Times-Independent.
- June 29, 2023 - [We are honestly trying to be good neighbors](#). By Sophia Fisher for Moab Times-Independent.
- June 14, 2023 - [50 Residents Protest Kane Creek Treatment Plant](#). Sophia Fisher for Moab Times-Independent.
- June 1, 2023 - [Kane Creek Development Pursues Wastewater Plant](#). Sophia Fisher For Moab Times Independent.
- September 08, 2022 - [County opts to keep thumbs on Kane Creek Development](#). By Sophia Fisher for Moab Times-Independent.
- September 08, 2022 - [New special Service District established for Kane Springs](#). By Rachel Fixsen for Moab Sun News.
- August 8, 2022 - [County Opts To Keep Thumbs On Kane Creek Development](#). Sophia Fisher for Moab Times Independent.
- October 29, 2021 - [Kane Creek development leads to evictions: Developers promise community benefit, but first tenants must leave](#). Rachel Fixsen for Moab Sun News.
- October 28, 2021 - [Kane Creek project leaves some residents in the lurch](#). Carter Pape for Moab Times Independent.
- October 28, 2021 - [Kane Creeks future: A research and innovation hub](#). Carter Pape for Moab Times Independent.
- October 28, 2021 - [Kane Creek Project leaves some residents in lurch](#). By Carter Pape for Moab Times-Independent.

RESPONSE TO PUBLIC FROM KCPD, LLC

Full Page Advertisement published January 11, 2024 in Times - Independent

- We are pleased that the developers have publicly confirmed that their project will be constructed in the historic floodplain and that federal flood insurance is required for all home owners and business operators.
 - It is important for buyers and investors to understand that the 100-year flood designation from the federal government is an arbitrary number.
 - In the last 2,000 years, there have been over 34 floods greater than the USGS 100-year flood; over 20 floods greater than the USGS 500-year flood, and 5 floods have exceeded 282,000 cfs, and 2 floods were greater than 349,000 cfs.
 - **REFERENCE:** A 2000 year natural record of magnitudes and frequencies for largest Upper Colorado River floods near Moab, Utah. Greenbaum, 2014.
 - This designation is also a moving target. The elevation of the 100-year floodplain has already increased due to an enlarged data base from new paleoflood studies in the Colorado River Basin.
 - Visit this [flood resource page](#) at On The Colorado.
-

WATER RIGHT CHANGE APPLICATION by Echo Canyon Municipality and Kane Creek Preservation and Development, LLC

MARCH 01, 2024

BY JOHN S. WEISHEIT

NEW INFORMATION

- May 29, 2024 - [Document and photos](#) by Enforcement Engineer of Utah Division of Water Rights and regarding the water right violation by KCPD.
- May 21, 2024 - Response from Kane Creek Preservation and Development LLC, in regards to illegal action: deliberately pumping groundwater without an approved water right. [KCPD's response to this violation](#). Attorney at the law firm of Smith Hartvigsen.
- May 13, 2024 - Acknowledgement of citizen complaint about this water right violation: [Acknowledgement letter from Utah Division of Water Rights / Enforcement Referral](#).

NOTICE TO WATER USERS

Thursday, February 29, 2024; Moab Times-Independent

Change application for Kane Creek Springs Improvement District.

Protest and request for hearing is due on March 27, 2024.

- [Click here](#) to submit your: 1) comment; 2) upload a letter and supporting documents; 3) and to pay the \$15 filing fee.

The applications below were filed with the Division of Water Rights in Grand County. These are informal proceedings per Rule 655-6-2. Protests concerning an application must be legibly written or typed, contain the name and mailing address of the protesting party, STATE THE APPLICATION NUMBER PROTESTED, CITE REASONS FOR THE PROTEST, and REQUEST A HEARING, if desired.

Also, A \$15 FEE MUST BE INCLUDED FOR EACH APPLICATION PROTESTED. Protests must be filed with the Division of Water Rights on or before Mar. 27, 2024 either electronically using the Division's on-line Protest of Application form, by hand delivery to a Division office, or by mail at PO Box 146300, Salt Lake City, UT 84114-6300.

Please visit waterrights.utah.gov or call (801)538-7240 for additional information.

- **Change Application (s)** for [Water right: 05-290 \(a51289\)](#): Kane Creek Preservation and Development, LLC, Kane Springs Improvement District, Kane Springs Water Company, LLC propose(s) using 1.86 cfs OR 422.68748 ac-ft.

from groundwater (3 miles Southwest of Moab) for MUNICIPAL: In Kane Springs Water Company, LLC.

NEWS

- April 9, 2024 - [Kane Creek protests say developers water rights should be nullified](#). By Sophia Fisher for Moab Times-Independent.
- April 1, 2024 - [Four organizations protest Kane Creek water application](#). By Sophia Fisher for Moab Times-Independent.

WATER RIGHTS AT KING'S BOTTOM

Utah Division of Water Rights; (UDWRi or "State Engineer")

- Citizens may file protest applications [HERE](#)
- Link to water right queries at website of UDWRi are [HERE](#)
-

Batch One

1.a. [05-2450](#)

- [Combined administrative record as of January 2024](#)

1.b. [05-644](#)

- [Combined administrative record as of January 2024](#)

1.c. [05-290](#)

- [Combined administrative record as of January 2024](#)

Batch Two

2.a. [05-1990](#)

- [Combined administrative record as of January 2024](#)

2.b. [05-1296](#)

- [Combined administrative record as of January 2024](#)

2.c. [05-1295](#)

- [Combined administrative record as of January 2024](#)

The chronology of consumptive water use at King's Bottom - 1962 to 2020

1962 - chicken farm / dairy farm.

1992 - Drilling log at zero to 10 feet: river mobilized alluvium.

1992 - Drilling log at 10 to 360 feet: bedrock (Glen Canyon Group).

1992 - Output is 20 - 25 gallons per minute.

2002 - Private campground; bathroom & shower building.

2020 - Water rights transfered to KCPD, LLC in 2020.

2024 - Change Applications were filed in January. Citizens may file a protest application [HERE](#)

Lithium corporations pursue limited water supplies in the Colorado River Basin

MARCH 08, 2024

BY JOHN S. WEISHEIT



From Anticline Overlook and observing Dead Horse Point, Big Flat, and potash evaporation ponds.

NEW INFORMATION

Litigation by citizens of Emery County, Living Rivers and Great Basin Water Network

- [Click here](#) to read this story by Anastasia Hufham for the Salt Lake Tribune.
- [Click here](#) to review the plaintiffs complaint.
- [Click here](#) to review the administrative record for this mining project by Blackstone Minerals and Anson Resources.

Presentation about proposed lithium extraction at City of Green River, Utah

- [December 4, 2024 - Presentation by the coalition of public interest groups and the community of Green River.](#)
-

New Science

- [2024, August - Best practices for recycling and reinjecting lithium brine.](#) Zelandez.
- [2024, August - Direct Lithium Extraction: A report exploring the various technologies used for direct lithium extraction \(DLE\).](#) International Lithium Association & Rockwel Automation.
- [2024, March - Determining the Product Carbon Footprint of Lithium Products. Guidance for calculating a product carbon footprint \(PCF\) of key lithium intermediates and battery-grade lithium carbonate and hydroxide specialty chemicals produced from brine or rock minerals.](#) International Lithium Association.
- [2024 - Lithium and water hydrosocial impacts across the life cycle of energy storage.](#) Blair, et al.
- [2023 - Environmental impact of Direct Lithium Extraction from brines.](#) Vera et al.

NEWS AND OPINION

Lithium Extraction and Production in the Paradox Basin of Southeast Utah

- [The Green River Observer Newsletter](#)
- November 9, 2024 - [Judge extends lithium drilling freeze, a major win for the Hualapai Tribe.](#) Shondiin Silversmith for Utah News Dispatch.
- October 9, 2024 - [More lithium projects approved in Utah's Redrock Country: Exploring for the mineral, which is vital in rechargeable batteries uses a lot of water.](#) By Anastasia Hufham for Salt Lake Tribune.
- October 1, 2024 - [BLM approvals put famed southern Utah redrock landscapes in the crosshairs of industrial development.](#) Press release by Southern Utah Wilderness Alliance.
- August 21, 2024 - [Mandrake Resources inks supply agreement and gets free pilot plant.](#) By New Investors.
- July 25, 2024 - [Boiling Point: The Salton Sea lithium rush.](#) By Melody Petersen for LA Times.
- July 18, 2024 - [Lithium critical to the energy transition is coming at the expense of water.](#) By Wyatt Myskow for Inside Climate News.
- July 15, 2024 - [As a Nevada community fights a lithium mine a rare fish and its haven could be an ace in the hole.](#) By Wyatt Myskow for Inside Climate News.
- [June 8, 2024 - Water rights debate on the Green River may stop project.](#) By Anastasia Hufham for Salt Lake Tribune.
- May 29, 2024 - [Company says lithium projects as green as possible but environmental groups not convinced.](#) By Kyle Dunphey for Utah News Dispatch.
- April 2, 2024; OpEd - [More on the Green River lithium plant.](#) By Sarah Fields for Moab Times-Independent.
- March 29, 2024 - [Why the "white gold" rush won't save the planet.](#) Joshua Frank for Counter Punch.
- March 26, 2024 - [Lithium company addresses residents after March 8 water surge.](#) By Sophia Fisher for Moab Times-Independent.

- March 24, 2024 - [Mining Companies Say They Have a Better Way to Get Underground Lithium. but Skepticism Remains.](#) By Wyatt Myskow for Inside Climate News.
- March 15, 2024 - [As water erupts from lithium exploration site, so do fears over project.](#) By Jennifer Yachin & Hannah Northey for GreenWire.
- March 13, 2024 - [Lithium well blowout didn't breach the Green River, state says.](#) By SophiaFisher for Moab Times-Independent.
- March 12 - [A1 Lithium announces water use estimates.](#) Sophia Fisher for Moab Times-Independent.
- March 9, 2024 - [Skepticism at lithium hearing.](#) The Green River Observer.
- February 15, 2024 - [Bumpy road for EVs and climate goals.](#) By Russ Mitchell for Los Angeles Times.
- **February 8, 2024: Special Feature** - [In rural Utah, concern over efforts to use Colorado River water to extract lithium.](#) By Suman Naishadham and Brittany Peterson for The Associated Press.
- January 26, 2024 - [Howard Center investigation into lithium mines gains national media exposure.](#) Cronkite School at ASU.
- January 26, 2024 - [Mining Monitor, Moab's Kings Bottom Development and Sun Zia lawsuit.](#) By Jonathan Thompson for The Land Desk.
- [Lithium Miners want mega amounts of Utah water in the Colorado River Basin.](#) By Leia Larson for Salt Lake Tribune.
- [Lithium in Paradox: aridity could nip a new Utah mining rush in the bud.](#) Jonathan Thompson for the Land Desk.
- [Will Green River be home to a new lithium mine to help US go 'green'.](#) Amy Joi O'Donoghue for Deseret News.

GREEN RIVER CITY LITHIUM PROJECT BY BLACKSTONE MINERALS **A Subsidiary of Anson Reosurces (Australilia)**

Water Rights for Blackstone Lithium Extraction in Green River City, Utah.

- May 21, 2023 - Letter to State Engineer: [Request for Reconsideration on Approval of Application to Appropriate Water.](#) Clyde, Snow and Sessions on behalf of Protestants. This request was granted. See: [Water Right # 92-695](#)

Underground Injection Control Permits Near Dead Horse Point; Colorado River in Grand County by A1 Lithium. LLC.

- Close of Comments: **June 24, 2024**
- July 24, 2024 - [Public comment letter from Living Rivers & Great Basin Water Network](#)
- Contact (Email): Porter Henze
- [Public Notice](#)
- [Draft Permit](#)
- [Draft FSSOB](#)
- Public Hearing: None
- Type: Underground Injection Control

- [Visit the archive page](#)

Aquifer Spent Brine Recovery Well (Class 5 Injection Well)

Public comments are due **December 14, 2023**.

Division of Water Quality

PO Box 144870

Salt Lake City, UT 84114-4870

eMail: wqcomments@utah.gov

- [Admin Archive](#).
- [November 14, 2023 Public Notice](#)
- [January 17th, 2023 Public Notice](#)
- [Draft Fact Sheet](#)
- [Draft Permit: Underground Injection Well](#)
- [Attachments: Area of Review](#). DWQ.
- Public comment Letter to DWQ: [Living Rivers and Great Basin Water Network](#).
- Public Comment Letter to DWQ: [Gayna Salinas](#)

NARRATIVES ABOUT LITHIUM EXTRACTION AND PRODUCTION WATER

There are two batches of water rights for the proposed lithium mining facility at Green River City, as follows: The first is a water right to extract brine water from the deepest underlying layer (aquifer) of the Paradox Formation. The target mineral is lithium carbonate (and potentially other minerals such as bromine). After processing (DLE technology and addressed below), the spent brine is returned to the Paradox Formation. It is important to understand that this return flow is received at another mid-level elevation aquifer of the Paradox Formation. This water right is presently considered a "non-consumptive water use."

Note: Utah Division of Water Quality (DWQ) has since determined the waste brine must be returned to the same aquifer. It is important to understand there is insufficient rulemaking for lithium mining in the state of Utah, and why we are challenging this new mining activity in our water-stressed communities.

Note: DWQ has reversed their original decision and based on a determination by the Environmental Protection Agency (EPA). To clarify, EPA does allow injection into a different aquifer. For example, this is happening at the Salinity Control Program in the Paradox Valley, Colorado. This injection project stimulates earthquakes, so we think this decision is spurious.

Mining is a consumptive industry, period. In this case, one aquifer will be depleted and a different aquifer will be expanded. This is a concern to us because it is a forced disruption of a natural process. For example, will these movements in brine layers incite earthquakes? Will the pressures and currents within the aquifers fracture and break well casings?

This is why the injection wells are dependent on a different and more strident regulatory permitting process (now under review and addressed below) from the Utah Department of Water Quality. These return flows by injection, will also carry dangerous chemicals, which is also discussed below.

The second water right is surface water depletion from the Green River. This freshwater withdrawal will be used to "wash" ionized fabrics that attract and bond the lithium carbonates. There are chemicals (basic and acidic) that are used in this washing/separation process. This contaminated water is what is also returned via injection wells into the Paradox Formation.

This waste water stream is production water and it is a consumptive use. This process imitates the production of yellow cake from uranium ore processing, which was perfected by the Atomic Energy Commission in 1946. Incidentally, Anson Resources has also filed claims for mining uranium ore in the Yellow Cat area east of Arches National Park (Grand County).

Furthermore, there is no conversation about the disposal of sludge that the lithium process will produce. Where does this sludge go? What is the volume? Is the sludge toxic? Is the sludge reinjected into the aquifer, too? Or will it be transferred to a certified waste facility and where might that facility be? The assumption that lithium processing is non-consumptive is inaccurate.

###

The Colorado and Green rivers have nothing left to give. This river basin's transformation from abundance to exhaustion occurred between the Reclamation Act of 1902 and the Shortage Guidelines of 2003.

It is imperative to understand that the cause of this water scarcity problem was a human decision to intentionally exceed the limits of "nature's bounty." This deliberate decision happened before sea level rise (induced by the melting of continental ice) was verified by empirical data, both historic and prehistoric.

Why we have passion for knowledge and wisdom one day, and then vilify it the next day, is why we face a debilitating future of scarcity in regards to ALL our finite natural resources. This includes the need and purposes for extracting rare and precious metals, such the lithium and uranium deposits found in the Colorado River Basin.

For the last 120 years, the advisors to our political leadership have recommended making appropriate changes in our management of natural resources in order to avoid the emergence of political calamities such as World War One and World War Two. The recommendations were always about adopting precautionary planning, and to create sustainable and resilient communities, which also included ecosystem functions, eventually.

We did this, just not thoroughly enough, nor timely enough. Our lack of courage and commitment to finish the job is quite astounding and fearful. Because we are approaching a point of no return.

LITHIUM PRODUCTION AND LITHIUM MARKETS

1. Anson Resources (Australia)

- Home page - <https://www.ansonresources.com>
- Investor Center - <https://www.ansonresources.com/investor-centre/>

Subsidiaries of Anson Resources

- Blackstone Minerals (Las Vegas, NV)
- **A1 Lithium** (Las Vegas, NV)

Chronology of Anson Resources

- 2016 - begins operations in Grand County, Utah (near Dead Horse Point))
- 2021 - begins operations in Green River City, Utah
- 2023 - [Annual Report](#)

Corporate Leadership of Anson Resources

- Listcorp: [Investor Presentation](#) ([archived](#))
- Bruce Richardson - Executive Chairman and CEO
- Peter (Greg) Knox - Director (geologist).
- Michael van Uffelan - Director (secretary).

2. Mandrake Resources (Australia)

- Operations are in San Juan County, Utah; Lisbon Valley & Dry Valley.
- Home page - <https://www.mandrakeresources.com.au> ([archived](#))
- May 22, 2023 - [Wells secured for re-entry of lithium sampling at Utah lithium Project](#). Mandrake Resources.
- May 16, 2023 - [Lisbon Valley mining land rush continues](#). The Land Desk by Jonathan Thompson.
- May 1, 2023 - [Mandrake Resources stakes almost 90,000 acres at Utah lithium project](#).

3. Sunresin (China) and introducing a new technology called Direct Lithium Extraction (DLE)

- [Sunresin's corporate website](#)
- This technology is currently proposed for operations by Anson Resources at Green River City, Utah

5. LG Energy Solutions.

Subsidiary of LG Chem (South Korea)

- [Announcement](#)

6. American Battery Materials & Xantippe Resources (USA)

Lisbon Valley, San Juan County Utah

- [Corporate website](#)
- November 22, 2023 - [Corporate Update](#)

BLACKSTONE MINERALS (Subsidiary of Anson Resources)
Lithium extraction from the Paradox Formation
Green River City; Emery and Grand Counties, Utah

Utah Division of Water Rights

Utah Division of Water Resources

- [Water Right # 92-695](#) - Current water right
- [Water Right # 92-169](#)
- [Water Right # 92-40](#)
- [Water Right # 92-35](#)
- [Water Right # 92-698](#) - Temporary (one-year) application to Appropriate.
- [Water Right # 92-695](#) - Underground Water Well (existing)
- [Water Right # 95-434](#) - Admin record for water right transfers from Wayne County to Emery County & [News by Patty Henetz for Salt Lake Tribune](#).

Additional Information - Green River Water Rights

- [Area 92 - A determination of the Lower Green River](#)
- [Green River water rights sorted by location](#)
- [40-year water plan](#). Wayne County.

Utah Division of Water Quality

Utah Department of Environmental Quality

Aquifer Spent Brine Recovery Well (Class 5 Injection Well)

Public comments are due **December 14, 2023**.

Division of Water Quality

PO Box 144870

Salt Lake City, UT 84114-4870

eMail: wqcomments@utah.gov

- [November 14, 2023 Public Notice](#)
- [January 17th, 2023 Public Notice](#)
- [Draft Fact Sheet](#)
- [Draft Permit: Underground Injection Well](#)
- [Attachments: Area of Review](#). DWQ.
- Public comment Letter to DWQ: [Living Rivers and Great Basin Water Network](#).
- Public Comment Letter to DWQ: [Gayna Salinas](#)
- **What:** DOGM regulated exploratory and brine sample well: Casing is 24" in diameter at top, 7.625" at the bottom. Max depth Approx 10,800`.
- **Location:** Green River City, 1600 S 1015 E Green River, UT 84525.
- **Purpose:** Assay for lithium content and extraction of lithium for onsite sample/demonstration purposes.

- **Explanatory:** This temporary application is for the purposes of assaying deep ground brine for lithium, mineral content and other constituents to determine the viability of developing mineral extraction. Also to process brine through a small-scale temporary sample demonstration and pilot plant that is located next to the well site (Bosydaba #1) and to demonstrate the suitability of the brine for extraction and lithium production.
- **Disposal:** After extracting lithium from the brine, the unaltered spent brine is returned and disposed of at DEQ disposal facility at Danish Flat Section 8, T20S R24E SLMB.

PUBLIC HEARING INFORMATION

February 21, 2024

Class V Injection Well

DWQ is holding a public hearing to solicit further comments on the Draft Permit.

- The informational website is located [HERE](#).
- Location: Green River City Hall, 460 E Main St, Green River, Utah, 84525
- Date: February 21, 2024
- Time: DWQ Informational session begins at 6:00 pm
- Time: 6:30 pm to 7:30 pm
- Comments will be accepted until February 23, 2024
- eMail: wqcomments@utah.gov
- Contact: Porter Henze at 385-566-7799
- Internet access is not available (unless previously arranged).

Utah Department of Environmental Quality

Division of Water Quality

Second Public Notice of Permit UTU-19-F4-8F9143D

Underground Injection Control Class V Well Permit

Aquifer Spent Brine Recover Well, Category UIC Well 5C-1

Purpose: Blackstone Minerals is conducting lithium and associated brine resource mining operations in Green River, Utah. Brines will be extracted from the Paradox Formation, specifically Clastic Zone

31 using extraction wells. Brines will be processed using a lithium carbonate and lithium hydroxide production plant utilizing direct extraction. The spent brine that is depleted of lithium will be

pumped into the injection wells under pressure into the Paradox formation between clastic zone 7 and 19, or about 6,040 to 6,445 feet below ground surface.

**Radiation Control Board
Utah Department of Environmental Quality
Green River City; Uranium Mill Legacy Site
Department of Energy (DOE)**

- May 1, 2024 - [Letter from citizens](#) about Blackstone Minerals lithium operations in the designated radiation zone of the Uranium Mill Legacy Site at Green River in Emery and Grand Counties.
 - May 31, 2024 - [Response to citizens](#). UDEQ & RCB
-

YES! Canyonlands Watershed Council is a charitable organization.

- PayPal - [HERE](#)
 - Venmo - [HERE](#)
 - Our EIN is: 87-0637713
-

A1 LITHIUM IN GRAND COUNTY, UTAH

A subsidiary of Anson Resources

- Location: Near the Colorado River in the vicinity Dead Horse Point and Big Flat and the Intrepid Potash Facility
- **Note:** This proposed lithium project is presently in limbo.

Utah Division of Water Rights

- Admin record for A1 Lithium: [#01-1233 \(A83900\)](#)

Bureau of Land Management

- A1 Lithium, Inc. [submitted a revised Plan of Operations](#) to conduct Mineral Exploration on its unpatented placer claims located approximately 9 miles west of Moab, Utah (Big Flat) by reentering two abandoned well bores, Sunburst #1 and Mineral Canyon Federal #1-3, to test brine solutions for lithium and bromine.

PUBLIC WEBINAR: DIRECT LITHIUM EXTRACTION (DLE)

Lithium and Environmental Justice in Imperial Valley

February 15, 2024

11:00 a.m. to 12:30 p.m. (Pacific ST)

Register [HERE](#)

- An exceptional report by EarthWorks will provide more information [HERE](#)
- This report examines a new and emerging technology called Direct Lithium Extraction (DLE).
- REPORT: [Environmental Justice In California's Lithium Valley](#). Earthworks.

OTHER PERMITTING BY THE REGULATORY AGENCIES

Utah Division of Air Quality

- We could not confirm that Anson Resources received an exemption from a air quality permit.

Utah Division of Oil, Gas and Mining

- We could not confirm that a large mining permit is required.

ADDITIONAL PUBLIC INFORMATION ABOUT LITHIUM EXTRACTION

Consumptive water use for proposed lithium projects

- Mandrake at Dry Valley: Unknown; potentially 150 groundwater wells?
- A1 Lithium at Big Flat: 13,764 acre-feet per year (Colorado River)
- Blackstone at City of Green River: 13,764 acre-feet per year (Green River)
- Anson Resources at/near Town of Hanksville: Unknown; Fremont River water transfers from Wayne County to Grand County?

Direct Lithium Extraction (DLE)

- Note: There is only one DLE operation in the United States and located at Imperial County, California and in the the Salton Through (a structural depression). There is a consumptive use from the Colorado River for this project.
- REPORT: [Environmental Justice In California's Lithium Valley](#). Earthworks.

Technology Reports

- Direct Lithium Extraction (DLE). Beads of resin that attract lithium carbonate; no evaporation ponds. A technology developed in China with proprietary rights.
- Brine in solution (liquid) is naturally delivered to the surface by the pressure of 9,000 feet of overburden. Anson claims this pressure is sustainable for the project's lifetime ([reference](#)), but this statement is a double negative.
- A conceptual exploration target of between 2.1 and 2.56 billion tonnes of brine, grading between 108 and 200 parts per million (ppm) lithium and between 2,000 and 3,000 ppm bromine ([reference](#)).
- For the purpose of providing a constrast to Anson's lithium target, the concentration of the potassium target in the Paradox Formation can be as high as 42,000 parts per million.
- The return on investment for these two resources is nearly equivalent. We think protecting the water resources of the Colorado River Basin is what is truly priceless.
- **Report:** [Environmental Justice In California's Lithium Valley](#). Earthworks.
- **Report:** [Identifying Potential Hydrologic Impacts of Lithium Extraction in Nevada](#). Saftner, 2023; DRI for TNC.

Paradox Project by A1 Lithium; subsidiary of Anson Resources

Located near Dead Horse Park in Grand County and Canyonlands National Park in San Juan County, Utah.

- Website: [Paradox Lithium Project](#)
- Low interest loans from US Department of Energy
- Extraction goal: 10,000 tons per year of lithium carbonate
- [2021 - Exploration Plans](#). Millcreek Mining.

Bureau of Land Management Administrative Record

- [2022 - Draft EA for A1 Lithium](#). BLM.
- [2022 - EA for A1 Lithium](#). BLM.
- [2022 - Visual Assessment](#). BLM.
- [2023 - Updated Mineral Exploration Project](#). BLM.
- [2023 - Comment Letter to BLM](#). Living Rivers.
- [2024 - Final EA & FONSI \(Finding of No Significant Impact\)](#). BLM.

Paradox Project by Blackstone; subsidiary of Anson Resources

Green River Project: City of Green River in Emery County Utah

- [Minutes of October 25, 2023](#). City Council of Green River.
- [Website of Green River Project; \(archived\)](#)
- News October 2023 - [Anson Confirms Green River Plant Location](#). Esmarie Iannucci for Mining Weekly Australia.

Wayne County Water Transfers to Emery County

- [40-year Plan](#). Wayne County Water Conservancy District.
- Note: The 40-year plan does not mention lithium extraction. The water conservancy district of Wayne County does not have a public web page about their activities.

Presentations

Public

- [November, 2023 - Anson Resources Project](#). Roerink for GBWN.

Agency

- [Bureau of Reclamation](#)
- Note: Reclamation believes an environmental assessment for a federal water contract is required.

Corporate

- [2023 - Paradox Project by A1 Lithium and Anson Resources near Moab Utah](#). A1 Lithium.

Utah Division of Oil Gas and Mining Research and Well Logs

- Homepage: <https://oilgas.utah.gov>
- Data Explorer: <https://dataexplorer.ogm.utah.gov/>
- APIs in the Long Canyon area: Lithium well 43 019 50096; Lithium well 43 019 15925; Lithium well 43 019 50095; Lithium well 43 019 30357; Lithium well 43 019 31319; Lithium well 43 019 30810;

Subcontractors

- Mike Swenson - attorney from Emery County in Orangeville, Utah.

Geology

- [1965 - Subsurface Brines Moab Region Utah](#). Special Studies 13; UGS.
- [2009 - Hydrogeochemical characterization of Leaking Carbon Dioxide Charged Fault Zones in East Central Utah with Implications for Geologic Carbon Storage](#). Heath & Lachmar et al.
- [2009 - Reservoir Characteristics of Clastic Cycle Sequences in the Paradox Formation of the Hermosa Group in Utah](#). Trudgill.
- [2011 - Well Database of Salt Cycles of the Paradox Basin in Utah](#). Massoth.
- [2011 - Green Energy Project Grand County](#)
- [2019 - Lithium Recovery From Oil And Gas Produced Water](#)
- [2022 - Paradox Basin Lithium and Brine Project](#).

Green River City Council: Special Meeting of November 13, 2023 (This meeting was not noticed in the public record.)

Areas near City of Moab

- There will be water diversions in Grand County.
- There are well pads and they are small.
- We have drilled near Moab and determined lithium extraction will be successful.
- Note: We could not verify this statement; they may be referring to drill logs from other company operations.
- The lithium reserve may be one to three million metric tons. Currently the price for lithium carbonate is between \$20,000 to 30,000 per ton. The low end is \$7,000 and high end is \$50,000.
- We intend to use this lithium resource in the USA. Most lithium is exported from Argentina and China.

Areas near City of Green River

- We want to work in Green River for railway and interstate transportation and for a work force and to be near a flowing river.
- We hope to discover a viable similar to the Moab location. There are brine layers in the vicinity and we intend to drill some exploratory wells.

- Water diversions are required and we have a lease agreement from Green River Corporation.
- There will be no return flows back to the Green River. They will be injected into the Paradox Formation.
- There are well pads and they are small.
- We are not piping brine from Moab to Green River. BLM won't allow that.
- Footprint will be about 18 acres. There will be a warehouse-like building. It will be in city limits and not in Grand County.
- We are working with the utilities. We are not that far along.
- 300 construction jobs for two years. 50 to 70 employees after that. Don't know what the salaries will be.
- "This is going to happen whether you like it or not. Otherwise you'll have China in your background."
- Point of diversion on our property. We have a change application in process.
- We intend to apply for an air quality permit; we understand we will get an exemption (di minimus)
- Don't have a chemical list quite yet. Hydrochloric acid will be necessary. Don't know how much.
-

The company and its subsidiaries

- We can apply for government energy subsidies.
- We have a website with limited information.
- We have expertise in Boca Raton, Florida.
- Our lithium meets or exceeds the standards of Tesla, Inc.
- We intend to provide scholarships to school children in Emery County.

Narrative about the Paradox Basin

Sub-surface brines in the Paradox Formation of eastern Utah can carry trace amounts of lithium carbonate (an inorganic compound of lithium, carbon and oxygen) at depths about 9,000 feet. Another desirable trace mineral includes bromine. Deposits here are below sea level, under extreme pressures, and at temperatures higher than a hot tub.

The Paradox Basin region includes the counties of the "four corner states:" Arizona, New Mexico, Colorado and Utah. Grand County, Utah has the most crustal deformation, which is caused by the dissolution of the underlying salt formations, due to hosting the incised canyons of the Colorado River and its close proximity to the La Sal Mountains, which condenses a significant amount of precipitation from the atmosphere (meteoric water) and dispersed as groundwater and as spring fed surface water.

The Paradox Formation consists of diverse layers of gypsum, anhydrite, and salt, interbedded with shale, sandstone, and limestone. There are geologic traps that contain reserves of petroleum, natural gas, carbon dioxide, and helium.

The Paradox Formation was formed in the Pennsylvania Period near structural depressions along the coast of the ancestral Rocky Mountains and the ancestral Pacific

Ocean. Very similar to structural depressions such as the Salton Through and Death Valley in California (Basin and Range Province).

Sea level fluctuations were wildly aggressive during that time period. The basins filled with seawater and then evaporated away in at least 33 individual cycles, or until these basins were completely filled with deposits of sea water evaporates.

And then they were buried at depth by subsequent formations (overburden) during the Mesozoic and Cenozoic Eras, which are now being incised and dessicated by the aggressive erosive power of the Colorado River, which is even piercing through the Paradox Formation in Moab-Spanish Valley, Utah, and Cataract Canyon in Canyonlands National Park. This includes a tributary, the Dolores River, adjacent to the eastern slopes of the La Sal Mountains at Paradox Valley, Colorado.

Drilling pads are required to mechanically install steel well casings into a targeted layer of brine. Anson consultants say that the brine layers they are targeting are already saturated and that freshwater injection is not required. ([Reference](#))

What is different about Anson Resource's proposed and untested technology for mineral extraction in the Paradox Basin, is that evaporation ponds are not necessary to remove the processing liquids. They intend to use beads of resin that attract the lithium ions that this process crystalizes. This technology was developed in China and requires a licensing agreement for users such as Anson Resources.

The processing water is then returned to the subsurface with injection wells, which requires the drilling of more well cases and utilizing high pressure pumps, which also is not a new technology, but requires a 10-year operating permit from the Environmental Protection Agency (EPA).

For instance, the Bureau of Reclamation's operating permit in the western Colorado intercepts brine water that seeps into the Dolores River. Reclamation then injects the captured brine at depths of 16,000 feet (the deepest well casings in the world). This facility is located at Paradox Valley, Colorado, which is the name sake (type locality) for the Paradox Formation.

This practice by Reclamation has been recently modified to smaller injection volumes to avoid the hazards of earthquakes. Another public concern is pressurized brine can cause fractures in crustal rocks (hydro-fracking) and this leakage under pressure could contaminate nearby layers of fresh groundwater.

###

The serious issues about drilling for rare metals in the Paradox Basin to make car batteries include installing well casings that wobble, warp, buckle and break in geologic formations that resemble toothpaste, rather than durable bedrock.

Also how to avoid accidentally venting hydrogen sulfide gas, natural gas, nitrogen gas, and helium gas into the atmosphere, at the work place, or into the neighborhood.

Not to forget how to avoid mobilizing formation water at depths between 8 and 10 thousand feet that is very stinky and toxic (hydrogen sulfide).

We also think it is important to mention that lithium batteries will not power these operations. What will power and construct the intense extractive operations of Anson Resources is fossil fuels.

Drilling issues near the Green River in Grand County, Utah.

- [Abstract: Office of Scientific and Technical Information](#). DOE.
- [Abstract: Four Corners Geological Society](#)

"The Salt Wash field is located 15 miles southeast of Green River, Utah, in the Paradox fold and fault belt. The field was discovered in 1961 and has produced over 1.3 million bbl of oil and 11.6 billion ft of gas from the Mississippian Leadville Limestone. The average surface elevation is 4,389 ft above sea level, and the depth to the top of the oil production is from 8,500 to 8,914 ft. Salt Wash field is an anticline with over 200 ft of closure on top of the Leadville. The producing zone is in the lower Leadville with intercrystalline and vuggy porosity developed in limestone and crystalline dolomitic limestone. The produced oil is a 50 to 53 API gravity crude with a 40 degrees F pour point. The gas, a mixture of two sources, is predominately nitrogen with some hydrocarbons (>10%) and smaller amounts of carbon dioxide and helium. All of the original wells suffered casing collapse in the overlying Paradox section resulting in their premature abandonment.

Additional undeveloped Leadville reserves may still be present. There may also be undiscovered reserves in the stratigraphically higher Cane Creek shale of the Pennsylvanian Paradox Formation in the Salt Wash field. The field is roughly 12 mi northwest of the Kane Springs unit where Columbia Gas has been completing horizontally drilled wells in the Cane Creek. The State 1-16A in Salt Wash field recovered 600 ft of 52 API gravity crude and no water from a drill-stem test of the Cane Creek. The State 1-16A well in Salt Wash field recovered 600 ft of 52 API gravity crude and no water from a drill-stem test of the Cane Creek. Reverse faulting and recumbent folding combined with structural closure increases the potential for fracture development in the Cane Creek at Salt Wash field."

END

Documenting the struggles by citizens with the Planning and Zoning Office of San Juan County

DECEMBER 02, 2024
BY JOHN S. WEISHEIT

SAN JUAN COUNTY Planning and Zoning Commission

Narrative about litigation from citizens demanding due process

We find it necessary to litigate because the judicial branches of state and federal government are typically where the principles of equity, sustainability and resilience, have an opportunity to prevail in our decision-making processes.

However, this does not necessarily mean that these principles will be captured by the judges (administrative and judicial) who serve in the lower courts. Either the plaintiff, or the defendant, will likely move their case to the Appellate Court, and maybe even to the highest courts in the state and/or federal governments.

For example, Living Rivers (based in Moab, UT) is presently in the US Supreme Court on a dispute about violations of the National Environmental Policy Act for the proposed Uinta Railway that would deliver two-mile train loads of waxy crude along the Colorado River in Utah and Colorado to refineries along the Gulf Coast ([see page 3 for the list of plaintiffs in the reply brief](#)).

Most of the attorney fees will be spent on the procedural deliberations that occur in the lower courts. Therefore, citizens must be prepared to organize and educate their constituency, secure seasoned attorneys and expert witnesses, and raise the necessary funds to pay for these professional services.

Obviously many years and dollars will be expended. But it must be understood that the value returned to citizens is priceless. We also need to be mindful that our state and federal constitutions installed a system of checks and balances, and that **every** citizen has a position of strength. Please do consider exercising your constitutional rights, and do it with facts and conviction.

LOVE'S TRUCK STOP (a corporation) San Juan County

The issue: San Juan County, as a government agency, is negligent in practicing the acceptable standards of due process. In this case, approving an incompleated application to build a commercial truck stop. Consequently, citizens were aggrieved (injured) and rightfully sued San Juan County. Instead of arguing the merits of the case, San Juan County attorneys argued that citizens do not have the right to sue the county, and for lack of having the standing to do so. The District Court affirmed that the coalition

of citizens were indeed injured, but San Juan County attorneys appealed that decision to the next higher court. The Appellate Court then affirmed that the standing of citizens had been properly secured.

The merits of the citizen complaint: (1) Love's application of 2019 was incomplete. In fact, this incompleted application was written on a surrogate document from another County. (2) A zoning ordinance from 2011 required that the Love's corporation also had to apply for a variance, which was also not completed. (3) A moratorium on truck stop development was proposed, but before this moratorium became law, Love's submitted their erroneous application, and obviously in great haste. (4) The planning and zoning commission approved the application, and with carelessness.

The Coalition was denied due process: In the word's of the attorney for the citizens..."The procedures adopted by the County for the Planning Commission meeting constituted a denial of due process to the Coalition and members of the community. Due process in an administrative proceeding requires, at a minimum, notice, an opportunity to be heard, and access to a fair tribunal. Even though the County and its attorneys were litigants in the proceedings that led to the Planning Commission meeting, they were permitted to instruct and influence the Planning Commission without the Coalition and its attorneys being allowed to respond or to address erroneous statements. The influence of the County's Chief Administrative Officer ("CAO") and the County's attorneys prevented the tribunal from being neutral and fair."

News

- [July 14, 2025 - Love's Truck Stop decision delayed after tie breaking vote walks out.](#) By Andrew Christiansen for Moab Times-Independent.
- [February 13, 2024 - San Juan County Pushes Forward Spanish Valley Loves Travel Stop Sparking Appea.](#) By Sophia Fisher for Moab Times-Independent.
- [February 9, 2023 - Opponents To Spanish Valley Truck Stop Win Court Victory.](#) By Doug McMurdo for Moab Times-Independent.
- [June 20, 2019 -County Opposes Truck Stop Location.](#) By Maggie McGuire for Moab Sun News.
- [June 6, 2019 - Truck stop is a toss up for county.](#) By Ashley Bunton for Moab Sun News.
-

Opinion

- [September 19, 2019 - The real cost of a truck stop.](#) By Susan Baril for Moab Sun News.
- [March 16, 2023 - You do not want a Love's Travel Stop anywhere near Moab.](#) By Jeremy Wheatley for Moab Sun News.

Legal Decisions and References

- - [2020 to 2023 - All briefs combined](#)
 - [Opening Brief of 2024](#)
 - [Ombudsman Opinion: Conditional Use Permits for Truck Stops](#)
 -
-

MILL CREEK PRIVATE CAMPGROUND San Juan County

A conditional use permit to establish a private campground on private property for an outdoor education program, at the college level. The access to this private campground is by a county road (to a dead end) on Public Lands managed by the Bureau of Land Management.

The banks of this road collapsed during a summer cloudburst in 2022. There is a creek crossing that is impassable during cloudbursts, or a large snow melt. There was a fatal accident at this crossing in 2024.

Additionally, escape from a wildfire driven by high winds in this confined bedrock canyon would become life threatening.

In the summer of 2021, a major fire swept up the adjacent watershed of Pack Creek. This fire started in a public campground managed by the US Forest Service.

Legal Decision

- [Opinion of Utah Appellate Court. Living Rivers vs San Juan County.](#)

Legal Remedy

- Based on the merits, Living Rivers lost this case against San Juan County. The college students and their professors can occupy this campsite, as approved by the Planning and Zoning Commission of San Juan County.
- This does not mean that the risks of fire and floods, have not been removed. Death and injury still remains a problem for these campers. We hope the consequences of these safety issues will be addressed seriously by the college professors.
- Living Rivers, based in Grand County, Utah, did indeed secure standing to engage San Juan County in a court proceeding. This determination will save money and expedite a proceeding to immediately argue the merits of the case, rather than to argue the issue of a plaintiff's standing (injury).
- Ideally, and in any and all future grievances against San Juan County or Grand County, developing a coalition of participatory citizens from both counties, would provide the best position of strength in the arenas of the public meeting and the public courtroom.
-

NEWS AND PUBLIC OPINION

Journalists

- [January 22, 2020 - Camping on upper Mill Creek proposal stokes fear of Fire, Floods](#). By Sophia Fisher For Moab Times-Independent.
- [February 17, 2022 - Mill Creek camping approved with 12 stipulations that govern fire, water, and more](#). By Sohia Fisher for Moab Times-Independent.

Opinion

- Terry Tempest Williams: [At my Utah home I stand in the terrible beauty of climate chaos. Climate instability is not for future generations to solve. It is ours to reckon with now](#). Salt Lake Tribune.

Incidents: Mill Creek Flooding

- [August 25, 2022 - Moab just had a 100-year flood. What does that mean and how often does it happen?](#) By Julie Jag for Salt Lake Tribune.
- [July 23, 2024 - Human remains in Mill Creek Canyon are one of missing Texas couple](#). By Andrew Christiansen for Moab Times-Independent.

Incidents: Fires in the watersheds of the La Sal Mountains

- [June 15, 2021 - The Pack Creek Fire has cost \\$2.6M to fight and could burn for weeks before it's contained](#). By Sara Tabin for Salt Lake Tribune.
- [August 28, 2008 - Porcupine Rim Fire](#). KSL TV.

WINDFARM AT MONTICELLO

San Juan County

A campaign led by citizens - Lack of due process by elected and appointed officials was a strong reason for this complaint.

Legal Decision

Northern Monticello Alliance Vs. San Juan County, San Juan County Commission, Sustainable Power Group LLC, and Latigo Wind Farm, LLC.

- [May 21, 2020 - Appellate Decision](#). NMA vs SJC. This decision contains background, issues, analysis, and standard of review.
- [2022 - Supreme Court Decision](#)

News

- [May 25, 2020 - San Juan County loses appeal involving the wind farm and Northern Monticello Alliance](#). By Monte Wells for the The Petroglyph.
- [February 15, 2020 - Wind farm fails to mitigate noise light flicker impact for local property owners](#). The Petroglyph.

- [December 11, 2015 - Last minute save by Adams, Benally benefits sPower.](#) The Petroglyph.
 - [September 14, 2015 - Open meeting laws ignored by Planning & Zoning Chairman.](#) The Petroglyph.
 - [November 22, 2015 - Wind Farm hearing on county corruption.](#) The Petroglyph.
-

TELECOMMUNICATION TOWER IN BEARS EARS NATIONAL MONUMENT

- [June 17, 2024 - An ugly tower threatens Bears Ears National Monument.](#) By Mark Maryboy for Writers on the Range.
 - [August 1, 2024 Controversial Bears Ears Tower Proposal scrapped amid backlash.](#) By Anastasia Huffman for Salt Lake Tribune.
-

SKY RANCH DEVELOPMENT WITH AIRSTRIP

News

- [November 30, 2017 - Sky Ranch may receive UPS flights: neighbors fear increased buzz.](#) Moab Times Independent.
- [March 20, 2018 - Sky Ranch Airstrip Project grows in Spanish Valley.](#) San Juan Record.

Opinion

- [May 17, 2018 - Safety Issues Cannot Be Mitigated At Sky Ranch Airport.](#) By Beverly O'Neill for Moab Sun News.
 - [January 25, 2018 - Sky Ranch Heartbreak.](#) By Kiley Miller for Moab Times Independent.
 - [February 22, 2018 - Safety concerns at Sky Ranch.](#) Barb Wheeler for Moab Times Independent.
-

Upcoming Planning and Zoning Meetings and Documents for San Juan County

JANUARY 02, 2025
BY JOHN S. WEISHEIT

SAN JUAN COUNTY
Planning & Zoning and Building Department

WEBSITE

<https://sanjuancountyut.gov/planning>

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ALL CONTACT INFORMATION

<https://sanjuancountyut.gov/planning/custom-contact-page/planning-contact-information>

PUBLIC NOTICE WEBSITE

<https://www.utah.gov/pmn/index.html>

If you would like to be updated of San Juan County Planning on-goings, please sign up through Utah Public Notices.

MEETING AGENDAS AND MINUTES

State of Utah's Public Notice website
(<https://www.utah.gov/pmn/index.html>).

PUBLIC HEARING NOTICE

Public Hearing Notice is hereby given that San Juan County will consider the recommendation and legal adoption of the **2025 Subdivision Ordinance (chapter 6)**.

- **San Juan County Planning Commission on Monday, December 30th, 2024 at 9:00am**
- <https://meet.google.com/ust-hood-zzu>

San Juan County Board of Commissioners on Monday, December 30th, 2024 at 11:00am

- <https://us02web.zoom.us/j/87155847636>

Public Hearing Notice is hereby given that San Juan County will consider the recommendation and legal adoption of the **2025 San Juan County Land Use, Development and Management Ordinance**.

- Community Comments will continue to be received up to the adoption date to KBushnell@sanjuancountyut.gov and forwarded to our Planning Commissioners and County Commissioners.

San Juan County Planning Commission on Thursday, January 9th, 2025 at 6:00pm

- <https://meet.google.com/ust-hood-zzu>

San Juan County Board of Commissioners on Tuesday, January 21st, 2025 at 11:00am

- <https://us02web.zoom.us/j/87155847636>

All meetings will be held in the Commission Chambers at the San Juan County Administration Building

- 117 South Main Street in Monticello, Utah
- Or electronically at the broadcast links listed above. Please review the documents below (**updated as of 12/28/2024**) that have been drafted based on our community comments and commission work sessions. Revisions done during previous work session are noted in red.

DOCUMENTS

[FINAL 2025 Land Use, Development and Management Ordinance](#)

[FINAL 2025 Use Table](#)

[FINAL 2025 Zoning Maps](#)

[SITLA Community Structure Plan for Spanish Valley](#)

[San Juan County P&Z Public Engagement Summary](#)

[Clarifications on Frequently Asked Questions](#)

Echo Canyon Municipality - a process approved by state legislation that allows developers to self-incorporate a city on the floodplain of the Colorado River at Kings Bottom and Kane Creek

FEBRUARY 24, 2025
BY JOHN S. WEISHEIT

PUBLIC MEETING ANNOUNCEMENT

News

- [February 18, 2025 - Kane Creek Town proposal moves forward, public hearing set.](#) By Andrew Christiansen for Moab Times-Independent.
- [March 5, 2025 - Lawmakers could end preliminary municipality process Kane Creek; Public Hearing tonight.](#) By Andrew Christiansen for Moab Times-Independent.
- [March 6, 2025 - Hundreds oppose Kane Creek incorporation at public hearing as process moves forward.](#) By Andrew Christiansen For Moab Times-Independent.

Opinion

-
- December 31, 2025 - [Echo Canyon: A breakdown in buyer protections.](#) By Dave Closser for Moab Times-Independent.
- October 22, 2025 - [Craig Weston's Echo Canyon Legacy--Buyer Beware!](#) By Jerry Shue for Moab Times-Independent.
- October 01, 2025 - [Kane Creek/Echo Canyon Development Lots For Sale.](#) By Dave Closser for Moab Times-Independent.
- August 08, 2025 - [Kane Creek/Echo Canyon Development Update.](#) By Dave Closser for Moab Times-Independent.
- June 11, 2025 - [Echo Canyons \(Kane Creek\) impending traffic crises ahead.](#) By Dave Closser for Moab Times-Independent.
- May 28, 2024 - [What could go wrong?](#) By Jerry Shue for Moab Times-Independent.
- May 14, 2024 - [General Plans are more than a wish list, they are the law.](#) By Alison Simon for Moab Times Independent.

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Baseline River Elevations

- 3949 feet - the Colorado River at the mouth of Moonflower Canyon in low water.
- 3965 feet - the parking lot & public toilet at Moonflower Canyon trailhead.

- 3968 feet - the maximum elevation of Kane Creek Boulevard near the proposed construction site.
- 3969 feet - the maximum elevation for the snowmelt of 1984.
- 3977 feet - the maximum elevation for the snowmelt of 1921.
- 3986 feet - the maximum elevation for the snowmelt of 1884.

What is Kings Bottom? It is an expansion bar of mobilized river cobbles and sand deposited by vigorous, velocity currents of the Colorado River at floodstage. Typically a warm rain on snow event falling on the snowpack of the Rocky Mountains in May/June. Extreme and random floods also occur during the hurricane season and the monsoon season (late summer/early fall). Dam failures upstream pose the greatest threat to safety, because a massive wave races through the river corridor. The wave will entrain everything within the river corridor, which includes trees, cars, and buildings. It is the debris that makes this flood extremely life threatening.

A chronology of baseline documents

-
- [1984 - Hydrograph of high water for the Colorado River at Moab](#). Graph.
- [Flood simulation at Kings Bottom](#). Animation.
- [2003 - 7.5 Minute Quad Map of Portal, Kings Bottom, Kane Creek and Potash facility \(mine\)](#). USGS.
- [2004.09.20 - Biological Opinion for reclamation of the Moab Uranium Mill](#). USFWS.
- [2020.04.03 - Flood insurance study for Grand County Utah annotated](#). FEMA.
- [2021.11.00 - Floodway analysis mapping annotated; Grand County, Utah](#). FEMA.
- [2024.04.10 - KCPD property should be a protected wetlands](#). Robert Phillips.

The original proposal is campground development

- [2020.01.24 - Original site plan for a proposed campground at Kings Bottom](#).

The proposal is modified to become a high end residential and commercial development

- [The original campground project is abandoned and expanded to become a high end develop and then as a municipality](#).

The proposal is modified again to become an independent municipality

- [2024.05.01 - Kane Creek request for feasibility study](#).
- [2024.06.24 - Kane Creek Preliminary Municipal Feasibility Review](#). U of U.
- [2025.01.31 - Kane Creek Preliminary Incorporation Feasibility Study, Final Corrected](#). LRB Advisors.
- [2025.02.05 - Kane Creek First Public Hearing Notice](#). UPN and LGO website corrected.
- [2025.02.23 - Jordan Schwanke eMail Response to Dave Closser](#).

- [2025.02.24 - Evaluation of LRB Feasibility Study for Kane Creek Preliminary Municipality.](#) Dave Closser.
- [2025.03.04 - Kane Creek First Public Hearing Agenda.](#)
- [2025.03.05 - Preliminary Municipality on Kane Creek Public Hearing Questions & Responses.](#)
-

The name for this municipality with no population or infrastructure shall be called "Echo Canyon."

-
- [2025.03.20 - Filed Petition for Incorporation of Echo Canyon: A Preliminary Municipality With Exhibits.](#)
- [2025.03.23 - Well Application for equipping the Kane Springs Water Co. Well #1.](#)
- [2025.05.01 - Kane Creek Request for Feasiibility Study Certification.](#)
- [2025.05.05 - Echo Canyon Preliminary Municipality Petition Determination Notice.](#)
- [2025.05.20 - Certification of Petition for Incorporation Echo Canyon.](#)
- [2025.05.20 - Echo Canyon Modified Petition for Incorporation.](#)
- [2025.06.09 - Certification of Petition for Incorporation Echo Canyon.](#)
- [2025.06.12 - Echo Canyon Ordinances.](#)
- [2025.06.25 - KCPD Phase 1 LLC, Certificate of Organization.](#)
- [2025.06.28 - Echo Canyon Community Association Incorporation; Articles of Incorporation.](#)
- [2025.07.01 - KCPD LLC Phase 1 Special Warranty Deed.](#)
- [2025.07.03 - Echo Canyon Phase 1 Plat.](#)
- [2025.07.07 - Echo Canyon Community Declarations.](#)
- [2025.07.07 - Echo Canyon Residence Association Declarations.](#)
- [2025.07.07 - Notice of Annexation.](#)
- [2025.08.06 - Floodplain Code 44CFR59.24.](#)
- [2025.08.06 - Floodplain Code 44CFR64.4.](#)
- [2025.08.27 - Final EC Admin Funding and Reimbursement Agreement With KCPD.](#)

Reviews by Citizens

- [Citizen review.](#) Closser.
- [Counter study by citizens.](#) Kane Creek Development Watch (The Watch)

Contact the Designated Sponsor

- Kane Creek Preservation and Development, LLC.
 - eMail for [Craig Weston](#)
-

Kane Creek Development Watch and Living Rivers file a complaint against Echo Canyon / Kane Creek Preservation and Development LLC

JUNE 28, 2025

BY JOHN WEISHEIT

NEWS COVERAGE ON THIS LITIGATION

- July 2, 2025 - [Lawsuit takes aim at Echo Canyon water rights](#). By Doug McMurdo for Moab Times-Independent and Salt Lake Tribune.

Press Release for immediate release as of June 28, 2025

LIVING RIVERS AND KANE CREEK DEVELOPMENT WATCH CHALLENGE KANE CREEK LUXURY RESORT'S WATER RIGHTS

Note: The developers have recently changed the name of their luxury resort from Kane Creek Preservation and Development, LLC to Echo Canyon, a Preliminary Municipality.

Note: The citizen's group known as Kane Creek Development Watch has a nickname: "The Watch"

Contacts:

- John Weisheit at Living Rivers: 435-260-2590; john@livingrivers.org
- Laura Long at The Watch: 224-567-1966; contact@kanecreekwatch.org
- Dave Closser at The Watch: 303-859-1080; daveclosser@gmail.com

Living Rivers and Kane Creek Development Watch (hereafter referenced together as "Watch") have filed a lawsuit in the Seventh Judicial District Court of Grand County challenging the validity of the water rights claimed by Kane Creek luxury resort developers ("Developers"). Watch's lawsuit states that the Developers' groundwater and Colorado River water rights were not put to beneficial use for more than seven years, which, under Utah law, means the water rights are subject to forfeiture. Development, even the preliminary bulldozing, cannot legally continue without a water supply.

Local opposition to the proposed Kane Creek luxury resort has been strong and consistent, with residents voicing concerns at standing-room only public hearings. "This project does nothing to address Grand County's affordable housing crisis—in fact, it makes it worse," said Laura Long, a Watch activist and frequent speaker at the hearings. "It's an exclusive enclave for wealthy investors that would drive up land prices, strain local infrastructure, cost local taxpayers money, and destroy the natural character of the canyon and the Colorado River floodplain." The resort proposal (which has changed several times) calls for over 550 high-end housing units, 70,000 square feet of commercial space, and 100 overnight accommodations in the heart of the Kings Bottom area.

Bob Phillips, a water right owner and Moab Mosquito Abatement District manager for 23 years who frequently observed and assessed the proposed project site, says, "Utah law is very clear that if water rights aren't put to beneficial use for seven years, those water rights are no longer good. Anyone who has spent time in the Kane Creek development area knows that there's barely been any irrigation there for decades. Therefore, the developers have lost their right to this water--and there are plenty of other people who want it."

In their prior protest to the use of these water rights, the U.S. Bureau of Land Management (BLM) noted that several natural springs on public lands adjacent to development could shrink or dry up due to increased groundwater use at the development. The BLM's springs are critical for wildlife and nearby native plants and hanging gardens--places like Moonflower Canyon, Hunter Canyon, Pritchett Canyon, Kane Canyon, and the Behind the Rocks Wilderness Study Area.

John Weisheit, Colorado Riverkeeper and director of Living Rivers agrees: "We need to show respect to the Colorado River and our water supplies in times of prolonged drought, water scarcity, flood events and in land use. The Developers of this luxury resort on the Colorado River fail to do so."

Dave Closser, a Moab resident, has been monitoring the resort's progress from the beginning. He is concerned about safety and delays on Kane Creek Boulevard, a rough and narrow gateway access road for public recreation traversed daily by tourists and Grand County residents alike. "The resort construction and massive infrastructure development will make accessing all of Kane Creek Boulevard, and nearby recreation areas, difficult and dangerous for years. There will be long delays on the narrow road along the River, and there are no go-arounds. Local businesses could be forced to cancel or reduce their operations which will trickle down to their bottom line and the pockets of their employees. And who is going to pay for the road expansion? It's going to cost millions of dollars, and the federal government has already declined to fund it." Several local tourism business owners submitted statements in support of the lawsuit, noting that the resort and its water use could damage their businesses.

Kane Creek Development Watch is a grassroots citizen's group based in Moab. It sprung up in 2024, in response to this resort proposal. Its strong network of donors and activists have been pushing back against the well-funded and politically-connected Developers, including by funding this lawsuit (which is funded entirely by hundreds of local residents and visitors) and collecting 17,850 signatures from residents and others opposed to this massive resort. Watch is dually focused on (a) mitigating impacts from the development on the unique area it would decimate, the surrounding ecosystem, and adjoining public lands, as well as (b) preventing additional strain on the water supply of the Colorado River and its tributaries, which are over-appropriated.

DOCUMENTS:

- [The complaint and exhibits](#)
- [The complaint only](#)

- [The exhibits only](#)

ADDITIONAL WEBSITES:

- <https://kanecreekwatch.org/>
 - <https://www.livingrivers.org/nonprofit/moab-ut>
-

YES! Canyonlands Watershed Council is a charitable organization.

- PayPal - [HERE](#)
 - Venmo - [HERE](#)
 - Our EIN is: 87-0637713
-

Kane Creek Development Watch and Living Rivers file a lawsuit against Lt. Governor and Echo Canyon Municipality

FEBRUARY 10, 2026
BY JOHN S. WEISHEIT

SB 258 Press Release, Media Summary and FAQ

For immediate relase on Febuary 11. 2026

Lawsuit Challenges Unconstitutional Law Tailored for Echo Canyon Luxury Resort.

- [Click here to read the legal brief.](#)

Contacts:

- Laura Long: laura@kanecreekwatch.org
- John Weisheit: john@livingrivers.org
- Cody Priano: codypriano@gmail.com

News Coverage

- February 11, 2026 - [Lawsuit Seeks To Void Echo Canyon's Preliminary Municipality Certification](#). By Andrew Christensen for Moab TI.
- February 12, 2026 - [Lawsuit Challenges State Law That Gave Kane Creek Developers Their Own Government](#). By Maggie McQuire for Moab Sun News.

Summary

Environmental and community groups have filed suit challenging a new Utah law that allows a private developer to form an unelected “preliminary municipality” government with full zoning and land-use powers. The lawsuit argues the statute violates the Utah Constitution by transferring government authority from elected officials to private developers; the new law appears as if it was drafted specifically to facilitate development of the Echo Canyon luxury resort along the Colorado River near Moab without having to receive approvals from county land use authorities. In addition to Echo Canyon, this law has since been used to advance at least three other controversial projects in rural Utah. Bottom line, the new law lets developers write their own rules for governing, rather than elected county representatives who are accountable to residents.

The Complaint: FOA vs Henderson

MOAB, UT — February 10, 2026 — Kane Creek Development Watch, in partnership with Living Rivers, filed a lawsuit in Utah’s Seventh District Court challenging the constitutionality of a state law designed to allow the Echo Canyon luxury resort (formerly Kane Creek Preservation and Development) to incorporate as a municipality while bypassing long-standing incorporation requirements.

Preliminary Municipality Law Violates the Utah Constitution

For more than a century, Utah has followed a constitutional principle shared by many states: municipal and land use authority must be exercised by elected officials accountable to the public—not by unelected private commissions. This safeguard protects local residents’ right to self-government, prevents cronyism, and ensures that local land use decisions are made by entities accountable to the local voters.

That principle was abandoned in 2024 when the Utah Legislature passed Senate Bill 258. The bill allows a single property owner to incorporate land as a “preliminary municipality” and appoint an unelected governing board with nearly all the powers of a city, including land-use and zoning authority—while excluding county residents from participation.

In effect, the statute removes authority from elected county officials and transfers it to politically unaccountable private developers.

Turning a Public Canyon into a Private Resor

Filed the same day SB 258 took effect, Echo Canyon’s application covers 176 acres along the Colorado River just downstream from Moab, including 70 acres of riparian floodplain and 100 acres of adjacent redrock benchlands. The proposal includes 580 homes, 100 overnight lodging units, and 72,000 square feet of commercial space.

The project would transform a largely undeveloped stretch of river—valued for wildlife habitat, cultural and archaeological resources, public lands access, extensive use by local businesses, and recreation—into a private luxury resort.

Laura Long of Kane Creek Development Watch said:

“This law appears to be intended specifically for Echo Canyon. The project faced strong local public opposition and major obstacles under county review. SB 258 sidesteps local land-use laws and cuts residents out of the process.”

Conflicts with Local Planning, Safety, and Water Law

The development conflicts with Grand County’s adopted land-use and zoning ordinances, which balance responsible development and economic activity with environmental protection and public safety.

Observers also note the preliminary municipality is not required to comply with Grand County floodplain standards and other regulations. The project proposes adding 10 feet of structural fill over 70 acres in a floodplain along the Colorado River to support buildings, raising serious concerns about flood risk and long-term liability.

Nearby landowner Cody Priano warns the narrow canyon contains known rock art and unsurveyed cultural resources that could be destroyed by large-scale construction. He also notes the statute contains no affordable housing requirements, despite Grand County's severe housing shortage. The resorts' lots are priced out of reach for local residents that need housing.

Long-time river advocate John Weisheit emphasized that the Echo Canyon developer is already the subject of a separate lawsuit filed by Living Rivers and Kane Creek Development Watch, requesting the Court order that the developer's claimed water rights have been abandoned and/or forfeited due to decades of non-use.

"The developer lacks valid and sufficient water rights to serve a municipality and made misleading claims to the Lieutenant Governor and feasibility study consultants about water availability," Weisheit said. "This new statute removes basic oversight in favor of a private developer seeking to avoid accountability."

Long concluded: "Utah's municipal incorporation laws exist to ensure grassroots incorporation and democratic governance by real residents. SB 258 discards those core values of the state and allows a single developer to create what is essentially a private government, and build without complying with county zoning and land use regulations, all to line their own pockets."

Media Brief

Case: Kane Creek Development Watch & Living Rivers v. Lt. Gov. of the State of Utah et al.

Court: Utah Seventh District Court

Filed: February 10, 2026

What's at Issue

A new Utah law (SB 258) allows a property owner to form a "preliminary municipality" governed by an unelected board with city-level powers. Plaintiffs argue the law violates the Utah Constitution's protections for democratic self-government.

Why It Matters

- Transfers land-use and zoning authority from elected officials to private developers
- Removes county oversight over previously unincorporated areas with no residents
- Eliminates county resident participation, elections, and accountability
- Sets a statewide precedent affecting rural counties across Utah
- Allows private developers to write their own land use code and other municipal ordinances

- Creates financial and safety risks to rural counties and their citizens because if the development fails, the county will be on the hook to take over any partially built infrastructure and debt obligations of the preliminary municipality

Echo Canyon Development

- 176 acres along the Colorado River near Moab
- 580 homes, 100 lodging units, 72,000 sq. ft. commercial
- Includes floodplain and culturally sensitive lands
- Detrimental impacts to the local economy – numerous Grand County guiding and recreation businesses rely on the Kane Creek/Kings Bottom area to serve their clients and make a living
- Increased water use and strain on local water resources and springs on public lands
- Risk to natural environment and protected cultural resources, including documented petroglyphs, grave site, and artifacts located on or adjacent to the property

Key Legal Claims

- SB 258 violates the state constitution by granting municipal powers and authority to entities with private governing board primarily made up of unelected officials.
- SB 258 violates the state constitution by arbitrarily targeting rural counties, as preliminary municipalities can only be created in Utah's lower-population counties.
- SB 258 violates the state constitution by allowing creation of a municipality that is neither a city, nor town, and contains no actual people.
- SB 258 violates the state and federal constitutions by removing the ability of Grand County residents to petition their elected representatives to redress grievances.
- SB 258, and Echo Canyon specifically, violates the state constitution by allowing Echo's governing board, who claim to be public officers, to make a profit from public money and/or property.
- As Echo Canyon itself is a constitutionally invalid entity, Echo Canyon's actions under the statute are invalid.
- The court should halt further action by Echo Canyon and the developers that have been supposedly authorized pursuant to the law

Related Issues

- Conflicts with Grand County land-use and zoning plans.
- Floodplain development/public safety concern.
- Separate from existing lawsuit challenging the developer's claimed water rights, which Watch and Living Rivers claim are subject to judicial forfeiture. The defendants filed motions to dismiss in that lawsuit, and a hearing on those motions is scheduled for March 19.

Plaintiffs

Kane Creek Development Watch
Living Rivers

Defendants

Diedre M. Henderson, in her capacity as Lieutenant Governor of the State of Utah;
Kane Creek Preservation and Development, LLC, a Delaware limited, liability company;
Craig Weston, an individual; and
Echo Canyon, a Utah preliminary municipality

FAQ — Myth vs. Fact

Myth: This law creates housing and supports local economies.

Fact: The statute does not require affordable housing or local workforce housing. Echo Canyon is a high-end resort development, not a housing solution for local residents. Moreover, it hurts the local economy by impeding the ability of local businesses to use the Kane Creek/Kings Bottom area, a critical area for Grand County's unique recreation economy

Myth: Preliminary municipalities are just another planning tool.

Fact: They grant nearly all municipal powers to developers—without elections, residents, or accountability. That is unprecedented in Utah.

Myth: The county still has oversight.

Fact: SB 258 strips counties of land-use and zoning authority within a newly created preliminary municipality's boundaries.

Myth: This project follows existing rules.

Fact: The law appears designed to allow the Echo Canyon proponents to bypass Grand County's land-use authority after the project faced strong opposition and regulatory hurdles.

Myth: The lawsuit is anti-development.

Fact: The lawsuit is pro-democracy. It challenges a process that replaces public decision-making with private control by an unelected commission.

Myth: The developer has secured all necessary water.

Fact: A separate lawsuit seeks a judicial finding that the developer's claimed water rights have been abandoned and forfeited due to decades of non-use.

Bottom Line:

Utah's constitution and traditional incorporation laws exist to protect local residents' right to self-determination, rural communities, and public safety. SB 258 undermines those values—and Echo Canyon is the test case

Glamping Projects in Grand and San Juan Counties

MAY 21, 2026

BY JOHN S. WEISHEIT

Getting a grip on glamping: a summary

Click [here](#) to read this story (with photos) in full by Moab journalist Rachel Fixsen for The Corner Post

Garfield County, Utah, welcomes the new Under Canvas glampground, which will bring economic benefits and jobs to the area. While some counties embrace glamping development, others, like Grand County, are grappling with the impact on housing and are considering regulations to ensure workforce housing and manage growth. Planners across the Four Corners area are adapting to the growing popularity of glamping and its implications for rural landscapes.

The ordinance is not intended to limit new glampgrounds in Garfield County. In fact, Figgins welcomes the new Under Canvas site, which will open its first phase after the construction of 50 tents, each with a private bathroom. Rates will start at about \$350 a night. Another 50 units are proposed for phase two and plans for a third phase include more luxurious tents that could cost as much as \$1,000 a night. The county's current glamping code would have to be amended, or an exemption created, to allow for that third phase to happen.

"They'll probably bring a lot of [transient room tax] and sales tax revenue to the county, but they've also been just great for the community," Figgins said, noting that Under Canvas has purchased several homes in Panguitch and Tropic to use as employee housing, and that they'll offer jobs to locals at higher-than-average wages. Figgins is upbeat about how the company's \$7.5 million investment in Garfield County could help its economy.

Other Utah counties have followed Garfield County's lead in creating glamping ordinances. Piute County's ordinance is closely modeled after it. Kane County has incorporated glamping into its land-use code, allowing glamping as a conditional use in its agricultural, rural and commercial zones.

While new development is seen as a boon in many parts of rural southern Utah, residents in other areas are feeling overwhelmed by the pace of growth.

In Grand County, for example, hotels and tourism businesses have proliferated while a dearth of housing options for local workers has created a crisis. County leaders have tried various tactics to spur the development of affordable housing, including requiring new overnight rental projects to offer assured workforce housing in order to get approval. Campgrounds, though, are exempt from this requirement under current code. The county is currently undertaking a broad overhaul of its land-use code, and some or

all campgrounds (or glampgrounds) may be subject to the assured housing requirement after the revision.

Grand County doesn't have a glampground ordinance, though it is receiving applications for glamping-style projects. Planning Administrator Elissa Martin said the county has received three this year, two using tent-style structures and one using small cabins. The county has removed any kind of overnight accommodations—hotels or campgrounds—as a permitted use in any zone; such developments must be considered by the county commission, and approval is based on how well those developments meet a set of desired criteria. Two of the three glampground applications were approved.

Grand is also working on defining glampgrounds in its code. Martin said officials are envisioning them as small developments with some kind of theme or purpose beyond just accommodation. For example, one of the approved glampgrounds brands itself as an astronomy education center and plans to offer guided stargazing.

One proposed high-end glampground along the north entry corridor into Moab (which was not approved) would have had significant impacts compared to some smaller glampgrounds—including a pool and clubhouse in an undeveloped area with limited water resources. At the same time, it offered a plan to put hundreds of acres of privately-owned open space into a conservation easement.

The proposal could return to the County Commission with a more favorable vote if the land-use code update allows the county to legally bind the developer to its conservation easement promise, something not provided in the current code.

While glamping isn't an entirely new concept, it is newly fashionable, and developers are eager to take advantage of untapped acreage in scenic landscapes. Planners across the Four Corners area will have to be as adaptive and creative as the newest resorts.

Additional Coverage and Opinions

- [Glamping development proposal near Moab is generating an uproar](#). By Zak Podmore for Salt Lake Tribune.
 - [Termination of the Under Canvas lease announced](#). By Ron Drake for The Moab Times-Independent.
 - [Thanking those who opposed Under Canvas Project](#). By Harry Holland for Moab Times-Independent.
 - [Horried for Looking Glass Rock](#). By Dailey Haren for Moab Times-Independent.
 - [Luxury eco-retreat proposed near 191 and 313 Junction](#). By Rachel Fixsen for Moab Sun News.
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