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July 20, 2021

University of Idaho

UNIVERSITY OF IDAHO
College of Natural Resources
EXPERIMENTAL FOREST

Idaho Department of Water Resources
Idaho Water Center
322 E Front St. Ste 648
Boise ID, 83702-7371

Subject: Palouse River Basin Adjudication Water Rights Sequence 11963

To whom it may concern,

Thank you for the returned comments regarding our water rights adjudication submitted for statutory claim sequence no. 11963 (UIEF Fire Pond 5). IDWR is correct that it is more appropriate to describe the source of this pond as an unnamed stream tributary to Flat Creek.

Additional evidence regarding the year of pond construction and the beneficial use of the pond is provided in the attached, published 1975 University of Idaho Experimental Forest (UIEF) Map, which clearly shows the Fire Pond 5 location. This map was developed from 1972 aerial photos. I have further included a 2013 UIEF map to document continued use of the pond. Current (2021) photographs show that we have previously constructed and maintained a native surface road system (UIEF Roads 11.167 and 11.167.53) with annual road grading and vegetation management to access and utilize water from this pond.

By signing this letter, I am verifying use by the University for the recent period 2012-2021, during which time I have served as Forest Manager and Director of the UIEF. Over this period, we have had a well-documented public access and hunting permit program (wildlife use) and specifically included various wildlife management objectives in our Forest Management Plan as part of the Idaho Tree Farm System (ITFS). We have conducted very active forest management and conducted dozens of state, private, and federally funded research projects with over $20,000,000 in associated sponsored research funding (industrial use).

Among other subject areas, the Experimental Forest has a globally recognized, 90+ year history of active prescribed fire use, teaching, and research. Relative to land size, the University actively uses prescribed fire in forest management at a higher frequency than most private and state forest landowners in the region. For this reason, storage and use associated with fire protection is of very high importance to our activities for safety purposes, and this use extends well beyond emergency uses. The UIEF maintains and regularly uses two Type VI wildland fire engines funded by the Idaho legislature via the Forest Utilization Research (FUR) program, a 1000-gallon water tender, numerous portable storage tanks, approximately 2 miles of hose lay and fittings, and several mobile pump systems in order to safely conduct prescribed fire management, research and

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JAN 19 2022

teaching. We regularly use prescribed fire to simulate forestry and fuel treatment effects on wildland fire behavior and can provide substantial, well-documented evidence of these activities as needed. At any time, we have between 6 and 10 staff with Type 2 firefighter (FFT2) qualifications or higher maintained in the Idaho Incident Qualification System (IQS) to support prescribed fire management, research and teaching activities on the UIEF. To illustrate the importance of this, Fire Pond 5, associated with sequence 11963, lies immediately in between two stands harvested in 2020-2021, as evident in the attached photo. These units are being prepared for prescribed burning in Fall 2021 and support an extensive water system to manage prescribed fire research being carried out along with that management. The objective of this research is to evaluate methods for treating forest fuels in order to reduce their water absorption, thereby extending our ability to conduct prescribed burning safely following initial fall precipitation events. This research is critical for increasing the safe use of prescribed fire by our state agencies and industrial forest landowners in Idaho, and the research requires extensive water use to be conducted: water is one of the two primary treatments being applied on over 60 acres of fuels adjacent to Pond 5.

Other research projects utilizing water intensively on the UIEF have included some of the following, provided only as additional, illustrative examples. From the mid-1940s to 1960s, over 800-acres of the East Hatter management area was maintained as a fenced wildlife enclosure used for manipulative game, browsing, and predation research funded by the University, the US Fish and Wildlife Service, and Idaho Fish and Game. From 2015-2019, a large, Joint Fire Sciences Program (JFSP) project was conducted that used water regularly to manipulate fuel moistures and to manage prescribed fire use safely in order to study wildland fire behavior in a variety of conditions in three forest stands spanning approximately 70 acres total, but separated at 3 distinct locations spanning over 2 miles of driving distance. Currently, two large installations funded by the National Science Foundation, including one utilizing water from Pond 4 at Flat Creek, are evaluating water use in intermediate and mature forests. Dr. Tara Hudiburg received the Presidential Early Career Science Award from the White House for this research in 2019. Numerous, similar published studies evaluating seedling physiology and growth have required irrigating forest seedlings to study survival, growth and yield for periods from 1 to 25 years, as evident by searching on web-based databases of published literature such as Google Scholar using the search term 'University of Idaho Experimental Forest'.

Evidence of regular grazing use includes a general description of early uses written previously by former UIEF Forest Manager Harold Osborne. More recent grazing use at Flat Creek from 2012-2021 has included, at different times, over 500 sheep, 100+ cows associated with the Vandal Meats program, and 700-1100 goats from 2019-2021 used for fuels mitigation and fire behavior research. As evidence, a recent picture of goats from 2021 is shown; these are a small number of animals from a herd of over 700.

Please let me know if you have additional questions about sequence 11963 and I will be happy to provide further information as needed.

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Robert F. Keefe

Robert F. Keefe
Forest Manager and Director
University of Idaho Experimental Forest
University of Idaho
875 Perimeter Drive
Moscow, ID 83844-1133

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Additional Evidence of Use – Sequence 11963

Figure 1: 2021 image of Fire Pond 5 showing actively used access road and approach. Evidence of current (2020-2021) forest management activities utilizing water are apparent, immediately adjacent on both sides of the pond. These activities are well-documented with Idaho Dept. of Lands as part of the TS-2020-02 Cabin Cleanup timber sale. Subsequent (fall 2021) prescribed burning activities in stands just outside the frame of the picture include substantial water use. The primary objective of this research is to evaluate new treatment methods and applications that make it possible for forest landowners to safely implement prescribed burning under broader operational treatment windows. Water from Pond 4 (Sequence 11962) and Pond 5 is the primary source for this research, associated teaching activities, and associated fire management. Similar forestry and fire management research has been carried out on the Flat Creek Unit since the late 1930s.

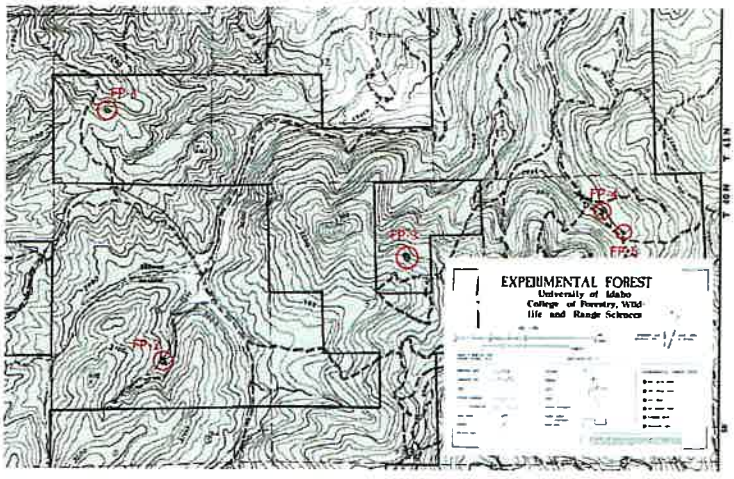

Figure 2: Published 1975 University of Idaho Experimental Forest Administrative Map clearly showing Fire Pond 5 at right. A copy of the legend has been pasted on the map clipping to save space. Legend text indicates that the map was developed from 1972 aerial imagery, documenting that priority date. Actual construction was at an earlier time and may correspond to Potlatch Logging Camp 1, which was

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JAN 19 2022

located approximately 0.5 miles away on the UIEF in 1905-1910 after being moved from Hatter Creek. However, we have not yet successfully located records of the pond's construction at that time.

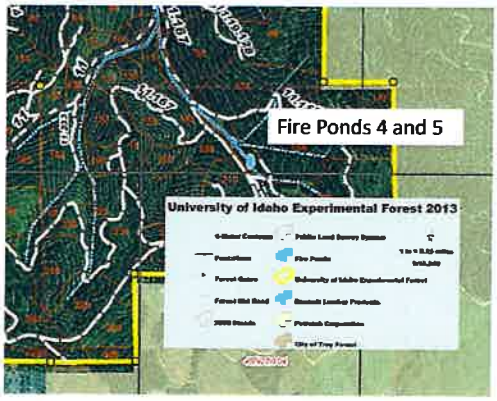

Figure 3: Clipped image of 2013 UIEF Forest Administrative Map showing location of Pond 5. Additional label ('Fire Ponds 4 and 5') and copy of original (2013) Legend scheme showing University use have been pasted on the image to save space.

Figure 4: Graduate student Kathryn Baker measuring needle photosynthesis in the canopy while conducting research evaluating daily water use of intermediate-aged ponderosa pine trees approximately 0.5 miles from Pond 5, sequence 11963. Baker's doctoral research, working with Drs Dan Johnson and Dr. Tara Hudiburg between 2013 and 2017, also included studies evaluating water use in pre-commercial thinned western larch and white pine stands immediately south of Fire Pond 4 and 5, as

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JAN 19 2022

well as a two-year study evaluating irrigated conifer seedlings approximately 0.5 miles north of the ponds. This latter study simulated drought effects on seedling survival and growth and required regular irrigation over a two-year period.

Figure 5: Both Pond 5 and Pond 4 further serve as the primary source for staging water for structure protection at the UIEF Flat Creek Cabin (shown above, 2020) during prescribed burning for management, research, teaching, and other events. The Flat Creek Cabin is less than 0.25 miles from Pond 4. Both ponds are regularly used for research and teaching purposes during forestry, wildlife, and other University of Idaho course field trips and have permanent game cameras to document wildlife uses. The Flat Creek Cabin has been the University's primary field teaching and outreach facility at Flat Creek since 1947.

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JAN 19 2022

April 1981

The U. of I. Experimental Forest

Livestock Use History

by

Harold Osborne, Forest Manager

Our records of the range use are sketchy. The old timers in our area recall cattle, sheep and horses grazing the Flat Creek and Hatter Creek drainages around 1910. Sheep use was probably prevalent in the 1920's when such names as High Sheep Camp came about. More recently correspondence in old Experimental Forest files shed some light on the range use.

Henry Peters of Asotin, Washington applied and was granted a permit to graze 1000 head of ewes with lambs between June 15 and August 15, 1943 in the East Fork of Hatter Creek and the Flat Creek drainages. Fee was $.10 per head.

Ernest P. Klewene of Clarkston, Washington -- 1200 head of ewes with lambs from June 15 to August 15, 1944 in the East Fork of Hatter Creek and the Flat Creek drainages.

February 9, 1944 -- Formation of the Hatter Creek Cattleman's Association later known as the Flat Creek-Hatter Creek Cattleman's Association. My records indicate 21 members.

1946 -- 280 head on permit for 5 months.

1949 -- 284 head (+ calves), 20 different owners for a period of 5 months (May 15 - October 15). No division fences were present.

1950-mid 1960's -- 250-300 head, two-thirds of which are on the Flat Creek side of the range for a 5 month period.

1960's to mid 1970's -- my records are sketchy for this period. The Palouse District of the USFS evidently took over the management of the range during this period. Numbers and period of use and distribution were not much different than for the 1950's.

1975-1978 -- reduction in numbers. The U-I range was estimated to provide forage for 160 animal units. An effort was made to develop a 2 pasture system in the Flat Creek area. Grazing season of May 15 to September 15. Livestock did remain on the range though until mid-October.

The allotment has an estimated capacity of 306 animal units for 4 months.

1979-1980 -- construction of 2 pasture division fences (2 miles). 175 cows with calves, May 15 - September 15.

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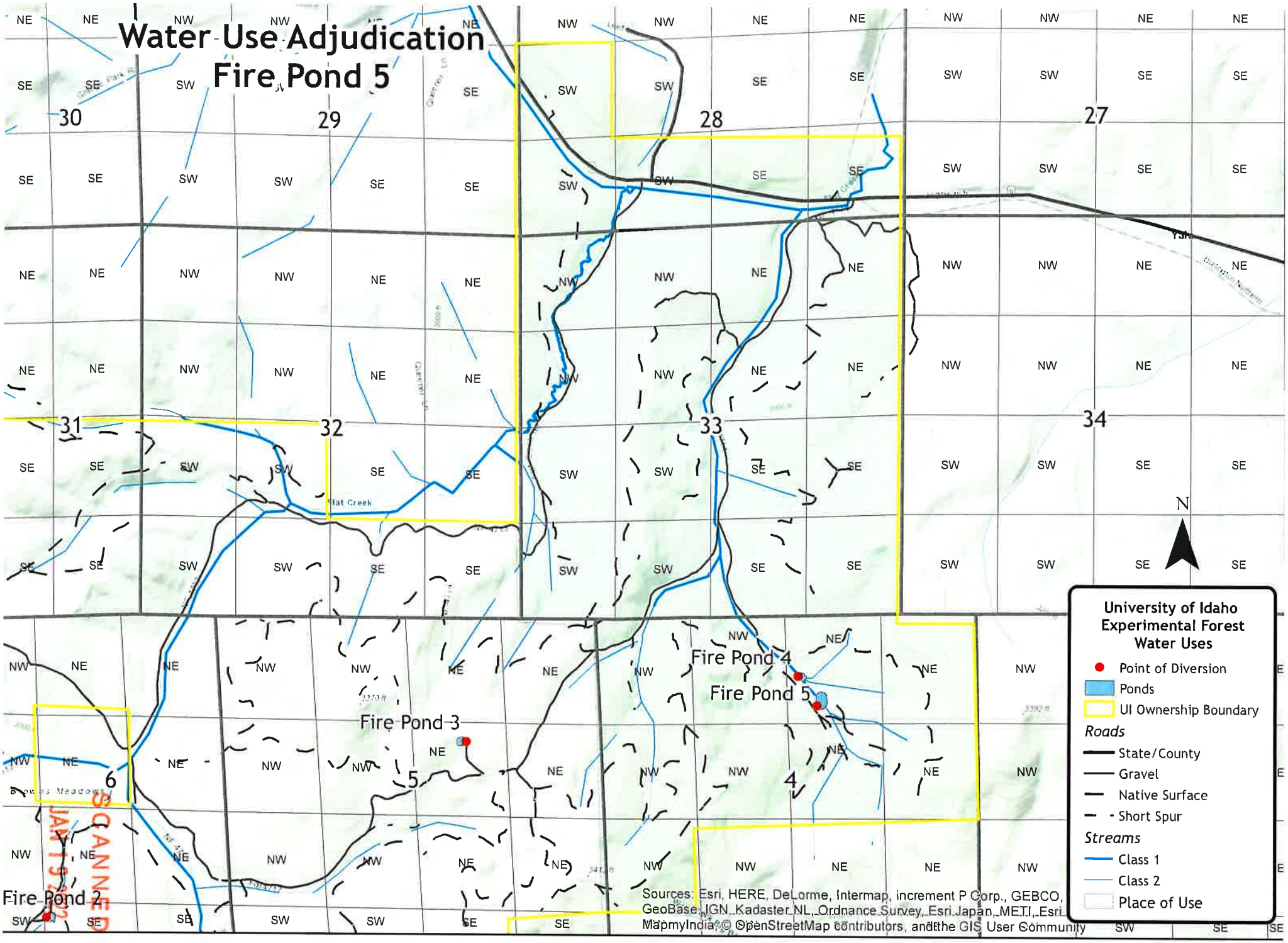
JAN 19 2022



1 in = 1,667 feet 1:20,000