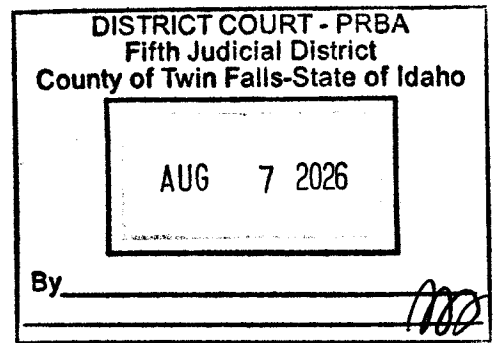


RAÚL R. LABRADOR
ATTORNEY GENERAL

JOY M. VEGA
Deputy Attorney General
Chief, Energy and Natural Resources Division

DAVID S. PERKINS, ISB No. 4381
ROWDY J. KELLER, ISB No. 12494
Deputy Attorneys General
Energy and Natural Resources Division
700 W. State St, 2nd Floor
Boise, ID 83720-0010
Telephone: (208) 334-2400
Facsimile: (208) 854-8072
Email: joy.vega@ag.idaho.gov
david.perkins@ag.idaho.gov
rowdy.keller@ag.idaho.gov

Attorneys for Objector State of Idaho



**IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF
THE STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS**

IN RE: PRBA

Case No. 59576

Subcase Nos: **Attachment A**

**DECLARATION OF COUNSEL IN
SUPPORT OF STATE OF IDAHO'S
RESPONSE TO UNITED STATES'
MOTION TO EXCLUDE EXPERT
WITNESSES**

I, Rowdy Keller, declare and state as follows:

1. I am a competent adult over eighteen years of age and the following is based on my personal knowledge.

2. I am a Deputy Attorney General with the Office of the Attorney General and am authorized to practice law before this and all courts of the State of Idaho.

3. I am counsel for the State of Idaho in the above-captioned action.

4. Attached hereto as Exhibit A is a true and correct copy of the United States' Rule 26(b)(4) Disclosure dated March 3, 2025.

5. Attached hereto as Exhibit B is a true and correct copy of the relevant excerpts from the United States' Second Response to State of Idaho's First Set of Requests for Admission, Interrogatories, and Requests for Production of Documents dated April 18, 2025.

I declare under penalty of perjury, under the laws of the State of Idaho that the foregoing is true and correct.

Dated this 6th day of August 2026.

/s/ Rowdy Keller
ROWDY J. KELLER
Deputy Attorney General

EXHIBIT A

LISA LYNNE RUSSELL
Deputy Assistant Attorney General

VANESSA BOYD WILLARD
Tribal Resources Section
Environment & Natural Resources Division
U.S. Department of Justice
999 18th Street, South Terrace, Suite 370
Denver, Colorado 80202
Tel. (303) 844-1349
Fax (303) 844-1350
vanessa.willard@usdoj.gov
and

EMMI BLADES
LAURA BOYER
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 2004-7611
Phone: (202) 598-0661
Fax: (202) 353-1156
emmi.blades@usdoj.gov
laura.boyer@usdoj.gov

Attorneys for the United States

**IN THE DISTRICT COURT FOR THE FIFTH JUDICIAL DISTRICT OF
THE STATE OF IDAHO IN AND FOR THE COUNTY OF TWIN FALLS**

In Re the PRBA

Case No. 59576

)
) Subcase Nos. Attachment A
)
) **UNITED STATES'**
) **RULE 26(b)(4) DISCLOSURE**
)
)

The United States hereby provides these written disclosures pursuant to Rule 26(b)(4) of the Idaho Rules of Civil Procedure; the Court's December 12, 2024, *Order on Motion to Enter Litigation Schedule for Federal Claims* ("Order"); and the parties' agreement to extend the Claimants' Rule 26 witness disclosures deadline set in the Order to March 3, 2025. The following expert witnesses have been retained by the United States to testify at trial in support of

the United States' federal reserved water right claims on behalf of the Nez Perce Tribe and Allottees on the Nez Perce Indian Reservation. The subject matter of testimony and related claim category for each witness is included. The qualifications of each witness are provided in resumes or curriculum vitae disclosed herewith, which include a list of any publications authored by the witness within the preceding ten years and a list of cases in which the witness has testified as an expert at trial or by deposition within the preceding four years.

1. **Clair Yoder** is an engineer, Kleinschmidt Associates, with expertise in hydrology and hydraulics. Ms. Yoder will testify regarding field data collection and the compilation and review of available information in support of the presence of a spring or fountain. Her hourly rate is \$267.

2. **Joetta Zablotney** is a GIS specialist, Kleinschmidt Associates, with expertise in mapping and Geographic Information Systems (GIS). Ms. Zablotney will testify regarding GIS data related to defining the location of the springs and fountains claims within the Palouse River Basin Adjudication project area. Her hourly rate is \$224.

3. **Paul Hamai** is an engineer, Natural Resource Consulting Engineers, Inc., with expertise in civil engineering and domestic and municipal water use. Mr. Hamai will testify regarding the water rights claims for domestic purposes, including stockwatering. Mr. Hamai's hourly rate is \$275.

4. **Ian Smith** is a Principal Historian, Historical Research Associates, Inc., Missoula, Montana. Mr. Smith will testify based on research in both primary and secondary historical sources regarding the historical purposes and circumstances surrounding the establishment of the Nez Perce Indian Reservation in 1855, the alteration of the reservation's

boundaries in 1863, and the Tribe's retention of off-reservation use rights under the 1855 and 1863 treaties, which authorized Nez Perce tribal members to continue engaging in traditional practices such as fishing, hunting, gathering roots and berries, pasturing livestock, and using springs on lands located outside reservation boundaries. Mr. Smith will also offer testimony related to the allotment of the Nez Perce Reservation in the early 1890s and the issuance of trust patents to Nez Perce allottees whose allotments lie within the Palouse River Basin. Mr. Smith's hourly rate is \$171.

DATED this 3rd day of March 2025.

Respectfully submitted,

Lisa Lynne Russell
Deputy Assistant Attorney General

A handwritten signature in black ink, appearing to read "Vanessa Boyd Willard", is written over a horizontal line.

Vanessa Boyd Willard
Emmi Blades
Laura Boyer
Trial Attorneys, Tribal Resources Section
Environment & Natural Resources Division
United States Department of Justice

CERTIFICATE OF SERVICE

I certify that an original copy of the UNITED STATES RULE 26(b)(4) DISCLOSURE was sent via electronic mail and/or U.S. Post to the parties below on this 3rd day of March 2025.

STATE OF IDAHO

Represented by:
Chief Natural Resources Division
Office of the Attorney General
PO BOX 83720
Boise, ID 83720-0010
Scott.Campbell@ag.idaho.gov
joy.vega@ag.idaho.gov
David.Perkins@ag.idaho.gov

NEZ PERCE TRIBE OF THE UNITED STATES OF AMERICA

Represented by:
Michael A. Lopez
Nez Perce Tribe Legal Counsel
100 Agency Rd.
Lapwai, ID 83540
mlopez@nezperce.org

NEZ PERCE TRIBE OF THE UNITED STATES OF AMERICA

Represented by:
Thomas Murphy
Steven C. Moore
Native American Rights Fund
250 Arapahoe Ave
Boulder, CO 80302
murphy@narf.org

Director of IDWR
P.O. Box 83720
Boise, ID 83720

John K. Simpson
101 S. Capitol Blvd, Ste 1200
Boise, ID 83701
jsimpson@martenlaw.com

Travis L. Thompson
Abigail R. Bitzenburg
163 Second Ave West
Twin Falls, ID 83303-003
tthompson@martenlaw.com
abitzenburg@martenlaw.com

James Browitt
Browitt Law Office
1317 Prospect Ave
Lewiston, ID 83501
jbrowitt@browittlaw.com

Norman M. Semanko
Parsons Behle & Latimer
800 W. Main Street, Ste 1300
Boise, ID 83702
NSemanko@parsonsbehle.com

Candice M. McHugh
Chris Bromley
P.O. Box 107
Boise, ID 83701
cmchugh@mchughbromley.com
cbromley@mchughbromley.com

Michael P. Lawrence
Charlie S. Baser
601 W. Bannock St.
Boise, ID 83701
mpl@givenspursley.com
charliebaser@givenspursley.com



ATTACHMENT A
ALLOTMENT SUBCASES

87-12157
87-12158

INSTREAM FLOW SUBCASES

Group F2

87-11982	87-11988	87-11994	87-12000
87-11983	87-11989	87-11995	87-12001
87-11984	87-11990	87-11996	87-12002
87-11985	87-11991	87-11997	87-12003
87-11986	87-11992	87-11998	87-12004
87-11987	87-11993	87-11999	

SPRINGS AND FOUNTAINS SUBCASES

87-12366
87-12338

Group F3

87-12005	87-12027	87-12051	87-12077
87-12006	87-12028	87-12052	87-12078
87-12007	87-12029	87-12053	87-12079
87-12008	87-12030	87-12054	87-12080
87-12009	87-12031	87-12055	87-12081
87-12010	87-12032	87-12056	87-12082
87-12011	87-12033	87-12057	87-12083
87-12012	87-12034	87-12059	87-12084
87-12013	87-12036	87-12060	87-12085
87-12014	87-12037	87-12062	87-12086
87-12015	87-12038	87-12063	87-12088
87-12016	87-12039	87-12064	87-12089
87-12017	87-12040	87-12066	87-12090
87-12018	87-12041	87-12067	87-12092
87-12019	87-12042	87-12068	87-12106
87-12020	87-12043	87-12069	87-12107
87-12021	87-12044	87-12071	87-12108
87-12022	87-12045	87-12072	87-12111
87-12023	87-12046	87-12073	87-12342
87-12024	87-12047	87-12074	
87-12025	87-12048	87-12075	
87-12026	87-12049	87-12076	

Group F4

87-12050	87-12118	87-12140	87-12164*
87-12091	87-12119	87-12141	87-12165*
87-12093	87-12120	87-12142	87-12166*
87-12095	87-12121	87-12143	87-12167*
87-12096	87-12122	87-12144	87-12168*
87-12097	87-12123	87-12145	87-12169*
87-12098	87-12124	87-12146	87-12170*
87-12099	87-12125	87-12147	87-12171*
87-12100	87-12126	87-12148	87-12172*
87-12101	87-12127	87-12149	87-12173*
87-12102	87-12128	87-12150	87-12174*
87-12103	87-12129	87-12151	87-12175*
87-12104	87-12130	87-12152	87-12176*
87-12105	87-12131	87-12153	87-12337
87-12109	87-12132	87-12154	87-12339
87-12110	87-12133	87-12155	87-12340
87-12112	87-12134	87-12156	87-12343
87-12113	87-12135	87-12159*	87-12344
87-12114	87-12136	87-12160*	87-12346
87-12115	87-12137	87-12161*	87-12364
87-12116	87-12138	87-12162*	87-12365
87-12117	87-12139	87-12163*	



Paul Hamai, M.S., PE

Vice President of Water Resources

Mr. Hamai has more than 30 years of experience in civil engineering and hydrology. At NRCE, Mr. Hamai serves as the office manager of the California office as well as the project manager for several studies, including comprehensive water development plans, water system project development, water demand forecasting, and water rights claims studies. His duties in these capacities include engineering design, hydrologic analyses, water needs assessments, water allocation modeling, water rights negotiation and management support, and coordination with clients.

EMPLOYMENT HISTORY

Vice President of Water Resources February 1992 – Present
Natural Resources Consulting Engineers, Inc. – Oakland, CA

- Provides technical support for water rights negotiations, water resources development, and water resources management.
- Designs and prepares cost estimates of distribution systems, pump stations, groundwater wells, canals, and dams.
- Designs and prepares cost estimates of irrigation pipelines and drainage systems.
- Determines present and future water needs for water resources planning.
- Conducts hydraulic analyses of pipeline distribution networks.
- Develops water allocation and reservoir evaluation computer models.
- Manages hydrologic studies of flood magnitudes and water surface profiles.
- Prepares drought mitigation plans.
- Conducts undepleted flow studies for various river systems.
- Leads computer modeling studies to determine water budgets and compliance with decreed water rights.
- Serves as the primary technical consultant in water rights disputes for various Tribes.
- Prepares expert witness reports for use in water rights litigation.

EDUCATION

M.S. Civil Engineering
University of California Berkeley
Berkeley, CA 1991

B.S. Civil Engineering
University of California
Los Angeles
Los Angeles, CA 1990

PROFESSIONAL REGISTRATIONS

Professional Civil Engineer
California #54971
Montana #86588
Nevada #030691
Washington #23009642

RELEVANT SKILLS

GIS Graphics Software
ArcGIS Suite, AutoCAD, Surfer
Programming Languages
FORTRAN, BASIC
Hydrologic Modeling
HEC-1, HEC-2, Waterworks,
EPANET, HYDROSS

Environmental Scientist July 1991 – January 1992

Science Applications International Corporation – Los Altos, CA

- Performed legal authority reviews of municipal wastewater ordinances.
- Conducted industrial wastewater treatment compliance inspections and treatment plant diagnostic inspections.
- Performed biological surveys for assessing damages.

SAMPLE PROJECTS

Walker River Basin Adjudication, NV- NRCE is the main project contractor working for the United States on the Walker River Indian Reservation water rights quantification. Mr. Hamai has conducted several studies for this purpose including an estimate of present and future domestic, commercial, municipal, and industrial (DCMI) water needs and an analysis of evidence of groundwater pumping on river flows. Mr. Hamai also performed an undepleted flow study of the Walker River, led a water rights modeling study, developed a water allocation model to determine how to best utilize the available river flow on the Walker River Indian Reservation to serve a future irrigation project, including the operation of Weber Reservoir. Mr. Hamai served as the lead technical consultant for the United States in the Walker River Mediation and participated on the Hydrology Team during that process. Mr. Hamai also assisted the United States to develop an accounting tool to track the movement of acquired water rights through the Walker River Indian Reservation and down to Walker Lake.

Tule River Indian Reservation, CA - NRCE provided technical assistance to the Tule River Tribe during its negotiations with other water users over water rights to the South Fork Tule River. Mr. Hamai participated in the negotiation meetings and conducted and led several technical studies, including damsite identification and selection, water demand forecasting, streamflow record extension, reservoir sizing, water allocation modeling, and water distribution system design. Mr. Hamai also led an NRCE study to identify the Practicably Irrigable Acreage on the Tule River Indian Reservation and design a water supply project to serve those lands. Mr. Hamai also participated on behalf of the Tule River Tribe in a Value Planning Study led by the US Bureau of Reclamation to evaluate water supply project alternatives. The Tule River Tribe is now using the results of these studies as the basis for a future dam and water distribution project on the reservation to be funded by the federal government as part of a comprehensive water rights settlement.

Hualapai Indian Reservation, AZ - NRCE assisted the Hualapai Nation to quantify its water rights on its various reservation lands in Arizona. These lands include the Hualapai Main Reservation, with its northern boundary defined by the Colorado River as it flows through a portion of the Grand Canyon, and the Big Sandy Parccels, located in the Big Sandy River Basin. Mr. Hamai led studies to estimate current and future water demands on the reservation lands, including domestic, municipal, commercial, industrial, agricultural, fish hatchery, and livestock uses. Grand Canyon West is a Hualapai commercial development located within the Main Hualapai Reservation on the rim of the Grand Canyon. NRCE estimated future water demands for this development, and Mr. Hamai led investigations of several water supply alternatives, including projects from the Colorado River. Mr. Hamai also served as the Hualapai Tribe's principal technical adviser during water rights negotiations with the United States, State of Arizona, and various State parties. NRCE is now working with the Tribe and US Department of the Interior to further evaluate the water project alternatives for Grand Canyon West based on project costs, reliability, and long-term yields relative to anticipated demands.

Paul Hamai, M.S., PE – NRCE

Kickapoo Indian Reservation, KS – NRCE is assisting the Kickapoo Tribe in Kansas to quantify its water rights and develop a water storage project. Mr. Hamai has served as project manager for several studies including a preliminary quantification of the Tribe's future water needs, mapping of alternative damsites on the Reservation, water supply modeling, and a review of conditions in the upstream watersheds. In the Tribe's ongoing litigation over its water rights, Mr. Hamai authored expert witness reports on the impacts of upstream ponds and improved agricultural practices on the Tribe's water supply and a cost opinion for a groundwater project.

Pueblo of San Felipe, NM - NRCE was contracted by the Pueblo of San Felipe to assist the Tribe in preparing for the upcoming water rights adjudication in the Rio Grande River Basin. Mr. Hamai served as project manager on several studies, including an inventory and assessment of the irrigation conveyance systems within the Pueblo's boundaries. The inventory was performed through review of aerial photographs, a series of field visits, and photo documentation. An assessment of the Pueblo's conveyance system was then made based on field observations during both active operational conditions and during a cleaned and dry state. The analysis provided a series of recommendations to improve the adequacy and reliability of the system for provision of water to the Pueblo farms. An Access® database was developed to incorporate the information collected during the assessment. The database includes data on all the turnouts and check structures within the conveyance system. It can be used to administer the Pueblo's operation and maintenance program as well as a tool to assist in rehabilitating system infrastructure.

Navajo Nation, AZ - Mr. Hamai led several studies to support water rights claims submitted by the United States on behalf of the Navajo Nation in the Little Colorado River Basin Adjudication in Arizona. These studies included estimates of present and future water use for domestic, commercial, municipal, and industrial (DCMI) purposes, and design and cost estimates of large-scale water treatment and drinking water pipeline conveyance projects to serve the various Navajo chapters in the state. Mr. Hamai authored expert witness reports on these subjects and provided testimony at deposition and trial.

Coeur d'Alene Reservation, ID – NRCE has been hired by the US Bureau of Indian Affairs to assist in the preparation of federally reserved water rights claims for the Coeur d'Alene. This work is being done for the federal government to support the Tribe's water rights claims in the Northern Idaho Coeur d'Alene - Spokane River Adjudication. NRCE's tasks consist of groundwater and surface water resources investigations, determination of crop water requirements, and engineering design. Mr. Hamai is serving as project manager as well as lead investigator on water supply and Practicably Irrigable Acreage (PIA) studies. The water supply study consists of a determination of how much irrigated acreage can be served by the flow of several different creeks within the Coeur d'Alene Reservation. The PIA study consists of the design of multiple irrigation projects on the Coeur d'Alene Reservation served by those creeks. The purpose of the PIA study is to demonstrate the feasibility of irrigated agriculture, thereby forming a basis to quantify the Tribe's water rights. NRCE's engineering design work consists of the design and cost estimation of irrigation facilities, including on-farm drip and micro-sprinkler systems, pipelines, pumps, groundwater wells, and storage ponds.

Lummi Indian Nation, WA - NRCE was hired by the Lummi Indian Business Council to prepare a reservation-wide surface water claim for the Lummi Indian Reservation. Mr. Hamai served as project manager for this study, which included a determination of historic and present water uses and future water requirements for domestic, commercial, municipal, industrial (DCMI), and agricultural uses. DCMI water requirements were determined from water records, population projections, land zoning factors, and comparison with neighboring communities. Agricultural water uses were determined using the Practicably Irrigable Acreage standard. NRCE also provided support in the Tribe's litigation over its groundwater resources, which was concluded through a negotiated settlement. During that process Mr. Hamai led a study to determine the Tribe's groundwater needs, including fish hatchery needs. Mr. Hamai was one of the named expert witnesses for the Tribe during the litigation and provided testimony at deposition.

Paul Hamai, M.S., PE – NRCE

Duck Valley Indian Reservation, NV and ID – Mr. Hamai performed a water supply modeling study for the Duck Valley Indian Reservation as part of the Snake River Basin Adjudication and authored an expert witness report based on this study. The purpose of this study was to determine the potential water supply from the Owyhee River to serve the Duck Valley Indian Reservation's existing and future irrigation demands under a future water supply project consisting of several reservoirs and groundwater wells. Mr. Hamai created a linear program computer model to optimize the operation of the reservoirs for beneficial use of the water supply and conducted an undepleted flow study of the Owyhee River to obtain a long-term representative hydrologic record for use in the model.

Hopi Indian Reservation, AZ – Mr. Hamai led several studies to support water rights claims submitted by the United States on behalf of the Hopi Tribe in the Little Colorado River Basin Adjudication. These studies included estimates of present and future water use for domestic, commercial, municipal, and industrial (DCMI) purposes, design and cost estimate of a groundwater supply project to serve heavy industrial demand, and a cost estimate for a high voltage electrical transmission project. Mr. Hamai authored expert witness reports on all three of these subjects and provided testimony at deposition and trial.

PUBLICATIONS

- Hamai, P. "Design and Cost Analysis of Distribution Facilities and Drainage Systems for Future Irrigation Development in the Toppenish-Simcoe and Satus Sub-Basins, Yakima Indian Reservation, Yakima, Washington." Prepared for the U.S. Department of Justice, Washington, D.C., November 1994. *State of Washington Ecology Department v. Acquavella*.
- Hamai, P. "Water Allocation Model for the Duck Valley Indian Reservation." Prepared for the Bureau of Indian Affairs, Pacific Northwest Region, April 14, 2005. *Snake River Basin Adjudication, Case No. 39576*.
- Hamai, P. "Preliminary Cost Estimate, Kickapoo Groundwater Delivery Project." Prepared for the Kickapoo Tribe in Kansas, Horton, KS, September 4, 2012. *Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas v. United States Bureau of Indian Affairs, Kansas Department of Agriculture, and Nemaha-Brown Watershed Joint District No. 7*.
- Hamai, P. "Water Supply Shortage Analysis for the Kickapoo Indian Reservation." Prepared for the Kickapoo Tribe in Kansas, Horton, KS, December 14, 2012. *Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas v. United States Bureau of Indian Affairs, Kansas Department of Agriculture, and Nemaha-Brown Watershed Joint District No. 7*.
- Hamai, P. "Hopi Indian Reservation, Current and Future DCMI Water Use Rates." Prepared for the United States Department of Justice. January 2017. *Little Colorado River Adjudication in Arizona (Civil No. 6417)*.
- Hamai, P. "Hopi Indian Reservation, Groundwater Supply Project." Prepared for the United States Department of Justice. March 2017. *Little Colorado River Adjudication in Arizona (Civil No. 6417)*.
- Hamai, P. "Hopi Indian Reservation, Power Transmission Project Cost Estimate." Prepared for the United States Department of Justice. March 2017. *Little Colorado River Adjudication in Arizona (Civil No. 6417)*.
- Hamai, P. "Hopi Indian Reservation, Power Transmission Project Cost Estimate (Amended Report)." Prepared for the United States Department of Justice. December 2017. *Little Colorado River Adjudication in Arizona (Civil No. 6417)*.
- Hamai, P. "Hopi Indian Reservation, Present DCMI Water Use." Prepared for the United States Department of Justice. December 2017. *Little Colorado River Adjudication in Arizona (Civil No. 6417)*.
- Hamai, P. "Hopi Indian Reservation, Future DCMI Water Use: Response to Opposition Reports." Prepared for the United States Department of Justice. August 2018. *Little Colorado River Adjudication in Arizona (Civil No. 6417)*.

Paul Hamai, M.S., PE – NRCE

- Hamai, P. "Hopi Indian Reservation, Future DCMI Water Demand." Prepared for the United States Department of Justice. March 2019. Little Colorado River Adjudication in Arizona (Civil No. 6417).
- Hamai, P. "Upper Walker River Basin, Evidence of Impacts to Surface Water Flows from Groundwater Pumping." Prepared for the United States Department of Justice. July 2020. United States of America, et al. vs. Walker River Irrigation District, et al. (In Equity No. C-125-MDD, Subproceeding 3:73-CV-00127-MDD-WGC).
- Hamai, P. "Walker River Indian Reservation, Lower Walker River Water Accounting Model." Prepared for the United States Department of Justice. July 2020. United States of America, et al. vs. Walker River Irrigation District, et al. (In Equity No. C-125-MDD, Subproceeding 3:73-CV-00127-MDD-WGC).
- Hamai, P. "Walker River Indian Reservation, Analysis of Present and Future DCMI Water Use Rates." Prepared for the United States Department of Justice. August 2020. United States of America, et al. vs. Walker River Irrigation District, et al. (In Equity No. C-125-MDD, Subproceeding 3:73-CV-00127-MDD-WGC).
- Hamai, P. "Upper Walker River Basin, Evidence of Impacts to Surface Water Flows from Groundwater Pumping (Amended Report)." Prepared for the United States Department of Justice. January 2021. United States of America, et al. vs. Walker River Irrigation District, et al. (In Equity No. C-125-MDD, Subproceeding 3:73-CV-00127-MDD-WGC).
- Hamai, P. "Upper Walker River Basin, Evidence of Impacts to Surface Water Flows from Groundwater Pumping: Response to Bergfeld Report." Prepared for the United States Department of Justice. April 2021. United States of America-Walker River Paiute Tribe. vs. Walker River Irrigation District, et al. (In Equity No. C-125-MDD, Subproceeding 3:73-CV-00127-MDD-WGC).
- Hamai, P. "Navajo Nation Present, Future, and Maximum Historic DCMI Water Use Estimates." Prepared for the United States Department of Justice. April 2021. Little Colorado River Adjudication in Arizona (Civil No. 6417-300).
- Hamai, P. "Navajo Nation Future DCMI Water Supply Project." Prepared for the United States Department of Justice. April 2021. Little Colorado River Adjudication in Arizona (Civil No. 6417-300).
- Hamai, P. "Estimate of Future Public Supply Domestic and Municipal Water Use for the Coeur d'Alene Tribe." Prepared for the United States Department of Justice. May 2024. Northern Idaho Adjudication of the Coeur d'Alene-Spokane River Basin (Idaho Code § 42-1406B).
- Hamai, P. "Practicably Irrigable Acreage Studies for the Coeur d'Alene Tribe: Project Layouts, Water Supply Model, and Engineering Design and Cost Estimation." Prepared for the United States Department of Justice. May 2024. Northern Idaho Adjudication of the Coeur d'Alene-Spokane River Basin (Idaho Code § 42-1406B).

DEPOSITIONS AND TESTIMONY

Depositions

- June 29, 2004. Seattle, WA – United States-Lummi Nation vs. State of Washington Department of Ecology, et al. United States District Court, Western District of Washington
- January 17, 2018. Scottsdale, AZ - In Re the General Adjudication of all Rights to use Water in the Little Colorado River System and Source (No. CV 6417-203). Superior Court of the State of Arizona.
- July 30-31, 2019. Phoenix, AZ - In Re the General Adjudication of all Rights to use Water in the Little Colorado River System and Source (No. CV 6417-203). Superior Court of the State of Arizona.
- March 21, 2022. Phoenix, AZ - In Re the General Adjudication of all Rights to use Water in the Little Colorado River System and Source (No. CV 6417-300). Superior Court of the State of Arizona.
- January 23, 2025. Denver, CO - Pueblo of Sandia, Protestant, Appellant, v. City of Rio Rancho, Annabelle M. Benavidez, and Andres A. Benavidez, Co-Applicants-Appellees, and Mike Hamman, New Mexico State Engineer, Appellee. Pueblo of Sandia, Protestant, Appellant, v. City of Rio

Paul Hamai, M.S., PE – NRCE

Rancho and Scott Todd, LLC, Co-Applicants-Appellees, and Mike Hamman, New Mexico State Engineer, Appellee.

Testimony

September 20, 2018. Phoenix, AZ - In Re the General Adjudication of all Rights to use Water in the Little Colorado River System and Source (No. CV 6417-203). Superior Court of the State of Arizona.
September 17 and September 23, 2020. Phoenix, AZ (testimony given remotely) - In Re the General Adjudication of all Rights to use Water in the Little Colorado River System and Source (No. CV 6417-203). Superior Court of the State of Arizona.
May 16, 2023. Phoenix, AZ - In Re the General Adjudication of all Rights to use Water in the Little Colorado River System and Source (No. CV 6417-300). Superior Court of the State of Arizona.

Paul Hamal, M.S., PE – NRCE

US00000006



HISTORICAL
RESEARCH
ASSOCIATES, INC.

Ian Smith

History Division Manager & Principal Historian

Since joining HRA in 2000, Ian Smith has worked primarily on historical-legal studies related to Native American land and water rights, navigability of waterways, rights-of-way, and land-use issues in the West. Now serving as HRA's History Division manager, Ian has extensive experience researching in a wide array of federal, state, and local archival repositories, as well as having written several expert historical reports and provided expert witness testimony at trial and in deposition. Among the issues about which Ian has submitted expert reports and/or provided testimony in court proceedings are the water rights claims of the Coeur d'Alene Tribe, the Gila River and Ak-Chin Indian Communities, and the Navajo Nation; road rights-of-way on the Flathead Indian Reservation; historical navigation on the Clark Fork River in Montana; taxation issues affecting the Tulalip Tribes; the alleged diminishment of the Red Lake Indian Reservation; and a First Amendment challenge against the U.S. Forest Service involving a Jesus statue on a ski resort in Montana. Ian provides his clients impeccably researched, meticulously sourced, and well-crafted histories on which they can rely in litigation.

Water Rights and Adjudications

Ak-Chin Indian Community v. MSID, et al.

Principal historian and author of an expert report examining the Ak-Chin Indian Community's traditional uses of water on lands later reserved for the Tribe by executive order in 1912. Attorneys representing the Tribe included HRA's expert report as an exhibit in court filings related to the Tribe's motion for summary judgment. The parties ultimately settled the case, obviating the need for deposition or trial testimony by HRA's principal historian.

U.S. v. Walker River Irrigation District, Nevada

Principal historian and expert witness for a case involving the Walker River Paiute Tribe's water rights claims in the Walker River Basin of Nevada. After securing surface-water rights in a 1936 decree (amended in 1940), the Tribe seeks recognition for storage-water and groundwater rights, as well as for additional surface water to serve lands added to the reservation after the initial court proceedings began in 1924. Ian submitted an expert report in the litigation, but the settlement of the case obviated the need to provide testimony.

U.S. v. Gila Valley Irrigation District (Globe Equity 59), Arizona

Principal historian and expert witness for a case involving the intent of the officials who negotiated the 1935 Globe Equity Decree regarding the right of lower-priority water users in the Gila River Basin to pump groundwater in addition to their surface-water diversions. After completing research at the National Archives central and regional branches and at the Arizona State Archives, Ian submitted expert reports and provided deposition testimony in the ongoing court proceedings.

Little Colorado River Basin Adjudication, Arizona

Expert witness for the Navajo Nation in the Little Colorado River (LCR) Basin Adjudication in Arizona. Historical research and analysis for the case has related primarily to Diné use and occupancy of LCR Basin lands in the nineteenth century, the Navajo Reservation's expansion in the LCR Basin in the late 1800s and early 1900s, the partitioning of the 1882 Executive Order Reservation, the federal government's water development activities in the LCR Basin, and the historical number of livestock grazed by Diné people within the LCR Basin. Ian has submitted expert reports and provided expert testimony during depositions in the ongoing LCR Adjudication.



Education

MA, History, 2010,
University of Montana

BA, History and English
Literature, 1999,
University of Montana

Qualifications

Meets the Secretary of
the Interior's
Professional
Qualification Standards
in History

Professional Affiliations

National Council on
Public History

Montana Historical
Society

American Society for
Environmental History

American Bar
Association Section of
Environment, Energy,
and Resources
(Indigenous Law
Committee)

<u>Coeur d'Alene– Spokane River Basin Adjudication, Idaho</u>	Senior historian and report author for the United States' water rights claims on behalf of the Coeur d'Alene Indian Tribe in the Coeur d'Alene–Spokane River Basin Adjudication (CSRBA) within the State of Idaho. HRA's research and analysis related to the purposes for the creation of the Coeur d'Alene Indian Reservation in 1873 and the uses of water by Tribal members both before and after the reservation's establishment. The attorneys in the case submitted HRA's reports to the court, which ultimately ruled in favor of the Tribe on most of its claims.
<u>Agua Caliente Band of Cabuilla Indians v. Coachella Valley Water District</u>	Senior historian and report author for a case involving the Agua Caliente Band's claim for <i>Winters</i> -based rights to groundwater on reservation lands near Palm Springs, California. HRA's research and analysis focused on the creation of the reservation in 1876–1877, the Tribe's pre-reservation uses of groundwater, and the subsequent patenting of lands to the Tribe in the early 1900s. Attorneys in the case relied on HRA's reports to assist in the preparation of their legal briefs before the U.S. District Court, which ruled in favor of the Tribe's water right claims. Both the Ninth Circuit Court of Appeals and the U.S. Supreme Court upheld the district court's ruling.
<u>General Adjudication of the Gila River System and Source</u>	Principal historian and expert witness for cases involving Tribal and non-Native water rights claims along the Gila River and its tributaries. The projects required research and analysis of land patent files, title documents, turn-of-the-century land-use reports, court records, and ethnographic studies to assess the accuracy of non-Native water claims and to determine the extent of Tribes' traditional and post-reservation uses of the river.
<u>Arizona v. California (Fort Yuma Indian Reservation Water Rights)</u>	Research historian and report co-author for a study analyzing whether an 1893 agreement had diminished the boundaries of the Fort Yuma Indian Reservation. Attorneys submitted HRA's report in federal court, and an HRA senior historian provided expert testimony in the litigation. HRA's report and testimony led, in part, to the court granting additional water rights to the Quechan Tribe under the landmark <i>Arizona v. California</i> lawsuit.

Tribal Sovereignty and Treaty Rights

<u>CSKT v. Lake County (Flathead Reservation Right- of-Way)</u>	Principal historian and expert witness for a case involving the history of land ownership and road development in the Big Arm Townsite on the Flathead Indian Reservation. Established under a 1906 amendment to the Flathead Allotment Act, Big Arm was one of nearly two dozen townsites created under congressional authority within the reservation. In addition to analyzing the sale of town lots and the elimination of lands from the townsite, HRA investigated whether any historical evidence showed that county officials complied with federal and state right-of-way laws that were in effect during the early 1900s. Ian submitted an expert report and provided deposition testimony in the case. In April 2020, the U.S. District Court ruled in favor of the Confederated Salish and Kootenai Tribes (CSKT), citing portions of Ian's report in the ruling.
<u>Tulalip Tribes v. State of Washington, et al.</u>	Expert witness and report author for a federal court case involving the taxation of Indian trust lands within Quil Ceda Village on the Tulalip Indian Reservation. The study required research and analysis of several federal statutes, as well as an examination of historical land use within the present-day Quil Ceda Village. Ian provided deposition testimony in June 2017 and offered written trial testimony in May 2018 in federal court proceedings. Following an appeal to the Ninth Circuit, the parties agreed to settle the case via a sales-tax-revenue-sharing agreement that Washington Governor Jay Inslee signed into law in March 2020.
<u>U.S. v. Joseph Joshua Jackson (Red Lake Reservation Boundary Dispute)</u>	Expert witness and report author for a study of a 1905 law that authorized the sale of lands within the Red Lake Indian Reservation, Minnesota, to a railroad company. HRA's expert report analyzed both congressional intent and the historical circumstances surrounding the law's passage. After Ian provided expert testimony at a federal court hearing in Minnesota, judges in both the U.S. District Court and the Eighth Circuit relied on his report and testimony in their rulings in the case, which found that Congress had not diminished the reservation.

<u><i>Herrera v. Wyoming</i> (Crow Tribe hunting rights)</u>	Senior historian for a case involving Tribal off-reservation hunting rights on national forest lands in Wyoming, which were reserved under an 1868 treaty with the United States. Attorneys relied on HRA's research to assist in the preparation of their legal briefs, which they submitted to the U.S. Supreme Court. The Supreme Court found in favor of the Crow Tribe.
<u>MHA Nation's Title to the Missouri Riverbed</u>	Technical advisor for a study of the Mandan, Hidatsa, and Arikara (MHA) Nation's relationship to the Missouri River and federal recognition of the Fort Berthold Reservation prior to statehood. HRA conducted extensive research in archival records, government documents, and published historical and anthropological literature. HRA prepared a report analyzing our findings, on which Interior Department Solicitor Robert Anderson relied in his February 2022 opinion (M-37073) ruling that the MHA Nation owns the riverbed and the minerals lying thereunder.
<u>Mapping of CSKT Aboriginal Use Areas in Montana</u>	Project historian for a study involving the mapping and documentation of off-reservation use areas traditionally relied on by the Confederated Salish and Kootenai Tribes (CSKT) throughout the state of Montana. The project resulted in the creation of a GIS map linked to digitized copies of historical documents, which an anthropological expert used during his deposition testimony.
<u>Southern Ute Tribe's Off- Reservation Use Rights</u>	Research historian and report co-author for a study of the Southern Ute Tribe's off-reservation hunting rights in southwestern Colorado. The report discussed Tribal members' traditional subsistence activities in the so-called Brunot Area, as well as analyzing the rights reserved by the Tribe under an 1873 agreement opening these lands to non-Native people. The attorneys used HRA's report in negotiations with state officials to secure off-reservation hunting, fishing, and gathering rights for Tribal members.

Navigability Studies

<u><i>State of Montana v. Talen Montana LLC, et al.</i></u>	Principal historian and expert witness for a case involving a dispute over the ownership of the bed and banks of the lower portion of the Clark Fork River in Montana. Ian's report analyzed pre-statehood evidence of steamboat activity on the stretch of the river from Plains to the Montana-Idaho state line, as well as the historical location of the steamboat landing below Thompson Falls. Ian provided deposition testimony in May 2021 and trial testimony in January 2022.
<u><i>State of North Carolina v. Alcoa Power Generating, Inc.</i></u>	Project historian for research relating to the historical navigability of the Yadkin River in North Carolina, which was a central issue in litigation between the State of North Carolina and Alcoa Power Generating, Inc. Research included an in-depth review of late 1800s U.S. Army Corps of Engineers reports and maps, as well as reports issued by state agencies in the early 1900s.
<u><i>PPL Montana, et al., v. State of Montana</i></u>	Research historian and report co-author for a study and assessment of the historical navigability of the Lower Clark Fork River in Montana. The report relied on primary and secondary sources, including U.S. Army Corps of Engineers' annual reports, historical newspapers, and local histories of the region to evaluate whether that portion of the river was used as a navigable stream by settlers, commercial interests, and government officials. An HRA senior historian provided deposition testimony.

Environmental Litigation

<u><i>Freedom from Religion Foundation v. Chip Weber, et al.</i></u>	Expert witness and report author for a study involving the permitting, construction, uses, and local perceptions of a statue of Jesus that has been on the Whitefish Mountain Resort ski area in western Montana since the early 1950s. The U.S. District Court judge relied on Ian's expert report and testimony in his June 2013 decision in the case. In August 2015, the Ninth Circuit Court of Appeals upheld the district court's ruling.
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RS 2477 Rights-of-Way Research,
Kane County,
Utah

Research historian and report co-author for a study of twelve alleged RS 2477 rights-of-way (ROWs) in Kane County, Utah. The study examined historical uses of the claimed ROWs and provided cartographic and photographic evidence of the existence (or non-existence) of the roads prior to 1976. The project included research at federal, state, and university archives in Utah, as well as conducting field surveys of the ROWs in question.

Expert Witness Testimony

*In Re St. David
Irrigation District,
Case W1-11-1675,
Gila River Basin
Adjudication,
Maricopa County
Superior Court*

Ian submitted an expert report and provided deposition testimony in January 2025, in six initial designation cases in Case W1-11-1675, all of which pertained to the St. David Irrigation District's claims to water rights along the San Pedro River in southeastern Arizona. Part of the broader Gila River Basin Adjudication, these initial designation cases—and the deposition testimony Ian provided—related to water rights claims within the exterior boundaries of the St. David Irrigation District. The cases are currently set for trial in July 2025.

*State of Montana v.
Talen Montana
I.J.C., et al., U.S.
District Court for
Montana, Case 16-
CV-35*

Ian submitted an expert report and provided both deposition testimony (May 2021) and trial testimony (January 2022) in this case, which involved a dispute over the ownership of the bed and banks of the Clark Fork River in Montana. Ian's report and testimony analyzed historical evidence of steamboat traffic on the lower Clark Fork (from Thompson Falls to the Montana-Idaho state line), as well as assessing whether any steamboats ever plied the waters on the stretch of river from Thompson Falls to Plains, Montana. The U.S. District Court for Montana ruled in favor of HRA's client.

*U.S. v. Gila Valley
Irrigation District,
Case 31-CV-59,
U.S. District Court
for Arizona*

Ian submitted expert reports and provided deposition testimony (November 2021) for a case related to the history and implementation of the 1935 Gila Decree. Ian's reports and testimony analyzed historical evidence related to the decade-long negotiations that led to the 1935 Gila Decree—and whether the decree authorized groundwater pumping in the so-called Upper Valleys, lying upstream of the San Carlos Apache and Gila River Indian Reservations—as well as the expansion of groundwater pumping by non-Native entities in the Upper Valleys during the two decades following the decree. The U.S. District Court for Arizona has not yet ruled on this case.

*CSKT v. Lake
County, et al., U.S.
District Court for
Montana, Case 19-
CV-90-DLC*

Ian submitted an expert report and provided deposition testimony (December 2019) in this case involving the history of land ownership and road development in the Big Arm Townsite on the Flathead Indian Reservation. Established under a 1906 amendment to the Flathead Allotment Act, Big Arm was one of nearly two dozen townsites created under congressional authority within the reservation. In addition to analyzing the sale of town lots and the elimination of lands from the townsite, HRA investigated whether any historical evidence existed that county officials complied with federal and state rights-of-way laws that were in effect during the early 1900s. In April 2020, the U.S. District Court ruled in favor of the Confederated Salish and Kootenai Tribes (CSKT), citing portions of Ian's report in the ruling.

*In Re Hopi IISR,
Case CV 6417-203,
Little Colorado
River (LCR)
Adjudication,
Apache County
Superior Court,
Arizona*

Ian submitted an expert report and provided deposition testimony (February 2018) in this case, which is a sub-proceeding of the Little Colorado River (LCR) Basin Adjudication. Ian's testimony pertained primarily to the historical use and occupancy of LCR Basin lands by Navajo Tribal members. The case is currently pending before the Apache County Superior Court in Arizona.

<i>Tulalip Tribes v. State of Washington, et al.</i> , U.S. District Court, Western District of Washington, Case 15-CV-00940-BJR	Ian submitted an expert report, provided deposition testimony (June 2017), and offered written trial testimony (May 2018) in this case, which involved the taxation of commercial activities on Tribal trust lands within the boundaries of the Tulalip Indian Reservation in the Tribally chartered and federally recognized municipality of Quil Ceda Village. The U.S. District Court for the Western District of Washington in Seattle found in favor of the defendants in its October 2018 ruling. Following an appeal to the Ninth Circuit, the parties agreed to settle the case via a sales-tax-revenue-sharing agreement that Washington Governor Jay Inslee signed into law in March 2020.
<i>United States v. Joseph Joshua Jackson</i> , U.S. District Court for Minnesota, Case 10-151-DWF-LIB	Ian submitted an expert historical report and served as an expert witness at trial in this case, which pertained to the alleged diminishment of the Red Lake Indian Reservation under a 1905 law authorizing the sale of a tract of reservation land to a railroad company. Ian provided testimony at trial, on behalf of the United States, in federal court in August 2013. The U.S. District Court found in favor of the United States in May 2014, and the Eighth Circuit Court of Appeals upheld the district court's ruling in April 2017.
<i>Freedom from Religion Foundation v. Chip Weber, et al.</i> , U.S. District Court for Montana, Case CV-12-19-M-DLC	Ian submitted an expert historical report and served as an expert witness for this case related to the history, uses, and local perceptions of a statue of Jesus that was placed on the Whitefish Mountain Resort ski area in western Montana in the early 1950s. Ian provided deposition testimony on behalf of the defendant (U.S. Forest Service) in October 2012. The U.S. District Court found in favor of the United States in June 2013, and the Ninth Circuit Court of Appeals upheld the lower court's ruling in August 2015.

Publications and Awards

2025	Smith, Ian, and Heather Tanana. "The Supreme Court's Use of Historical Evidence in Recent Indian Law Cases." <i>Natural Resources & Environment</i> 39, no. 3 (Winter 2025): Publication Forthcoming.
2024	Smith, Ian. "Protecting Salmon and Upholding the Rights of Nature Against Greenwashing in the Pacific Northwest." <i>Human Rights</i> 50, no. 1/2 (October 2024): 4–5.
2022	Smith, Ian. "Celebrating the Restoration of the National Bison Range to Its Rightful, Tribal Owners." <i>Natural Resources & Environment</i> 36, no. 4 (Spring 2022): 3.
2021	Recipient, National Council on Public History's Excellence in Consulting Award.
2019	Smith, Ian. "Review of <i>American Indian History on Trial: Historical Expertise in Tribal Litigation</i> , by E. Richard Hart." <i>Utah Historical Quarterly</i> 87, no. 3 (Summer 2019): 256–58.
2019	Smith, Ian. "Review of <i>Irrigation, Timber, and Hydropower: Negotiating Natural Resource Development on the Flathead Indian Reservation, 1904–1945</i> , by Garrit Voggeser." <i>Montana: The Magazine of Western History</i> 69, no. 1 (Spring 2019): 82–84.
2015	Greenwald, Emily, and Ian Smith. "Bury My Documents in Lenexa, Kansas: Expert Witness Work and the American Indian Records Repository." <i>The Public Historian</i> 37, no. 1 (Feb. 2015): 39–45.
2010	Smith, Ian. "From Subsistence to Dependence: The Legacy of Reclamation and Allotment on Quechan Indian Lands, 1700–1940." Master's thesis, University of Montana, Missoula, 2010.

Selected Presentations

2023	Guest Speaker, University of California Irvine, School of Law, Native American Law, October 2023
2023	Guest Speaker, University of Montana, HIST 275: Making History Public, January 2023.

- 2022 "A Historian's View: Supporting Tribal Water Claims through Historical Research, Analysis, and Testimony." Tribal Water Law Conference, September 2022.
- 2022 Guest Speaker, University of Idaho College of Law, Law, Science, and the Environment, February 2022.
- 2021 "Historians and Indigenous Rights: The Role of Expert Witness Historians in Litigation Involving Indigenous Land, Water, and Treaty Rights in the U.S. and Canada." National Council on Public History Annual Meeting, March 2021.
- 2021 Guest Speaker, Oklahoma State University, HIST 5033: Introduction to Public History, December 2021.
- 2021 Guest Speaker, University of Montana, HIST 275: Making History Public, February 2021.
- 2020 "Historians as Expert Witnesses: Consulting and Testifying." American Historical Association, 134th Annual Meeting, January 2020.
- 2017 "A Case Study in Assimilation: Allotment and Fee-Patenting on the Flathead Indian Reservation, 1887–1934." Montana History Conference, September 2017.
- 2016 "The Judge and the Historian." National Council on Public History Annual Conference, Baltimore, Maryland, March 2016.
- 2015 "Bury My Documents in Lenexa, Kansas: Problems of Access and Accessibility at the American Indian Records Repository." ILPC/TICA Indigenous Law Conference, Michigan State University College of Law, November 2015.
- 2005 "From Subsistence to Dependence: The Legacy of Reclamation and Allotment on the Fort Yuma Indian Reservation, 1890–1940." American Society for Environmental History Annual Conference, Houston, Texas, March 2005.

Professional Service

- 2023–2025 Co-Chair, Special Committee on Strategic Planning, American Bar Association (ABA), Section on Environment, Energy, and Resources (SEER).
- 2023–2025 Vice-Chair at Large, Indigenous Law Committee, ABA SEER.
- 2021–2025 Public History Advisory Committee, University of Montana History Department.
- 2021–2023 Co-Chair, Native American Resources Committee, ABA SEER.
- 2020–2021 Vice-Chair for Programming, Native American Resources Committee, ABA SEER.



CLAIR YODER, P.E.

Project Role: Hydrology and Hydraulics

Clair Yoder has 23 years of hydropower-specific experience and specializes in hydrology, water quality, instream flow, fish passage, and restoration projects. She is experienced with model development to evaluate historical or potential future changes in surface water quantity, water quality, and operations modeling. Clair has worked on numerous Federal Energy Regulatory Commission (FERC) and water rights adjudication projects throughout the West and in Alaska and Pennsylvania. Her FERC experience ranges from PAD development, through license implementation monitoring and evaluation. She has participated in five water rights adjudications from study design, technical analysis, claim development, litigation, settlement, and expert testimony. Her instream flow experience includes study planning, data collection, and hydraulic analysis using PHABSIM. Clair's water quality experience ranges from project startup to completion, including study plan design, Quality Assurance Project Plans, implementation of water quality monitoring programs, water quality modeling, and analysis and documentation. She has also provided permitting support for local, state, and federal needs and is, in particular, familiar with the requirements under the Joint Aquatic Resources Application. Clair's fish passage experience ranges from culvert replacement to both upstream and downstream passage at both small and large dams.

Position with Firm

Senior Engineering Consultant

Key Expertise

- Hydrology
- Instream Flow Studies
- Water Quality
- Water Rights
- Water Temperature
- Stream Channel Modeling
- Reservoir Operations

Professional Registration

Professional Engineer, Civil – ID (P-23195), WA (41882)

Education

M.S.C.E., Civil & Environmental Engineering, University of Washington, 2001

B.S., Civil & Environmental Engineering, University of California at Berkeley, 1998

B.A., Environmental Studies, University of California at Santa Cruz, 1998

Years of Experience

With Kleinschmidt: 22

Total: 23

Expert Testimony Provided in the Previous Four Years

Regression Analysis for Practicably Irrigable Acreage Determinations on the Coeur d'Alene Reservation. Prepared by Clair Yoder, P.E. Prepared for the United States Department of Justice Environmental & Natural Resources Division. Denver, Colorado. May 2024. Subcase Numbers 91-7778, 92-10912, 93-7471 to 93-7502, 95-16693 to 95-16696, and 95-16698 to 95-16703.

Hydrologic Quantification of Streams on the Coeur d'Alene Reservation. Prepared by Clair Yoder, P.E. Prepared for the United States Department of Justice Environmental & Natural Resources Division. Denver, Colorado. May 2024. Subcase Numbers 91-7777, 92-10906, 92-10907, 93-7469, 93-7470, 94-9244 to 94-9246, and 95-16678 to 95-16684.

Coeur d'Alene Lake Water Budget and Estimates of Natural Lake Elevations. Prepared by Clair Yoder, P.E. Prepared for the United States Department of Justice Environmental & Natural Resources Division. Denver, Colorado. September 2024. Subcase Number 95-16704.

Relevant Project Experience

Water Rights Adjudication, Nooksack Basin

Bureau of Indian Affairs, Bellingham, WA

Project Manager responsible for oversight of multidisciplinary efforts to develop comprehensive water rights claims in the Nooksack Basin. Previous tasks have included a review of existing information, identification of data gaps, and meeting and coordinating with the Federal and Tribal team and interested agencies to identify study needs. Current tasks include identifying and delineating claim reaches, fish distribution mapping, identification of priority species and life stage, habitat mapping, evaluation of habitat extrapolation procedures for unmeasured reaches, climate change literature review, hydrologic data review, preparation of a literature database, limiting factors analysis, and 1D/2D modeling.

Water Rights Adjudication, Clark Fork-Pend Oreille Basin

Bureau of Indian Affairs, Pend Oreille, ID

Project Manager responsible for leading multidisciplinary efforts to develop water rights claims in the Clark Fork-Pend Oreille River Basin in Idaho. Led the technical team in the development of monthly instream flow claims for three mainstem river reaches and forty-two tributary reaches. Tasks included review of fish distribution and genetics information to develop priority species, identification of priority reaches, development of desktop hydrologic methods for monthly claims, and GIS efforts to correctly identify reach boundaries and watersheds.

Water Rights Adjudication, Palouse Basin**Bureau of Indian Affairs, Moscow, ID**

Project Manager responsible for leading multidisciplinary technical assistance to develop comprehensive water rights claims in the Idaho portion of the Palouse River Basin. Water Resources Technical Lead responsible for the oversight of the collection of existing information and additional field data to develop water right claims for seeps, springs, and fountains in the basin. Prepared an expert report describing the Springs claim development process. Conducted a hydrologic analysis of the basin to estimate monthly flow statistics at 23 ungaged locations, implemented a gaging program to collect continuous and spot measurement data to provide hydrological support for the claims, and coordinated a task to develop habitat-flow relationships from regional data as related to the instream flow claims. This effort was a cost-effective approach that enhanced predictions of required instream flow needs for fish habitat from traditional office-based methods.

Water Right Litigation Support, Palouse Basin**Bureau of Indian Affairs, Moscow, ID**

Project Manager responsible for supporting technical needs during litigation and settlement phases of the adjudication in the Palouse River Basin for the instream flow and springs and fountains claims. Support includes review and refinement of submitted claims based on new information, attendance at technical advisory committee meetings to identify and compile relevant watershed information to support negotiations, and meeting with interested parties to discuss settlement flows for the instream flow claims.

Water Rights Adjudication, Coeur d'Alene Basin**Bureau of Indian Affairs, St Maries, ID**

Water Resources Technical lead responsible for PHABSIM modeling at more than 15 locations, continuous streamflow data collection and rating curve analysis, development of monthly hydrologic statistics at over 45 ungaged locations within the basin, and development of a reservoir flow routing model to simulate lake elevations. Responsible for preparing four individual expert reports summarizing hydrologic analysis conducted to support instream flow, lake, riparian, and practicably irrigable acres (PIA) water rights claims in the Coeur d'Alene Basin.

Water Rights Adjudication, Upper Klamath Basin**Bureau of Indian Affairs, Klamath Falls, OR**

Water Resources Engineer responsible for providing support since 2002 during which she performed hydrological assessment of both streams and springs in the basin. For this effort, responsible for gage installation, collection of streamflow pressure data, and development of rating curves and daily streamflow records for eight sites. From these and other data, developed a methodology to estimate streamflow statistics for 25 gaged and ungaged streams. Also responsible for hydrological field data collection and claim estimation for over 150 springs in the Klamath basin and development of expert testimony supporting those claims. Kleinschmidt has been providing multidisciplinary technical assistance to the BIA for over 25 years. Tasks over the last decade have included data collection and analyses, settlement negotiations, litigation support, claim documentation, and coordination and communication among multiple agencies, tribal governments, and other stakeholders.

Upstream Fish Passage Facility Upgrade, Green River**Tacoma Public Utilities, Ravensdale, WA**

Project Manager responsible for leading the assessment and conceptual design to upgrade Tacoma Water's fish passage facility to address safety, efficiency, and fish survival concerns. Responsible for internal and subconsultant coordination of the field assessment to establish the current condition of the facility, a facilities assessment to evaluate necessary upgrades, conceptual design recommendations, and Stakeholder coordination support during the project.

Downstream Juvenile Bypass System, Cowlitz Basin**Tacoma Public Utilities, Mossyrock, WA**

Project Manager responsible for leading the 25 percent design effort to improve the downstream fish bypass system at Mayfield Dam. Responsible for internal and subconsultant coordination of hydraulic analysis, 25 percent designs associated with two proposed alternatives, dam safety assessment of new structures, geotechnical assessment of new facilities, and biological assessment of fish survival.

**FERC Licensing Studies, Nuyakuk Hydroelectric Project
Nushagak Cooperative, Nuyakuk River, AK**

Water Resources Engineer responsible for supporting the fish and aquatic baseline study implementation associated with a proposed run-of-river hydroelectric dam. Responsibilities included review and oversight of pressure transducer data collection for the development of a continuous water level record for use in developing a 2-D hydraulic model, Life Cycle Model, and Integrated Risk Assessment.

**Fish Technology Center and Hatchery Development, Fish Technology Center
US Fish and Wildlife Service, Rio Vista, CA**

Water Resources Engineer responsible for water quality technical assistance for the development of a fish technology center (FTC) and hatchery for the conservation and restoration of imperiled Sacramento Delta fishes. Helped prepare a technical memoranda to evaluate potential well water quality and water quality at several locations in the delta in comparison to identified hatchery water quality conditions.

**Hydraulic Engineering Support, Confidential Project
Rocky Mountain Power, Logan, UT**

Interim Project Manager responsible for providing support during public meetings to identify stakeholder concerns for a potential new pump storage project. Led a team of hydraulic engineers to develop 2D and 3D models to simulate water surface elevation and hydraulic conditions during pump storage operations.

**Study Plans, Dixon Diversion Amendment to Bradley Lake Hydroelectric Project
Alaska Energy Authority, Martin River, AK**

Assistant Project Manager and Water Resources Engineer responsible for a proposed diversion to allow for increased power production at Bradley Lake. Responsible for subconsultant coordination among ten different study plans and response to agency comments, preparation of the Streamflow Gaging Study Plan, review of the Water Quality Monitoring Plan, and budget and document control support. Study planning required a creative approach for stream gaging and hydrologic analysis to help ensure the development of strong records in the face of safety constraints and data collection challenges of this highly dynamic glacial river.

**Probable Maximum Flood Analysis, Carmen Dam
Eugene Water & Electric Board, McKenzie River Basin, OR**

Water Resources Engineer responsible for following the USACE energy budget method to estimate snowmelt as a function of wind speed, precipitation, and air temperature. Combined the snowmelt with the probable maximum precipitation to estimate the probable maximum flood. Performed calculations for Carmen Dam and conducted QA/QC review of calculations for Smith Dam.

**Madison River Flushing Flow Report, Madison River Basin
NorthWestern Energy, Madison River, MT**

Project Manager responsible for the five-year assessment to determine flushing flow impacts in the Madison River based on additional data collected between 2018 to 2022. Substrate core data and macroinvertebrate data have been collected since 1996 and are reviewed every five years to assess the flushing flow program. Responsible for oversight of the team, subconsultant management, and senior technical review of the report.

**Lewis Ridge Pre-Application Document, Lewis Ridge Pumped Storage Project
Rye Development, Bell County, KY**

Water Resources Engineer responsible for preparation of the water resources sections of the PAD for this 287 MW pump storage project located at a historical mining site.

**Rock Island Ponds Elevation Evaluation, Columbia River
Chelan County PUD, Malaga, WA**

Water Resources Engineer responsible for oversight of data collection and analysis of elevation in the Columbia River mainstem and five off-channel ponds to evaluate the connection. The analysis included the processing of pressure transducer data to elevation for comparison between the ponds and the mainstem.

Rock Island Feasibility Assessment of Water Reintroduction, Horan Natural Resource Area (HNA)**Chelan County PUD, Malaga, WA**

Water Resources Engineer responsible for oversight of a study to investigate potential supplemental sources of water to the HNA to support users' recreational experiences. The study will identify alternatives and criteria and evaluate the feasibility of each in terms of engineering, biological, economic, environmental impacts, and sustainability.

Floodplain Restoration Feasibility Assessment, Tenas Creek**Skagit River System Cooperative, Pierce County, WA**

Project Manager responsible for the feasibility study to identify and evaluate options to restore Tenas Creek at the Suiattle River Road crossing. Habitat conditions are degraded due to artificial straightening and containment within a training levee and rip-rap structure. The project will improve habitat conditions for Chinook Salmon and other fish species and restore natural geomorphic processes. Responsible for oversight of the data compilation and field data collection, refinement and evaluation of options and preliminary design, geotechnical assessment and drilling investigations, permitting support and coordination and review of subconsultant deliverables.

Evaluating Aeration Potential, Confidential Project**Confidential Client, Confidential Location**

Project Manager and Technical Lead responsible for oversight and analysis of this project to evaluate dissolved oxygen (DO) enhancement systems within the project area to meet stringent downstream criteria. The analysis included summarizing and ranking DO enhancement technologies that could be installed at each of the hydroelectric facilities and evaluating their impact on both spill and current and future temperature conditions.

Probable Maximum Flood Study, Gem State FERC Project**Idaho Falls Power, Idaho Falls, ID**

Project Manager responsible for oversight of the effort to update the Probable Maximum Flood at the Gem State Dam based on updated methods to determine the probable maximum precipitation. Responsible for coordination of the internal team, project deliverables, and preparation for meetings with FERC.

Environmental Impact Statement, Idaho Forestry Program**Idaho Forestry Program, ID**

Water Resources Engineer responsible for preparing the water quality and quantity sections of the NEPA EIS for the State of Idaho Department of Lands for the Idaho Forestry Program.

Thermal and Dissolved Oxygen Modeling for the Molson-Coors Facility**South Fork, Shenandoah River, VA**

Water Resource Engineer responsible for development and calibration of a temperature and dissolved oxygen model using QUAL2K to evaluate increased temperature of outfall releases downstream of the Molson-Coors facility under 7-day low flow conditions.

Water Quality and Permitting Support, Rye Development Bundle #1 Project**Rye Development, Allegheny River, PA**

Project Manager and Water Resources Engineer responsible for development and review of the CE QUAL-W2 water quality model of 10 existing dams on the Monongahela, Allegheny, and Ohio rivers used to assess the cumulative effects on water quality from development of all 10 projects. An optimization model was developed to maximize flow through each facility and operated in conjunction with the water quality model to assess the impacts on temperature and dissolved oxygen. The model allowed the client to maximize the amount of water available for hydropower generation while still maintaining releases to meet water quality standards.

Fish Passage and Habitat Enhancement for Culvert Replacement, Tualum Creek**Nez Perce Tribe, Pomeroy, WA**

Water Resources Engineer responsible for assessing the site hydrology and development of the HEC-RAS model to evaluate hydraulic conditions of both fish passage and flood frequency flows under existing and culvert retrofit/replacement options. Kleinschmidt was contracted to provide 60% design engineering for the replacement or retrofit of a passage barrier culvert.

**Dam Repair, Cowlitz Barrier Dam Repair Project
Tacoma Power, Salkum, WA**

Water Resources Engineer responsible for permitting submittals associated with the Cowlitz Barrier Dam Repair Project. Responsible for preparation of permit submittals including joint aquatic resources permit application, State Environmental Policy Act submittals, Eagle Incidental Take permit, and preparation of a fish salvage plan and the water quality protection plan. Required coordination with the client, design team, and the cultural resources subconsultant.

**Instream Flow Study, Eklutna Hydroelectric Project
Chugach Electric Association, Eklutna River, AK**

Water Resources Engineer responsible for leading the PHABSIM modeling effort for 30 transects along different reaches of the Eklutna River. Responsible for coordinating and final review of the QA/QC process for hydraulic modeling data entry, coordination with biologists to identify habitat suitability criteria, and PHABSIM modeling to develop habitat-flow relationships for identified species and life stages.

**Culvert Replacement, 180th Street SE
King County, Auburn, WA**

Water Resources Engineer responsible for supporting hydrology and developing a HEC-RAS model for a new culvert design, and identifying bankfull hydraulics for this culvert replacement project.

**Runner Replacement, Pelton Dam
Portland General Electric, Madras, OR**

Water Resources Engineer responsible for developing 5 and 95% exceedance estimates, annual flood frequency estimates, evaluation of tailwater elevation, and summary of temperature statistics for a project to procure a runner replacement for the Pelton Dam.

**Skagit River Gravel Monitoring, Skagit River
Puget Sound Energy, Skagit River, WA**

Project Manager responsible for oversight and coordination of data collection, analysis, and reporting of gravel monitoring in the Skagit River. Reference transects have been monitored for over 10 years in order to evaluate the need for gravel augmentation.

**Impact Analysis, Susitna-Watana Hydroelectric Project
Alaska Energy Authority, Susitna River, AK**

Water Resources Engineer responsible for coordinating data sharing and hydrologic analyses among resource study leads within the instream flow team. Specific responsibilities included stream gaging data collection and analysis on over 15 tributaries, hydrologic analysis to develop a 61-year period of record under natural conditions, and coordination of the open-water flow routing model developed in HEC-RAS used to simulate effects associated with Project operations. Kleinschmidt led the hydrology, fisheries, and aquatic ecology studies of this multi-year project to evaluate impacts of the proposed Susitna-Watana Hydroelectric Project in Southcentral Alaska under the FERC Integrated Licensing Process. The effective coordination of water resource data and analyses was essential within this large team of multiple consultants to advancing analysis while minimizing cost to the client.

**Environmental Studies and Habitat Modeling, Pebble Mine Project
Pebble Limited Partnership, Iliamna, AK**

Water Resources Engineer responsible for coordination of hydrologic analysis for inclusion into the habitat synthesis model to evaluate the impact of mine operations under different mitigation scenarios. Conducted a temperature assessment to evaluate how water temperatures are impacted under mine development and with mitigation flow releases. Conducted a temperature assessment to evaluate how water temperatures are impacted under mine development and with mitigation flow releases. Kleinschmidt provided technical support for operations modeling and refinement of mine design concept and fish mitigation planning for more than 5 years.

**PHABSIM Hydraulic Analysis, Pebble Mine Project
Pebble Limited Partnership, Iliamna, AK**

Water Resources Engineer responsible for reviewing and providing quality control for hydraulic data and performing the hydraulic and habitat modeling. Kleinschmidt conducted Physical Habitat Simulation Modeling (PHABSIM) on over 15 transects located within the project watershed.

**Analytical Assessment of Instream Flow Needs, Navarro River Watershed
State Water Resources Control Board, Navarro River Basin, CA**

Water Resources Engineer responsible for design and development of the Hydraulic Habitat Modeling Study Plan. As part of this effort, reviewed available methodologies and prepared a study plan for data collection and modeling of temperature and dissolved oxygen with the purpose of identifying numeric instream flow criteria which support adequate fish habitat conditions. Kleinschmidt provided technical services to prepare the study approach to develop instream flow criteria for streams in the Navarro Basin.

**Instream Flow Assessment, South Fork Skykomish River
Snohomish County Public Utility District, Snohomish County, WA**

Lead Water Resources Engineer responsible for data collection for habitat and hydraulic modeling, coordination with biologists to identify habitat suitability criteria, and PHABSIM modeling to develop habitat-flow relationships for identified species and life stages. Project includes evaluation of a potential hydroelectric project on the South Fork Skykomish River. Successful use of PHABSIM modeling was employed into a time series analysis that demonstrated operations overtime which allowed the client to make early determinations about project feasibility.

**Water Rights Investigations, Lake Tapps Municipal Water Supply
Puget Sound Energy, Lake Tapps, Pierce County, WA**

Water Resources Engineer responsible for performing environmental and water quality analysis, river basin modeling, aquifer impacts, and reservoir operations modeling for the Lake Tapps Water Right project in the central Puget Sound. Responsibilities included enhancing a basin-scale STELLA simulation model used to estimate and compare streamflows and reservoir levels in the basin; use of CE-QUAL-W2 to simulate water quality, post processing and analysis of results, and visual representation of the water quality conditions using Tecplot to produce contour plot animations; water quality monitoring on the White River and in Lake Tapps involving biweekly sampling of water quality constituents including in situ measurements and laboratory analysis; characterization of the limnological processes and mechanisms occurring in Lake Tapps reservoir and their dependence on the quantity and quality of water diverted from the White River.

**Aquatic Studies, Existing Water Storage Facilities
Department of State Hospitals, Napa, CA**

Water Resources Engineer responsible for developing a hydrologic assessment of the Lake Marie basin to evaluate flow conditions and the ability to release water for instream flow needs as part of larger project for which Kleinschmidt reviewed the California Department of State Hospitals existing water storage facilities and operations and their potential impacts to fish habitats relative to compliance with CDFG Code 5937. The hydrologic analysis demonstrated the potential for an operational approach that would protect the aquatic habitat and demonstrate compliance with regulations.

Off-Channel Thermal Refuge Habitat Post-Construction Monitoring, Sammamish River, City of Bothell, Bothell, WA

Water Resources Engineer responsible for coordinating the post-construction water quality monitoring of the side channel. Monitoring required calibration and field audits of temperature and dissolved oxygen instrumentation. Kleinschmidt was contracted by the City of Bothell to develop engineering designs for the reconnection and restoration of a relic channel and floodplain riverine wetland of the Sammamish River.

**Multiple Species Habitat Conservation Plan, Lower Santa Clara River
United Water Conservation District, Santa Clara River, CA**

Water Resources Engineer responsible for providing the hydrologic review and summary of the Hydrologic Operations Simulation System (HOSS) developed by United and used in the Habitat Conservation Plan (HCP) for effects analysis and development of conservation measures. This model is used to simulate hydrologic conditions of the Santa Clara River under different operational scenarios. Kleinschmidt was contracted to help United Water Conservation District (United) develop a multispecies HCP to obtain Endangered Species Act coverage for the incidental take of listed species potentially impacted by instream flow that is regulated by the Freeman Diversion Facility in the Santa Clara River.

**Fish Passage Feasibility Study, Jefferson Mill Hydroelectric Project
Nate Energy, Hardware River, VA**

Water Resources Engineer responsible for the calculation of exceedance flows, flood design flows, and forebay and tailwater rating curves used to assess fishway design alternatives. Also provided senior review of the summary report.

Stormwater Diversion and Groundwater Recharge Feasibility Study, Moorpark Wastewater Reclamation Facility – Arroyo Semi Project, Ventura County Public Works, Los Angeles, CA

Water Resources Engineer responsible for developing a daily simulation model to evaluate the quantity of water for diversion for use in groundwater recharge based on minimum instream flow requirements and other operating constraints. Selected average, dry, and wet years for assessment of diversion and quantity of water available using a continuous 15-minute record. Assessed optimum pump capacity to maximize diversions for groundwater percolation.

**Habitat Conservation Plan, Deschutes Basin
Biota Pacific, Deschutes Basin, OR**

Water Resources Engineer responsible for reviewing and processing levellogger groundwater and surface water data to estimate hourly stage changes at over ten different creeks, sloughs, and wetlands located off the mainstem Deschutes River and its tributaries. Kleinschmidt provided support for the development of a multispecies Habitat Conservation Plan.

**Instream Flow Project, Nookachamps Basin
Swinomish Indian Tribal Community, Nookachamps Basin, WA**

Water Resources Engineer responsible for conducting a literature review of the basin to identify applicable data and studies that serve to characterize the hydrologic conditions in the basin. The information gathered was summarized in a technical memorandum. Kleinschmidt was contracted to provide consulting services to the Swinomish Indian Tribal Community related to potential instream flow issues in the Nookachamps Basin.

**Water Quality Monitoring Program, Yazoo Hydroelectric Projects
Rye Development, Northern MS**

Water Resources Engineer responsible for water quality monitoring program at four hydroelectric projects owned and operated by the USACE. The purpose of the project is to assist with 401c certification and collect baseline field data of temperature and dissolved oxygen to quantify aeration capacity and evaluate compliance with water quality standards. Project tasks included assisting with study design, field safety plan, quality assurance project plan, and reporting. The rigorous and comprehensive monitoring data provided a solid framework for U.S. Army Corps of Engineers Section 408 permitting and future compliance standards.

Hatchery Redesign Investigations, John Day Mitigation Ringold Hatchery and I-182 Acclimation Ponds, U.S. Army Corps of Engineers, Portland District, Columbia River, WA

Water Resources Engineer responsible for oversight and implementation of an 18-month water quality monitoring and reporting program for use in the design of the proposed Ringold Hatchery and I-182 Acclimation Pond facilities. Monitoring included in-situ (temperature, pH, dissolved oxygen, and conductivity) and laboratory parameters (nutrients, total and dissolved metals, and pesticides).

**Fish and Aquatic Baseline Studies, Pebble Mine Project
Pebble Limited Partnership, Iliamna, AK**

Water Resources Engineer responsible for the review and evaluation of water quality data collected over several years for an environmental baseline analysis. The project required a QA/QC review of four years of laboratory and in-situ water quality data, a comparison of total and dissolved concentrations, and a comparison to water quality standards and conditions in other parts of the state.

**Thermal Habitat Restoration Feasibility Assessment, Sammamish River
Muckleshoot Indian Tribe, Lake Washington-Sammamish Basin, WA**

Water Resources Engineer responsible for overseeing field data collection within the Sammamish River used to assess the effect of tributary inflow on water temperature to evaluate the extent of thermal refuge areas and potential locations of habitat enhancement projects. Responsibilities included development of a Quality Assurance Project Plan following EPA protocols, monitoring coordination, and oversight of longitudinal and synoptic field surveys.

**Habitat Conservation Plan, Clark Springs
City of Kent, Kent, WA**

Water Resources Engineer responsible for preparing the water quality and quantity sections of the NEPA EIS for the City of Kent's HCP for their water supply facility located on Rock Creek in King County, Washington.

Temperature Study, Green/Duwamish River**Muckleshoot Indian Tribe, Green River, WA**

Water Resources Engineer responsible for a pilot study evaluating upstream migration behavior of adult Chinook Salmon after leaving saltwater as influenced by summer water temperatures in the Green River. Responsibilities included installation, data collection oversight, and QA/QC review of 12 continuous temperature dataloggers to collect half-hourly measurements of water temperature over a 20-mile reach. Kleinschmidt then compared the continuous temperature data and the hydroacoustic count data to evaluate at what point the fish begin to migrate upstream.

FERC Relicensing PAD and Study Plan Development, Boundary Project**Seattle City Light, Pend Oreille River, WA**

Water Resources Engineer responsible for drafting the water quality section of the Preliminary Application Document (PAD) and developing the Toxics Inventory and Screen which compiled, reviewed, and assessed information and data on toxicants to determine their potential level of concern for aquatic and human health. In addition, developed multiple study plans to address important water quality issues such as the ability to meet state water quality standards; macrophyte abundance and distribution; evaluation of the potential effect of macrophyte beds on DO and pH levels; and quantification of primary and secondary productivity. Worked with the client under the traditional licensing process to streamline necessary water quality studies that were acceptable to the agencies.

FERC Relicensing Hydrology and Aquatic Resource Studies, Baker Project**Puget Sound Energy, Baker and Skagit Rivers, WA**

Water Resources Engineer responsible for analysis of project hydrology and development of habitat and environmental flow-based statistics to evaluate alternate operational scenarios in terms of impacts on recreation and instream flows. Kleinschmidt provided aquatic resource services for Puget Sound Energy's Baker River Project relicensing team under the FERC Alternative Licensing Procedures.

Watershed Assessment, Upper Nehalem Watershed**Oregon Department of Forestry, Nehalem Basin, OR**

Water Resources Engineer responsible for preparing hydrology and water use sections of the Upper Nehalem watershed assessment for the Oregon Department of Forestry.



JOETTA J. ZABLOTNEY

Project Role: Geographic Information Systems

Joetta Zablotney has 39 years of hydropower-specific experience and specializes in the geospatial sciences encompassing photogrammetry, surveying, computer science, and geographic information system (GIS) management and analysis. She has served as project manager and technical lead of geospatial projects with applications in environmental planning and management, water resources management, impact assessments, and relicensing of hydroelectric projects. Joetta has managed, developed, and maintained project databases using Esri ArcGIS suite of geoprocessing tools for tasks requiring coordinated data management; spatial data development and exploration; cloud-based interactive mapping; field data collection via drones and mobile devices; CAD/GPS integration; and formal metadata specifications.

Joetta Zablotney is a skilled analyst and cartographer and is effective at integrating automated spatial analyses, data summaries, and data conversion with Python. As a photogrammetrist, she has a keen eye for quality 3D terrain model development that includes traditional near-infrared and green wavelength LiDAR, hydrographic surveys, and supplemental terrestrial topographic surveys. She has used her skill set in the stream restoration and fish habitat modeling arena by developing elevation, substrate, cover, and macrohabitat layers from aerial and field surveys; creating relative elevation maps for off-channel connectivity analyses; and translating georeferenced aerial imagery and digital elevation models (DEM) for integration into AutoCAD and HEC-RAS.

Position with Firm
Senior Scientist

Key Expertise

- Data Management
- GIS Database Design
- Remote Sensing Data Capture
- GIS/LIDAR/Surveying
- Photogrammetry
- GIS Spatial Analysis
- FERC Licensing / Relicensing / Amendments
- Water Rights
- Inundation Mapping

Certification/Training

Federal Aviation Administration Certified sUAS Remote Pilot, 2018
First Aid / CPR / AED

Education

M.B.A., Technology Management,
University of Washington, 2007
B.A., Geography-GIS,
University of Washington, 1993
A.A.S., Photogrammetry,
Ferris State University, 1983

Years of Experience

With Kleinschmidt: 28
Total: 39

Expert Testimony Provided in the Previous Four Years

Coeur d'Alene Lake Bathymetry and GIS Analysis. Prepared by Joetta Zablotney. Prepared for the United States Department of Justice Environmental & Natural Resources Division. Denver, Colorado. September 2024. Subcase Number 95-16704.

Development of Coeur d'Alene Lake Water Rights Claim. Prepared by Alice Shelly, Mike Gagner, Joetta Zablotney. Prepared for the United States Department of Justice Environmental & Natural Resources Division. Denver, Colorado. September 2024. Subcase Number 95-16704.

Relevant Project Experience

Water Rights Adjudication, Upper Klamath Basin

Bureau of Indian Affairs, Klamath Falls, OR

Data Management Lead responsible for creating and populating a data library that will support existing and future testimony and other legal proceedings for a water right adjudication in the western United States. The data library and associated document library are being designed for use by all U.S. Bureau of Indian Affairs (BIA) and U.S. Department of Justice (DOJ) attorneys and scientists, and all project fish, instream flow, water quality, and hydrology experts to support preparation of direct and rebuttal testimony and to provide a consistent source of foundational information and data for water right claims. The data management system will provide a framework for storing information on the basis for historic, current, and future claims, so that these data and background documents are more readily available.

GIS and Remote Sensing Analyst responsible for providing GIS analysis for ongoing litigation support defining and defending flow- and depth-based habitat recommendations for protecting Endangered Species Act listed Bull Trout, Lost River and Shortnose suckers in the Klamath River and Upper Klamath Lake. Developed a comprehensive bathymetric surface from historic and current bathymetry, LiDAR, and ground surveys and estimated depth availability by lake surface elevation for spawning, larval, and adult habitat analyses using Python scripts. Current activities include three-dimensional terrain analysis of the Pelican Bay access corridor and the development of storage volume / elevation relationships.

Water Rights Adjudication, Nooksack River Basin**Bureau of Indian Affairs, Bellingham, WA**

GIS Technical Lead responsible for spatial data acquisition, development, and analysis to develop comprehensive water rights claims in the Nooksack River Basin in Washington. Previous tasks have included a review of existing information, identification of data gaps, and attending meetings with the Federal and Tribal team to identify study needs. Current tasks include identifying and delineating claim reaches, fish distribution mapping, establishing data management protocols, and preparing water right claim forms.

Water Rights Adjudication, Clark Fork-Pend Oreille River Basin**Bureau of Indian Affairs, Pend Oreille, ID**

GIS Technical Lead responsible for supporting the development of water rights claims in the Clark Fork-Pend Oreille River Basin in Idaho. Tasks included the development of monthly instream flow claims for three mainstem river reaches and forty-two tributary reaches which included GIS efforts to correctly identify reach boundaries and watersheds.

Water Rights Adjudication, Palouse River Basin**Bureau of Indian Affairs, Moscow, ID**

GIS Technical Lead responsible for spatial data acquisition, development, and analysis to develop comprehensive water rights claims in the Idaho portion of the Palouse River Basin. Tasks included data management of the collection of existing information and additional field data to develop water right claims for seeps, springs, and fountains in the basin. Prepared an expert report describing the Springs claim development process.

Water Rights Adjudication, Coeur d'Alene-Spokane River Basin**Bureau of Indian Affairs, St. Maries, ID**

As an expert witness, prepared two expert reports and curated data and relevant information to support the discovery process in the Coeur d'Alene-Spokane River Basin Adjudication. Specialized knowledge centers around bathymetry and LiDAR topographic data and analysis, and other spatial datasets. These critical resources were utilized in the development of water right claims, specifically pertaining to lake ecosystems (including fish, waterfowl, and aquatic plants), riparian zones, and instream flow considerations.

GIS and Remote Sensing Analyst responsible for acquiring and integrating bathymetry, hydrography, and wetland GIS data from the Coeur d'Alene (CDA) Tribe and online sources in order to quantify the shallow, near-shore fish habitat in the southern portion of CDA Lake. The bathymetry depth analysis was performed using Esri ArcGIS raster surface modeling tools with many of the iterative functions automated in Python as the analysis was repeated for over 553 lake surface elevations. Analysis produced 79 individual littoral habitat polygon feature classes for future evaluations of potential linkages between CDA Lake levels and habitats used by historic and current populations of adfluvial Cutthroat and Bull trout.

FERC Relicensing, Rock Island Hydroelectric Project**Chelan County PUD, Wenatchee, WA**

Data Manager responsible for the development and maintenance of data standards and data storage and retrieval processes for study contractors. Leveraged technologies such as Esri Survey123 and SharePoint to improve data sharing and quality control for field data collection and deliverables, online data downloads, data coordinate systems and datums, and FERC document maps. Established multi-disciplinary focus groups to collaboratively address data management topics and document best practices in standard operating procedures and user guides. For the Recreation Inventory study report, conducted senior review of the geodatabase and photographs, and ensured accuracy of raw field data and final data deliverables to the client.

Asset Management**FirstLight Power Services, New Milford, CT**

Data Management Lead developing an enterprise geographic information system integrated with Adept Business Solutions. Year one activities include creating a backend folder system and authoritative datasets to support land and shoreline management for the Rocky River Pumped Hydro Storage facility, expanding the data management system to all FirstLight Connecticut Hydroelectric Projects.

FERC Relicensing, Solomon Gulch Hydroelectric Project**Copper Valley Electric Association, Valdez, AK**

Technical Advisor responsible for review of data management processes, GIS analysis, and figure production for relicensing documents. Assessment and correction of historic project documents to modern, digital formats for FERC Exhibit G.

Flood Inundation Mapping, Wells Hydroelectric Project**Douglas County PUD, East Wenatchee, WA**

GIS and Remote Sensing Analyst responsible for creating one-dimensional (1D) hydraulic model data inputs and resultant inundation maps for a hypothetical failure of Wells Dam in support of the overall Dam Safety Program and to help develop an Emergency Action Plan (EAP). Developed a continuous digital elevation model using LiDAR and bathymetric surveys, confirmed and adjusted vertical datum of each survey, and reprojected to a common coordinate system. For each modeled dam breach scenario, prepared high-resolution inundation maps of the Columbia River between Wells Dam and Priest Rapids Dam showing calculated time of arrival of flood peaks and spatial extent of inundation.

Probable Maximum Flood Analysis, Carmen-Smith Hydroelectric Project**Eugene Water & Electric Board, Foster, OR**

GIS and Remote Sensing Analyst responsible for updating the probable maximum flood (PMF) analysis using the U.S. Army Corps of Engineers HEC-HMS hydrologic model and HEC-SPP statistical software. In support of the energy budget snowmelt model, quantified forested areas using data from the National Land Cover Database and digitized areas of recent timber harvest regeneration from U.S. Department of Agriculture National Agricultural Imagery Program (NAIP) Imagery. The reservoir storage volume / elevation curves were calculated by using existing bathymetry, LiDAR, and ground surveys. The analysis utilized ArcGIS tools to confirm the vertical datum of each topographic dataset, construct triangulated irregular network surface models, and then develop reservoir elevation slices to calculate dead versus active storage volume / elevation relationships. Results from the PMF analysis included peak inflow, outflow, and water surface elevation for the Carmen Diversion, Smith, and Trail Bridge reservoirs.

Floodplain Restoration, Toppenish Creek Floodplain Restoration Project**Yakama Nation Wildlife Resource Management Program, Toppenish Creek, WA**

GIS and Remote Sensing Analyst responsible for creating channel centerline, channel banks, and a continuous digital elevation model (DEM) using topography extracted from LiDAR and bathymetry from cross-section survey data, in support of two-dimensional (2D) hydrodynamic modeling. For riparian and wetland vegetation restoration designs and revegetation prescriptions, compared the spatial distribution of floodplain vegetation communities with the simulated 2D model inundation extents of the 1.5- and 2-year flood events including the delineation of floodplain topographic depressions that would pond after inundation.

FERC Licensing, GIS and Data Management**Susitna-Watana Hydroelectric Project, Alaska Energy Authority, Susitna, AK**

Team Lead of a group of GIS, IT, and land surveying professionals from ten diverse engineering and environmental consulting firms, responsible for coordinating regular meetings to collaboratively implement IS policies, procedures, and standards, and providing technical leadership, information management, and data coordination to Project consultants. Lead author of the Project's GIS User Guide that documents GIS/CAD/GPS data, metadata, and map development standards in addition to establishing coordinate system definitions, horizontal and vertical datum transformation processes, geodetic survey control network ties, and data delivery and acquisition standards for the Geographic Information Network of Alaska (GINA) web mapping portal. Gained extensive experience in providing legal descriptions and field activity summaries for land use permit acquisition and year-end compliance reporting for federal, state, private, and native corporation landowners.

FERC Licensing, Groundwater Upwelling Analysis**Susitna-Watana Hydroelectric Project, Alaska Energy Authority, Susitna, AK**

GIS and Remote Sensing Analyst responsible for compiling, reviewing, and interpreting existing data to map groundwater-influenced aquatic and floodplain habitat (e.g., upwelling areas, springs, groundwater-dependent wetlands) within the Middle River Segment of the Susitna River. The GIS analysis relied on the following activities and work products from other resource studies: aerial and Global Positioning System (GPS) mapping of winter open leads as completed by an ice processes study; aerial thermal infrared imagery (TIR) as provided from a temperature mapping study; observational data concerning groundwater / surface water interactions collected as part of the habitat suitability criteria (HSC) studies associated with spawning and / or rearing fish; and historic mapping of upwelling locations documented in 1982 and 1984.

FERC Licensing, 2D Hydraulic and Fish Habitat Modeling**Susitna-Watana Hydroelectric Project, Alaska Energy Authority, Susitna, AK**

GIS and Remote Sensing Analyst responsible for providing GIS technical support including field site selection, field data quality control, and final report mapping for the characterization and mapping of aquatic habitats study. Developed GIS files of surficial substrate, vegetation cover, macrohabitat, and upwelling from field observations, flow-based orthophotos, and other instream flow database queries for input into an ArcGIS Python-based two-dimensional (2D) fish habitat model. She also produced visual presentations of model inputs as an overlay to SRH-2D depth and velocity results at multiple target flows for model validation.

Salmon Habitat Restoration Plan, Upper Quinault River**Quinault Indian Nation, Quinault River, WA**

GIS and Remote Sensing Analyst responsible for mapping riparian plant communities from aerial orthophotography and field-based GPS measurements as an overlay to engineered log jams for forest stand analyses, riparian silvicultural restoration designs, and invasive plant treatments. Constructed land ownership from diverse GIS datasets, including the delineation of the Quinault River ordinary high water mark, for land access permits with the Quinault Indian Nation, Olympic National Forest, and other private inholdings.

Habitat Conservation Plan, Deschutes River Basin**Deschutes Basin Board of Control, Deschutes River, OR**

GIS Task Manager responsible for providing mapping and spatial analysis support throughout development of the Deschutes Basin Habitat Conservation Plan. Phase 1 of the study provided a reference database of surface waters and covered features (irrigation district and City of Prineville) in the Deschutes Basin. Consolidation of all spatial information into a single digital format facilitated the analysis of effects of the covered features and activities, and eventual development of conservation measures.

FERC Relicensing, Boundary Hydroelectric Project**Seattle City Light, Metaline Falls, WA**

GIS Lead responsible for managing the development and maintenance of the base GIS which provided analytical and mapping products for the Project's Federal Energy Regulatory Commission pre-application document, study plans, study reports, license application, and license addendum exhibits. Provided GIS data management oversight of study contractors and led the development of the following core data layers that were used extensively in the technical studies: Project boundary, land ownership, and a surface model from LiDAR, photogrammetric, and hydrographic surveys. Currently providing GIS services in support of license implementation for the Tributary Non-native Fish Eradication and Suppression and Rare, Threatened, and Endangered (RTE) Plant Monitoring programs.

FERC License Implementation, RTE Plant Monitoring,**Boundary Hydroelectric Project, Seattle City Light, Metaline Falls, WA**

GIS and Remote Sensing Analyst responsible for providing GIS data development, analysis, and mapping services for Rare, Threatened, and Endangered (RTE) Plant Monitoring and Compliance, in support of license implementation. The RTE geodatabase is comprised of 675 rare plant and noxious weed locations, survey areas, and Federal Geographic Data Committee metadata from field surveys spanning eight years. The associated database lookup table contains attribute information related to the status and environmental conditions associated with each subpopulation. Over 400 field, quality assurance / quality control, and report maps were created showing mapped RTE plant locations in association with land ownership, topography, and recreation sites.

Surface Water Reference Mapping and Hydrologic Modeling**Snohomish County Surface Water Management Division, Everett, WA**

GIS Project Manager responsible for an on-site GIS services contract which supported a variety of planning and capital projects. Automated mapping routines were developed to produce surface water reference watershed maps showing: water features with stream type and Water Resource Inventory Area (WRIA) numbers; hydrogeology that consolidates geologic units into till, outwash, and wetlands; soil hazards with identified erosion areas; current land cover utilizing Landsat imagery; and future land cover from the County's Future Land Use General Policy Plan. Other tasks included preparing GIS files such as land cover, hazards, soils, and slope for use in Hydrologic Simulation Program FORTTRAN (HSPF) hydrologic modeling.

FERC Relicensing, Baker River Hydroelectric Project**Puget Sound Energy, Concrete, WA**

GIS Lead responsible for managing a multi-year GIS services contract responsible for acquiring, integrating, and maintaining all project resource data. Directed production of numerous analytical and mapping products for five primary working groups focusing on the following resource areas: aquatic resources, terrestrial/wildlife, recreation/aesthetics, cultural/historical, and economics/operations. Utilized ArcGIS software tools to produce numerous analytical and mapping products for technical studies focusing on reservoir tributary biological surveys, potential fish production, shoreline erosion, large woody debris management, hydrologic and geomorphic analyses, vegetation mapping, wildlife habitat evaluations, archaeological inventories, and recreation capacity and suitability. She worked directly with the client and subcontractors in producing presentation quality graphics and exhibits for the Project's ICD, IPP, PDEA, and License Application. License implementation activities include annual updates to the Project boundary and Exhibit G, bathymetry analysis for the Lower Baker Floating Surface Collector (FSC) Siting Plan, land acquisition data management for a variety of aquatic and terrestrial license articles, and inundation mapping showing partial, full, and induced dam failures at West Pass Dike, Upper Baker Dam, and Lower Baker Dam.

FERC Relicensing, Jackson Hydroelectric Project**Snohomish County PUD, Sultan, WA**

GIS contractor responsible for providing analysis and mapping services for the Special Status Plants, Noxious Weeds, Marbled Murrelets, and Northern Spotted Owls studies. During the license application phase, worked with local surveyors to delineate land ownership and create information for a successful Exhibit G submittal to FERC. Teamed with a local forester to update vegetation cover types and stand data using existing aerial imagery for the Project's Terrestrial Resources Management Plan (TRMP).

FERC Relicensing, Pit River Hydroelectric Project**Pacific Gas and Electric Company, Shasta County, CA**

GIS Analyst responsible for analyzing habitat-flow relationships for fish and eagle foraging by creating GIS compatible vector datasets using digitized field maps, a descriptive microhabitat database, and over 350 mapping products depicting five fish species/lifestage guilds at instream flows of 100 cfs to 1800 cfs. Newly acquired color digital orthophotography covering seven representative sample sites served as the base GIS data layer for this on-site habitat mapping effort.

ATTACHMENT A
SUBCASE NUMBERS: FEDERAL LAW-BASED CLAIMS

87-11982	87-12023	87-12067	87-12110	87-12150
87-11983	87-12024	87-12068	87-12111	87-12151
87-11984	87-12025	87-12069	87-12112	87-12152
87-11985	87-12026	87-12071	87-12113	87-12153
87-11986	87-12027	87-12072	87-12114	87-12154
87-11987	87-12028	87-12073	87-12115	87-12155
87-11988	87-12029	87-12074	87-12116	87-12156
87-11989	87-12030	87-12075	87-12117	87-12157
87-11990	87-12031	87-12076	87-12118	87-12158
87-11991	87-12032	87-12077	87-12119	87-12159
87-11992	87-12033	87-12078	87-12120	87-12160
87-11993	87-12034	87-12079	87-12121	87-12161
87-11994	87-12036	87-12080	87-12122	87-12162
87-11995	87-12037	87-12081	87-12123	87-12163
87-11996	87-12038	87-12082	87-12124	87-12164
87-11997	87-12039	87-12083	87-12125	87-12165
87-11998	87-12040	87-12084	87-12126	87-12166
87-11999	87-12041	87-12085	87-12127	87-12167
87-12000	87-12042	87-12086	87-12128	87-12168
87-12001	87-12043	87-12088	87-12129	87-12169
87-12002	87-12044	87-12089	87-12130	87-12170
87-12003	87-12045	87-12090	87-12131	87-12171
87-12004	87-12046	87-12091	87-12132	87-12172
87-12005	87-12047	87-12092	87-12133	87-12173
87-12006	87-12048	87-12093	87-12134	87-12174
87-12007	87-12049	87-12095	87-12135	87-12175
87-12008	87-12050	87-12096	87-12136	87-12176
87-12009	87-12051	87-12097	87-12137	87-12337
87-12010	87-12052	87-12098	87-12138	87-12338
87-12011	87-12053	87-12099	87-12139	87-12339
87-12012	87-12054	87-12100	87-12140	87-12340
87-12013	87-12055	87-12101	87-12141	87-12342
87-12014	87-12056	87-12102	87-12142	87-12343
87-12015	87-12057	87-12103	87-12143	87-12344
87-12016	87-12059	87-12104	87-12144	87-12346
87-12017	87-12060	87-12105	87-12145	87-12364
87-12018	87-12062	87-12106	87-12146	87-12365
87-12019	87-12063	87-12107	87-12147	87-12366
87-12020	87-12064	87-12108	87-12148	
87-12021	87-12066	87-12109	87-12149	
87-12022				

EXHIBIT B

ADAM R. F. GUSTAFSON

Acting Assistant Attorney General
Environmental and Natural Resources Division

VANESSA BOYD WILLARD

Trial Attorney, Tribal Resources Section
Environment and Natural Resources Division
U.S. Department of Justice
999 18th Street
South Terrace – Suite 370 Denver, Colorado 80202
Phone: (303) 844-1353
Fax: (303) 844-1350
vanessa.willard@usdoj.gov
and

EMMI BLADES

LAURA BOYER

Trial Attorneys, Tribal Resources Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 2004-7611
Phone: (202) 598-0661
Fax: (202) 353-1156
emmi.blades@usdoj.gov
laura.boyer@usdoj.gov

Attorneys for the United States

**IN THE DISTRICT COURT FOR THE FIFTH JUDICIAL DISTRICT OF
THE STATE OF IDAHO IN AND FOR THE COUNTY OF TWIN FALLS**

In Re the PRBA

Case No. 59576

) Subcase Nos. Attachment A
)
)
) UNITED STATES' SECOND RESPONSE
) TO STATE OF IDAHO'S FIRST SET OF
) REQUESTS FOR ADMISSION,
) INTERROGATORIES, AND REQUESTS
) FOR PRODUCTION OF DOCUMENTS
)

requirements contained in I.R.C.P. 36(a)(6), which provides only that “[t]he grounds for objecting to a request must be stated.”

INTERROGATORIES

INTERROGATORY NO. 2: Please state the name, address and telephone number of each and every person known to you or your counsel who has any knowledge of, or who purports to have any knowledge of the facts of the claims made by you in the PRBA. By this Interrogatory we seek the names, addresses and telephone numbers of all witnesses who have any knowledge of any fact pertinent to Nez Perce's Allotment Claims, Nez Perce's Instream Flow Claims and the Nez Perce's Springs claims.

RESPONSE: The United States objects to this Interrogatory as overbroad because it may seek identification of people that are aware of the United States’ claims but do not have relevant information related to the claims. The United States also objects to this Interrogatory because it may seek disclosure of a witness list before the March 2027 deadline to exchange witness lists as directed by the Order on Litigation Schedule.

Without waiving any objection or the right to amend its witness disclosures, the United States interprets this Interrogatory to seek the identification of people with relevant knowledge of the United States’ claims and refers the State to the *United States’ Rule 26(b)(4) Disclosure* produced on March 3, 2025. This disclosure identifies the names of expert witnesses who have been retained by the United States to testify in support of the United States’ claims on behalf of the Nez Perce Tribe and Allotees. The United States also refers to the expert reports produced to the parties on April 18, 2025.

INTERROGATORY NO. 3: Please describe the relevant knowledge you understand is possessed by each person identified in your answer to Interrogatory No.2.

RESPONSE: *See* Response to Interrogatory No. 2. The United States further responds that the expert witness's relevant knowledge is explained in their reports and supporting documents produced to the parties on April 18, 2025.

INTERROGATORY NO. 4: Please state the names, addresses and telephone numbers of all persons you intend to call as witnesses at the trial in the PRBA.

RESPONSE: *See* Response to Interrogatory No. 2.

INTERROGATORY NO. 5: With respect to the persons you intend to call as witnesses at the trial in the PRBA, please state the general nature of the facts to which they will testify.

RESPONSE: *See* Response to Interrogatory No. 2 and Response to Interrogatory No. 3.

INTERROGATORY NO. 6: Please state the name and address of each person whom you expect to call as an expert witness at the trial in this case, and for each such person, state the subject matter on which the expert is expected to testify, and state the substance of the facts and opinions to which the expert is expected to testify as required by Idaho Rule of Civil Procedure 26(b)(4).

RESPONSE: *See* Response to Interrogatory No. 2 and Response to Interrogatory No. 3.

INTERROGATORY NO. 7: If the expert witness identified in the above Interrogatory is to render an opinion in the PRBA, please set forth the underlying facts or data supporting or tending to support the opinion as required by Rule 705 of the Idaho Rules of Evidence.