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DEPARTMENT OF
WATER RESOURCES

Attorneys for Claimant Pioneer Irrigation
District

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

In Re SRBA

Case No. 39576

Subcase Nos. 63-02529 & 63-09109

**NOTICE OF SERVICE OF PIONEER
IRRIGATION DISTRICT'S RESPONSES TO
THE STATE OF IDAHO'S FIRST SET OF
DISCOVERY REQUESTS**

I HEREBY CERTIFY that on this 13th day of January, 2009, I caused the
NOTICE OF SERVICE OF PIONEER IRRIGATION DISTRICT'S RESPONSES TO STATE OF IDAHO'S
FIRST SET OF DISCOVERY REQUESTS and a true and correct copy of the foregoing NOTICE OF
SERVICE to be served by the method indicated below, and addressed to the following:

**NOTICE OF SERVICE OF PIONEER IRRIGATION
DISTRICT'S RESPONSES TO THE STATE OF
IDAHO'S FIRST SET OF DISCOVERY REQUESTS - 1**

Client:1079258.1

Original to:

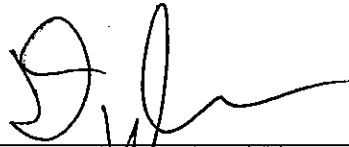
Representing: State of Idaho
David J. Barber
Office of the Attorney General
STATE OF IDAHO
700 West State Street, 2nd Floor
P.O. Box 83720
Boise, ID 83720-0010
Fax: (208) 854-8072

☐ U.S. Mail, Postage Prepaid
☒ Hand Delivered
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Copy to:

Director
IDAHO DEPARTMENT OF WATER RESOURCES
P.O. Box 83720
Boise, ID 83720-0098
Fax: (208) 287-6700

☒ U.S. Mail, Postage Prepaid
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Dylan B. Lawrence

Education

M.S., Civil Engineering
University of Idaho

B.S., General Engineering
Idaho State University

Professional Certification

Professional Engineer
Idaho No. 7914, 1995

Certified Water Right Examiner
Idaho No. 9-133

Areas of Expertise

- Water rights
 - investigations and analysis
 - permits and transfers
 - marketing and acquisitions
- Water resource investigations
- Water well design
- Surface water modeling
- Flow measurement
- Pumping efficiency evaluations

Experience Summary

Mr. King has over 18 years of professional and academic experience in water resources engineering. He is currently a Supervising Engineer with SPF Water Engineering, LLC and specializes in water right issues, water flow measurement, pumping system design, water well design, and geographic information systems (GIS). Prior work includes 14 years experience in a broad variety of Idaho Department of Water Resources' (IDWR) programs including water rights adjudication, water rights administration, safety of dams, and energy efficiency. He also has recent experience developing surface water models and providing consulting engineering services while employed at DHI, Inc, formerly known as the Danish Hydraulic Institute.

SPF Water Engineering, LLC – 2005 to present

Mr. King is currently a Supervising Engineer with SPF Water Engineering, LLC. SPF was founded in March 2004 to provide hydrologic characterization, water resource development, and public water system design and regulatory compliance. Mr. King provides consulting services on water rights issues, pump design, irrigation system evaluation, surface water hydrology, surface water modeling, and river hydraulics. His recent project experience includes the following:

- Water right permit and transfer applications
- Water right investigations
- Water right acquisitions and sales
- Water right beneficial use field examinations
- Adjudication claim preparation and support
- Stream flow measurement and monitoring
- Well design including designs to municipal public drinking water supply standards
- Well capacity determination
- Pumping system design

DHI, INC – 2004 to 2005

Mr. King worked as a senior project engineer responsible for development of various surface water models. Project experience includes the following:

Modeling – MIKE 11. Developed hydrodynamic 1-D MIKE 11 model of the Little Claggett Creek storm water drainage system, a part of Marion

County's East Salem Service District, Oregon. Produced flood maps for SCS Type 1A design storms and for the February 1996 flood event. This model includes 8.5 km of stream in two branches, over 100 cross-sections extracted from a 2 ft vertical resolution DEM, and 23 culverts with corresponding broad-crested weirs representing roadways over culvert crossings. Inflow boundary conditions are represented by 21 catchments contributing point-source and distributed inflows simulated in MIKE 11's rainfall / runoff module.

Modeling – MIKE BASIN. Project lead on MIKE BASIN surface water distribution models developed for the Idaho Department of Water Resources. These models are used by IDWR for three primary purposes: flow enhancement tools to address flow-limited stream reaches; decision making tools to assist in selecting effective mitigation and restoration projects; and communication tools for educating decision makers and stimulating discussion among stakeholders. Developed systems include the Pahsimeroi River and East Fork Salmon River, and experiences with Lemhi River and Stanley Basin models. These models operate on a daily time step and represent the water distribution system within the basins including the stream networks, points of diversion, places of use, and locations of return flow. Time series information includes records of stream gaging, diversion measurements, precipitation, and evapotranspiration. Provided training to IDWR staff, contractors, and watermasters on the operation of MIKE BASIN through a series of hands-on sessions. Presented proposals to local waterusers and stakeholders for new model applications in Morgan Creek and Carmen Creek.

Modeling – Rainfall / Runoff. Developed lumped conceptual rain/snow/runoff models of the Stanley and East Fork Salmon River Basins for the Idaho Department of Water Resources using DHI's lumped conceptual rainfall/runoff module. The developed models are used to supply tributary inflow boundary conditions to the East Fork Salmon River and Stanley Basin MIKE BASIN models.

Developed rainfall/runoff models of 21 catchments supplying inflow boundary conditions for the Little Claggett Creek MIKE 11 model described above. Rainfall/runoff is simulated using DHI's URBAN module. Four storm events are modeled including the February 1996 observed event and SCS Type-1A 2-, 10-, and 50-year design storms.

Idaho Department of Water Resources – 1990 to 2004

During 14 years with the Idaho Department of Water Resources, Mr. King held four different positions and gained experience in a wide range of IDWR activities. These positions included Technical Engineer in the Adjudication Bureau, and Staff Engineer positions in the Water Distribution Section, in Western Region's Safety of Dams unit, and in the Energy Division. Relevant experience includes the following:

Program Management

Managed Western Region's Safety of Dams program. Inspected dams and made recommendations for maintenance and operation to improve safety

and meet state standards. Issued storage certificates and authorizations to fill.

Lead technical consultant in statewide water measurement program. Defined water measurement standards and implemented a program for measuring and reporting ground-water withdrawals. Coordinated field work performed by department staff and various measuring districts. Inspected contractor projects for adequacy and compliance with department standards. Designed and managed water measurement databases.

Water Rights

Reviewed complex water right claims and prepared water right recommendations for the Director's Report to the Snake River Basin Adjudication court. Provided technical analysis and recommendations for nonstandard water right claims, such as claims for diversion rates exceeding the standard allocation, and for claims to the use of water outside of the standard seasons of use.

Provided training and direction to new employees, water districts, water measurement districts, groundwater districts, and private consultants on water rights, water measurement programs, and adjudication procedures.

Worked with water users and their legal representatives on various water right enforcement issues, including excessive and illegal water diversions.

Experienced with all aspects of IDWR regional office operations including water rights, transfers, well drilling, adjudication, water district operation, violations, enforcement, and customer complaints.

Irrigation and Pumping Systems

Performed pumping system evaluations including determinations of municipal, industrial, and agricultural pumping plant efficiencies and recommended measures for improved efficiency and reduced operating costs. Provided recommendations and designs for conversions to low-pressure irrigation systems for reduced operating costs and improved yields.

Technical Expert to Snake River Basin Adjudication (SRBA) Court

Provided technical engineering support to department staff in the ongoing SRBA.

Designated as department expert to the SRBA court regarding irrigation requirements, evapotranspiration, and crop water requirements. and how this information is utilized for preparing recommendations.

Public Relations

Presentations at public meetings to explain laws and regulations relating to water measurement and water appropriation.

Provided conflict resolution support for several water related disputes.

Trained IDWR employees, state Watermasters and Hydrographers, contractors, and consultants on water measurement standards, equipment, practices, and procedures through regular training sessions and individual assistance.

Guest lecturer in 1996 and 1998 for College of Southern Idaho's Water Measurement course, and in 1998 for Boise State University's Water Measurement lab.

Presented *Selection and Installation of Pipe Flow Water Measurement Devices* at the 1997 Idaho Irrigation Equipment Show and Exhibition, Shilo Inn, Idaho Falls, January 8-9.

Technical

Developed and proposed to department administration and to the general public technically sound methods of using power records for estimation of pumped water diversions.

Determined acceptability and provided professional opinions for numerous non-standard water measurement methods and devices proposed to IDWR by engineering consultants and water users.

Determined conveyance capacity of pumps, diversions, pipelines, open channels, turbines, etc.

Led IDWR efforts to utilize global positioning systems (GPS). Developed standards for use, trained staff and consultants, and integrated GPS data collection into GIS work.

Report Development

Authored various reports including annual reports of ground water diversions, reports to individual water users, flowmeter accuracy reports, and various other reports relating to water measurement.

Co-author of *Eastern Snake Plain Aquifer Water Measurement Program, A Summary of Measurement Activity & Results from Basin 36 Project Area, 1995-1996 and a Review of Program Expansion in 1997*, IDWR, May 1998.

University of Idaho – 1999 to 2002

Masters of Science in Civil Engineering Thesis: The Effective Discharge Concept in Gravel Bed Stream Restoration: The Twelve Mile Reach of the Salmon River at Challis, Idaho.

Determined channel effective discharge based on sediment transport measurements and flow records. Compared effective discharge to bankfull discharge and stated implications of findings in regards to channel restoration. Completed hydraulic, hydrologic, and geomorphologic characteristics of the study reach. Presented findings and recommendations to technical groups and local property owners.

Developed hydrodynamic pseudo 2-D MIKE 11 model of the Twelve Mile

Reach, Salmon River, near Challis, ID. Produced animated flood maps of primary flooding events from 1974 (100-yr), 1996, and 1997. This model includes 27-km of mainstem river including braided sections and split flows. Over-bank discharge into Hannah Slough and across One-Mile Island is represented by link-channels. The model includes 68 surveyed cross-sections and utilizes a 2-ft interval contour map for flood mapping.

Education

M.S., Geological Engineering
University of Idaho

B.S., Geological Engineering
University of Idaho

Professional Certification

Professional Engineer
Idaho No. 6266, 1990

Professional Geologist
Idaho No. 646, 1989

Oregon No. G1311, 1992

Certified Water Right Examiner
Idaho No. 05-129

Areas of Expertise

- Design, installation, and testing of high-capacity wells for irrigation, municipal, and industrial water supply
- Groundwater development studies
- Water rights

Experience Summary

Mr. Scanlan has more than 20 years of professional experience in water supply consulting as an engineer and hydrogeologist. He has particular expertise in water rights, well and pump design, public water systems, pressurized irrigation, and other water resource issues.

Mr. Scanlan's work experience has focused on well design and construction, surface water and ground water pump systems, aquifer and well testing, water development studies, and water rights. He also has experience in geothermal resource development, mining-related environmental studies, ground water drainage investigations, soils investigations, geologic mapping, and wastewater land application projects. He has served as Chairman of the Idaho Board of Registration for Professional Geologists. Mr. Scanlan is a Certified Water Right Examiner in Idaho.

SPF Water Engineering, LLC—2004 to present

Mr. Scanlan is currently a Principal Engineer with SPF Water Engineering, LLC. SPF Water Engineering, LLC, was formed from Scanlan Engineering in March 2004 to provide a wider range of water resource engineering services. Since joining SPF, Mr. Scanlan has continued his practice of water resource consulting and engineering, with additional emphasis on development of community water systems for subdivisions and planned communities in southwest Idaho.

Scanlan Engineering—1994 to 2004

Mr. Scanlan formed Scanlan Engineering in 1994 to provide engineering and hydrogeologic consulting to public and private clients. Scanlan Engineering provided water resource consulting services to more than 200 separate clients, primarily in southwest Idaho. Local clients included the City of Boise (Public Works Department, Parks Department), Micron Technology, J.R. Simplot Company, Capitol Water Corporation, United Water Idaho, Inc., Meridian School District, City of Eagle, Sorrento Lactalis, City of Nampa, Boise State University, Ada County Highway District, and the Idaho Water Resources Research Institute. Mr. Scanlan has served as a subconsultant on water supply projects for numerous engineering firms in Idaho, most recently including Montgomery Watson Harza, Toothman-Orton Engineering Company, Entranco, Secesh Engineering, Materials Testing, Inc., and Civil Survey Consultants.

Montgomery Watson—1986 to 1993

Prior to forming Scanlan Engineering in 1994, Mr. Scanlan worked as a supervising hydrogeologist for Montgomery Watson in Boise, Idaho. He

managed and conducted investigations related to ground water development and ground water contamination at locations throughout the western United States.

U.S. Geological Survey—1984 to 1986

Mr. Scanlan was employed by the U.S. Geological Survey as a field assistant in the geologic division prior to joining Montgomery Watson in 1986. Responsibilities included geologic mapping, landslide hazard evaluation, and mineral potential studies. Mr. Scanlan worked on the Challis and Hailey 2° Quadrangle CUSMAP programs.

Relevant Water Supply Project Experience

- Ground water development projects at more than 100 sites in Idaho for public and private water utilities, subdivisions, schools, and industries, including production well and pump design, aquifer pumping tests, exploration drilling programs, and ground water development studies.
- Design, construction monitoring, and testing of four 1,000- to 1,200-foot, high-capacity, industrial water supply wells and pump systems for Micron Technology in Boise, Idaho.
- Lead consultant to Micron Technology for the Boise River water supply and aquifer recharge project. Mr. Scanlan provided consulting services involving water rights, a nominal 25,000-gpm pump station, 3 miles of 24-inch and 30-inch pipeline, an ultra-filtration membrane water treatment system, and a nominal 4-MGD injection well for recharge purposes.
- Irrigation well and pump system design, surface water pump system design, construction monitoring, and well testing at municipal parks in Boise, Idaho. These projects included work on approximately 80 well and pump systems, including design and construction of more than 20 well or surface water pumping systems.
- Design, permitting, and construction inspection of well pump systems and well houses for Capitol Water Corporation in Boise, Idaho. Mr. Scanlan also provided consulting services related to ASR and water rights.
- Design, construction, and testing of salt water production wells for large-scale aquarium projects in Guam and Taiwan.
- Evaluation of ground water potential for snowmaking supplies at Sun Valley and Bogus Basin ski areas and design and testing of the water supply well for the snowmaking system at Sun Valley.
- Evaluation and testing of infiltration galleries and Ranney Collectors at Sequim, Washington (horizontal gallery, Dungeness River), Irrigon, Oregon (four Ranney Collectors, Columbia River), and Boise, Idaho (three Ranney Collectors, Boise River).
- Ground water development studies, well construction, and aquifer testing for fish hatchery projects in the Columbia, Umatilla, Walla Walla, Imnaha, and Grand Ronde river basins of Oregon for the

Bonneville Power Administration. These projects included test well drilling and aquifer tests at ten locations, with well construction in alluvial and basalt aquifers.

- Production well design and testing at the Upper Pahsimeroi Fish Hatchery for Idaho Power Company.
- Design of the domestic supply, mine-pit dewatering, and industrial supply wells for the Beartrack mining project at Leesburg, Idaho.
- Resident geologist during drilling and completion of a 3,015-foot water supply well at Wright, Wyoming.
- Water master plan for the 3600-acre City of Boise Twentymile South Farm. The master plan included reconfiguration of water rights, development of additional irrigated lands, design of two large-capacity irrigation wells, and design of a 500-hp variable deep well turbine pump system.

Relevant Water Rights Experience

- Preparation of hundreds of water right applications (transfers, amendments, permits, claims) for public and private clients in Idaho. Since 2004, Mr. Scanlan and SPF staff have been involved in more than 150 projects involving water rights for more than 100 different clients.
- Evaluation of surface water and ground water interactions, well interference, irrigation development, and consumptive water use related to water right transfers in the Boise Valley, Wood River Valley, Mud Lake, Magic Valley, Big Lost River, and Little Lost River areas of Idaho.
- Evaluation and measurement of flow from springs involved in water right disputes along the Snake River near Twin Falls, Idaho.
- Investigations related to Snake River Basin Adjudication claims, including calculation of irrigation requirements and seepage losses, measurement of irrigation diversion rates, and determination of historically irrigated areas.
- Expert witness testimony regarding water use, well interference, and the interaction of surface water and ground water for numerous clients in southern and central Idaho.
- Evaluation of irrigation diversions, natural flow, return flow, and storage accounting on the Payette River system for the Payette Water Users Association.
- Evaluation of Federal and Tribal in-stream flow and spring claims in the Snake and Salmon River Basins.
- Preparation of mitigation plans to allow ground water diversions for irrigation and industrial use in moratorium areas or ground water management areas in the Boise and Snake River Basins.

Relevant Geothermal Resource Development Experience

- Construction monitoring for drilling and hydraulic fracturing of a 2,300-foot geothermal injection well for the Veterans Administration Medical Center in Boise, Idaho.
- Project manager for detailed study of the Boise Front Geothermal Aquifer for the city of Boise and Boise Warm Springs Water District. The study included computer modeling of hydraulic and thermal impacts of increased geothermal fluid production and spent fluid injection. Mr. Scanlan served as project manager for design, construction, and testing of a 3,200-foot geothermal injection well for the city.
- Aquifer testing and high-capacity variable-speed pump system design for deep geothermal space-heating wells at the College of Southern Idaho.
- Geothermal aquifer investigations, well testing, production well and pump design, and water level monitoring for J.R. Simplot Company at aquaculture facilities in Caldwell and Grand View, Idaho.

Professional Affiliations

Idaho Association of Professional Geologists

National Ground Water Association

Idaho Ground Water Association