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DEPARTMENT OF
WATER RESOURCES

Attorneys for New York Irrigation District

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

Sub Case No: 63-31621

**SUPPLEMENTAL DISCLOSURE OF
EXPERT WITNESSES BY THE NEW
YORK IRRIGATION DISTRICT**

The New York Irrigation District, by and through its attorneys of record, hereby disclose the following individuals who may be called to testify as witnesses at the trial for this matter:

1. Mr. Terry Scanlan, whose C.V. is attached as an Expert Witness, will testify on behalf of New York Irrigation District:

Mr. Jason Thompson, E.I.T., and I, identified locations to measure water flow in Three Mile Creek, Five Mile Creek, Eight Mile Creek, Nine Mile Creek, Ten Mile Creek and one Unnamed Lateral, with a purpose of determining the flow of water in each of those "creeks or drains".

The first measurements by Mr. Jason Thompson took place on September 27 and 28, 2007, the results of those measurements are appended hereto as Exhibit No 1, which I will identify and testify to Exhibit No. 1 and its findings; the next measurement was on October 4, 2007, a copy of which is appended hereto and marked Exhibit No. 2, which I will identify and testify as to its findings; the third measurement was made on October 11, 2007, the results of which are contained in Exhibit No. 3, appended hereto and made a part hereof, I will identify and testify as to its findings; the final measurement was on October 25, 2007, a copy of which is appended hereto and marked Exhibit No. 4, which I will identify and testify as to its findings.

Based upon my experience of over 20 years as an engineer and geologist dealing with hydrology, I will express my opinion based upon my experience and the measurements taken by Jason Thompson under my direction. I will testify that in my opinion, neither Three Mile Creek, Five Mile Creek, Eight Mile Creek, Nine Mile Creek, Ten Mile Creek, nor the Unnamed Lateral, measured at a Cloverdale road site, have sufficient natural flow at the points of measurement during the irrigation season to reliably irrigate any property or real estate relying on any of the above identified creeks or drains for irrigation water. In this instance, natural flow is defined as groundwater that discharges to the stream channel or runoff of precipitation that reaches the stream channel.

The Boise Project Board of Control and the Irrigation Districts using the New York Canal all discontinued providing irrigation water to the land in which each of the above cited water ways exist as of approximately September 30, 2007. Following that date, there was no measurable flow of water in any of the creeks, waterways, or drains at the measurement points identified above. Therefore, the conclusion is that the water flowing at the measurement points

in those creeks, drains or waterways, during the irrigation season is primarily the result of waste water from irrigation water supplied by the irrigation companies to their clientele.

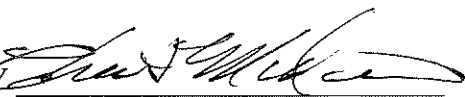
2. Mr. Jason Thompson, whose C.V. is attached as an Expert Witness, will testify as to measurements taken and fact that no measurable flow existed in Three Mile Creek, Five Mile Creek, Eight Mile Creek, Nine Mile Creek, Ten Mile Creek, nor the Unnamed Lateral following the approximate September 30, 2007, discontinuance of New York Irrigation District's delivery to its patrons.

3. Mr. Robert D. Schmidt, hydrologist for the United States Bureau of Reclamation, whose C.V. is attached as an Expert Witness, will testify regarding the source of the water in project drains, including the fact that the source of water for this right is wastewater.

4. Mr. Jerry Gregg, Area Manager Snake River Area Office, United States Bureau of Reclamation, upon being called as an Expert Witness, will testify regarding the development and operations of the Boise Project, including the drainage systems and the integrating of existing defiles.

Dated this 3/ day of October, 2007

McDevitt & Miller LLP

BY 

Chas. F. McDevitt

Attorneys for New York Irrigation District

CERTIFICATE OF SERVICE

I hereby certify that on the 21st day of October, 2007, I caused to be served, via email and telecopy, a true and correct copy of the foregoing document, upon:

CLERK OF THE SRBA COURT	Hand Delivered	☒
SRBA Courthouse	U.S. Mail	☒
District Court	Fax	☒
Fax: (208) 736-2121	Fed. Express	☒
	Email	☒

James Franklin Shoemaker	Hand Delivered	☒
3497 E. Zaldia Lane	U.S. Mail	☒
Meridian, ID 83642	Fax	☒
	Fed. Express	☒
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United States Department of Justice	Hand Delivered	☒
Environment & Nat'l Resources Div	U.S. Mail	☒
550 W Fort Street, MSC 033	Fax	☒
Boise, ID 83724	Fed. Express	☒
	Email	☒

Chief, Natural Resources Division	Hand Delivered	☒
Office of Attorney General	U.S. Mail	☒
PO Box 44449	Fax	☒
Boise, ID 83711-4449	Fed. Express	☒
	Email	☒

RONALD J. TENPAS	Hand Delivered	☒
Acting Assistant Attorney General	U.S. Mail	☒
DAVID W. GEHLERT	Fax	☒
Environment and Natural Resources Div.	Fed. Express	☒
U.S. Department of Justice	Email	☒
1961 Stout Street, 8 th Floor		
Denver, Colorado 80294		

McDEVITT & MILLER LLP

BY Heather Hark, legal asst.

EXHIBIT NO. 1

Summary of the flow observations made on September 27 and 28:

Threemile and Fivemile Creeks. Threemile Creek was visted just above the confluence with Fivemile Creek (Site 10), but there was insufficient flow for a measurement. Fivemile Creek was measured within the United Water equipment storage yard (Site 3). The measured flow was 0.48 cfs. Accuracy was likely poor due to a very wide wetted area, most of which had negligible flow. A Fivemile Creek flow of 3.24 cfs was then measured approximately 3000 feet downstream at Maple Grove Road (Site 9). This significant increase in flow over a short distance suggests that another surface water source is discharging into the creek. We suspect that one source of the flow increase could be the Farmer's Lateral, which crosses Fivemile Creek in this reach. Jason will attempt to obtain access to Fivemile Creek through this area to identify the source of additional flow. We will continue to monitor flows at these locations on a weekly basis.

Eightmile Creek. Eightmile Creek was measured at the two locations (Sites 1 and 2) that were identified during our tour last Wednesday. Flows at both locations were between 6.0 and 6.5 cfs. We will continue to monitor flows at these locations on a weekly basis.

Ninemile Creek. Ninemile Creek was measured at a point on the north side of Amity Road (Site 4, 0.66 cfs) and in the area that we visited last week (Site 5, 0.50 cfs), downstream from the large pond. We will continue to monitor flows at these locations on a weekly basis.

Tenmile Creek. Tenmile Creek was measured at Columbia Road (Site 8, 1.26 cfs). A tributary of Tenmile Creek was also measured at Columbia Road (Site 7, 0.06 cfs), although no flow was observable in this tributary channel about 1000 feet further downstream. Tenmile Creek had no visible flow at Lake Hazel Road, suggesting that the flow is being diverted within this reach. We will continue to monitor flows at these locations on a weekly basis.

EXHIBIT NO. 2

Summary of the flow observations made on October 4:

Fivemile Creek @ United Water (Site 3) – Flow measured at 0.14 cfs

Fivemile Creek @ Maple Grove Road (Site 9) – There was water present, I attempted a flow measurement but no flow was detected

Threemile Creek US Fivemile (Site 10) – Water was ponded at road crossing, but no flow observed in or out of ponded water

I checked Fivemile Creek where it meets the Farmers Lateral. The Farmers Lateral is piped over Fivemile Creek, but there is also a flume connecting the lateral and Fivemile Creek. There was no gate at the head of the flume. It is very likely that at the time of the last measurement, flow was entering Fivemile from the lateral. The lateral was dry this time, and there was no flow observed in Fivemile Creek at Maple Grove.

Eightmile Creek @ McDonald Lateral (Site 1) – There was water present, but no visible flow. I did not attempt a measurement

Eightmile Creek @ Reutzel Dr (Site 2) – There was water present, but no visible flow. I did not attempt a measurement

Ninemile Creek @ Willandra Way (Site 4) – No water present

Ninemile Creek @ Zaldia Ln (Site 5) – There was water present, but no visible flow. I did not attempt a measurement

Tenmile Creek @ Lake Hazel Rd (Site 6) – There was water present, but no visible flow. I did not attempt a measurement

Tenmile Creek @ Columbia Rd (Site 8) – There was water present, but no visible flow. I did not attempt a measurement

Unnamed Lateral @ Cloverdale Rd (Site 7) – No water present

EXHIBIT NO. 3

Summary of the flow observations made on October 11:

Fivemile Creek @ United Water (Site 3) – Flow measured at 0.15 cfs (flow on October 4 was measured at 0.14 cfs)

Fivemile Creek @ Maple Grove Road (Site 9) – There was water present, but no visible flow (same as on October 4)

Threemile Creek US Fivemile (Site 10) – Water was ponded at road crossing, but no flow observed in or out of ponded water (same as on October 4)

Eightmile Creek @ McDonald Lateral (Site 1) – There was water present, but no visible flow (same as on October 4)

Eightmile Creek @ Reutzel Dr (Site 2) – There was water present, but no visible flow (same as on October 4)

Ninemile Creek @ Willandra Way (Site 4) – No water present (same as on October 4)

Ninemile Creek @ Zaldia Ln (Site 5) – There was water present, but no visible flow (same as on October 4)

Tenmile Creek @ Lake Hazel Rd (Site 6) – There was water present, but no visible flow (same as on October 4)

Tenmile Creek @ Columbia Rd (Site 8) – There was water present, but no visible flow (same as on October 4)

Unnamed Lateral @ Cloverdale Rd (Site 7) – No water present (same as on October 4)

EXHIBIT NO. 4

Summary of the flow observations made on October 25:

Notable changes from the observations made on October 11 include no visible flow on Fivemile Creek at United Water and no water present at Threemile Creek US of Fivemile Creek.

Fivemile Creek @ United Water (Site 3) – There was water present, but no visible flow

Fivemile Creek @ Maple Grove Road (Site 9) – There was water present, but no visible flow (same as on October 4 and 11)

Threemile Creek US Fivemile (Site 10) – No water present

Eightmile Creek @ McDonald Lateral (Site 1) – There was water present, but no visible flow (same as on October 4 and 11)

Eightmile Creek @ Reutzel Dr (Site 2) – There was water present, but no visible flow (same as on October 4 and 11)

Ninemile Creek @ Willandra Way (Site 4) – No water present (same as on October 4 and 11)

Ninemile Creek @ Zaldia Ln (Site 5) – There was water present, but no visible flow (same as on October 4 and 11)

Tenmile Creek @ Lake Hazel Rd (Site 6) – There was water present, but no visible flow (same as on October 4 and 11)

Tenmile Creek @ Columbia Rd (Site 8) – There was water present, but no visible flow (same as on October 4 and 11)

Unnamed Lateral @ Cloverdale Rd (Site 7) – No water present (same as on October 4 and 11)

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

Education

**M.S., Civil and Environmental
Engineering**

Utah State University

B.S., Biology

Boise State University

Professional Certification

Engineer-in-Training

Utah, 2002

Training

AutoCAD Level 1 Training

PacificCAD, Inc., 2004

OSHA 40-Hour

2004

OSHA 8-Hour Refresher

2005

Relevant Experience

- Water rights investigation and interpretation
- Water rights amendments and transfers
- Application of geographic information systems (GIS)
- Water supply assessments
- Well site evaluations
- Well completion reports
- Monitoring of water quality, ground water levels, and streamflows
- Oversight of pump and well testing

Experience Summary

Mr. Thompson is a Water Resources/Environmental Engineer with over 6 years of educational and professional experience relating to water resource engineering. Currently, Mr. Thompson is employed as an associate engineer (EIT) for SPF Water Engineering, LLC. His duties include investigating water rights, assisting in water supply assessments, preparing reports related to well engineering and construction, and various field work. Mr. Thompson is also a trained geographic information system (GIS) and CAD technician. Prior to working at SPF Water Engineering, Mr. Thompson worked as a consulting engineer specializing in NEPA studies related to water resources, water rights evaluations, surface hydrologic modeling, storm water detention pond design, mine tailings repository design, and natural channel design. He also has two years of experience performing field studies related to aquatic and riparian habitat assessment, botanical surveys, stream classification, hydrology, and surveying. His educational background is in environmental engineering with an emphasis in water/wastewater treatment, surface water quality, and natural systems engineering. He has also taken classes in groundwater, hydrology, hydrologic/hydraulic modeling, and watershed restoration. His undergraduate education focused on biology, with an emphasis in botany and microbiology.

SPF Water Engineering, LLC—Oct 2005 to present

Mr. Thompson is currently an associate engineer (EIT) for SPF Water Engineering, LLC. His duties include investigating existing water rights, facilitating water rights transfers, assisting in water supply assessments for proposed water systems, and preparing well site evaluations and well completion reports. Mr. Thompson also performs field work, including ground water quality sampling, ground water level monitoring, surface flow measurements, and the oversight of pump and well testing. Mr. Thompson also applies GIS technology to produce maps for various projects.

Science Applications International Corporation – Feb 2004 to Oct 2005

At SAIC, Mr. Thompson wrote the water resources section in a NEPA study for a large highway project in Washington. He also performed several water rights evaluations for the state of Washington, identifying source waters for proposed ground water withdrawals. Mr. Thompson also conducted surface hydrologic modeling for several projects, including the design of two storm water detention ponds. As part of two large mine tailings removal projects, Mr. Thompson assisted in the design of on-site mine tailings repositories and a natural channel restoration design. As part of a water quality and storm water assessment at an abandoned industrial site, Mr. Thompson was responsible for assimilating and analyzing collected chemical sampling data. The data was incorporated into an

Access database for data retrieval and analysis, and a GIS framework was developed to visually display sampling locations and selected attributes.

Utah State University, Graduate Researcher – Jan 2002 to June 2002

As a graduate student working on his Master's thesis, Mr. Thompson developed an aquatic and riparian habitat assessment methodology for identifying degraded sections of the Santa Clara River in southwest Utah. The field work component of this project required identification and evaluation of mesohabitat types, the riparian community, instream cover components, channel bed substrate, and bank stability. Data analysis involved the development of a streamflow impairment procedure relating measured existing flow conditions with a theoretical flow representative of natural flow conditions as well as a methodology for assessing the potential deleterious effects of water temperature on the native fish community. This habitat assessment also required spatial analyses of different land use classifications within the Santa Clara River floodplain using GIS as well as aerial photograph interpretation.

Utah State University, Field Crew Member – July 2000 to Nov 2000

Mr. Thompson worked as a field crew member performing hydrologic, bathymetric, and water quality studies on the Nooksack River in northwest Washington. This field work involved establishing and downloading thermographs for water temperature monitoring, measuring discharge, operating a motorized inflatable boat and associated sonar equipment, taking water quality measurements using field kits, collecting invertebrate samples using different accepted techniques, and performing surveys using both a Total Station and survey-grade GPS equipment. Experience was also obtained on salmonid identification and habitat evaluation.

USDA Agricultural Research Service – May 1998 to Aug 1998

Mr. Thompson conducted a comprehensive literature review regarding riparian and stream restoration techniques for incorporation into a BLM Riparian Knowledgebase to assist land managers in performing applicable restoration efforts. He obtained a comprehensive knowledge of existing restoration techniques, including determination of appropriate methods taking into account site-specific characteristics and effective monitoring procedures.

USDA Bureau of Land Management – May to Aug 1996, 1997

As a student intern for the Bureau of Land Management, Mr. Thompson conducted rare plant surveys in the Owyhee Desert of southwest Idaho. This work required plant identification, four-wheel drive vehicle operation, and a familiarity with the use of topographic maps. This internship also involved the classification of natural stream types using the Rosgen Classification utilizing the appropriate field techniques. This internship also provided Mr. Thompson with the opportunity to evaluate the functioning condition of riparian areas, taking into account vegetation structure, bank stability, and disturbance.

Curriculum Vita

Robert D. Schmidt

Education

B.S. Mathematics 1970, University of Minnesota

M.S. Geoengineering/Hydrology 1985, University of Minnesota

Work History

2007 Consulting Groundwater Hydrologist, Boise Idaho.

Develop a groundwater hydrologic model to estimate seepage rates from the proposed Black Rock reservoir near Hanford Washington, and potential impacts on the nearby nuclear reservation. Participate in a collaborative study with University of Idaho economists to develop coupled hydrologic and economic models for the Boise Valley. Use the models to quantify the value of hydrologic/economic externalities associated with canal seepage, drain returns and groundwater pumping in the Boise Project.

2000-2006 Hydrologist, Bureau of Reclamation, PN Regional Office.

Conduct a broad range of groundwater hydrologic investigations in Idaho and Oregon, mostly involving development and application of groundwater models. Develop a GIS water budget data base for the Lower Boise Valley. Project the impact of future Domestic, Commercial, Municipal and Industrial water use in the basin on groundwater resources. Develop analytic element groundwater models of the Boise Project, for use in evaluating hydrologic impacts of new groundwater withdrawals on Reclamation canals and reservoirs. Provide expert testimony with regard to hydrologic impacts of new groundwater withdrawals on Boise Project canals and drains.

Participate in informational exchanges with other state, federal, tribal, and university hydrologists regarding groundwater model development and application in Idaho and Oregon. Develop models of groundwater and stream interactions in the Bandon Cranberry Water Control District, for the Oregon Water Resource Dept. Develop flow and contaminant transport models for gasoline spill remediation in Payette Idaho and Garden Valley Idaho, for USEPA. Coordinate development and application of groundwater and river system models of the Umatilla basin in Eastern Oregon, to determine flow mitigation requirements for irrigation districts. Direct Reclamation activities related to monitor well construction and hydrologic data acquisition in the Eastern Snake Plain. Member of technical advisory committee for the University of Idaho, Eastern Snake Plain groundwater model enhancement project.

1998-2000 Hydrologist/Team Leader Managed Aquifer Recharge Program, Bureau of Reclamation and Idaho Dept of Water Resources.

Direct hydrologic investigations of managed aquifer recharge in the Eastern Snake Plain, in conjunction with the Idaho Department of Water Resources and the University of Idaho. Use hydrologic models to identify potential managed recharge sites and determine impacts on groundwater level and spring discharge.

Evaluate impacts of managed aquifer recharge on Salmon flow augmentation, hydropower rights, rental pool water availability, winter water savings, instream habitat for fish and wildlife. Work with IDEQ and IDWR to establish groundwater monitoring requirements for pilot recharge projects.

1997-1998 Consulting Groundwater Hydrologist.

Develop groundwater hydrologic models for mine closure planning. (sub contractor to DB Stephens and Assoc.)

1995-1997 Hydrologist, Bureau of Reclamation, Denver Technical Support Center.

Perform hydrologic investigations in support of experimental in-situ copper leaching test at the Mineral Park mine in northern Arizona. Conduct pumping tests and develop analytical and numerical groundwater models.

1992-1995 Supervisor, Hydrologic Applications Group, Twin Cities Minnesota Research Center, Bureau of Mines.

Directed multi-disciplinary group of scientists, engineers, and technicians in hydrologic studies related to mining and water resources.

1975- 1992 Hydrologist, Twin Cities Minnesota Research Center, Bureau of Mines.

Develop analytical and numerical models of groundwater flow and contaminant transport in connection with coal and hard rock mining activities. Develop new coal mine dewatering methods. Conduct aquifer tests and develop hydrologic data acquisition systems for aquifer testing. Prepare and publish investigative reports.

Selected Reports and Publications (1990- present)

Schmidt RD, J. Johnson, K. Didricksen, Modeling Groundwater Hydrologic Impacts of the Potential Black Rock Reservoir, USBR Technical Series TS-YSS-19, September 2007, 88 pp.

Schmidt RD, D. Dyke, Z. Cook, A Distributed Parameter Water Budget Data Base for Lower Boise Valley, A collaborative USBR/IDWR report , January 2007, 110pp.

Schmidt RD, Hydrologic Analysis of the Payette Gasoline Spill (USBR report for USEPA) August 2002, 32 pp.

Schmidt RD, Modeling Groundwater and Stream Interactions I the Bandon Cranberry Water Control District Bandon, Oregon, (USBR report for OWRD) July 2002, 74 pp.

Schmidt RD, and K Tarbet, Sand Hollow Groundwater Hydrologic Modeling Investigations, USBR report, March, 2002, 29 pp.

Idaho Dept of Water Resources Investigative Report, Feasibility of Large-Scale Managed Recharge of the Eastern Snake Plain Aquifer System, (coauthored with Paul Castelin, Jeffery Lefkoff, and Rex Harding), December, 1999, 233 pp.

Schmidt RD and D. Earley, New Facilities Investigations: Hydrologic Impact of In Situ Leaching at Cyprus Mineral Park Mine, Aquifer Protection Permit Application submitted to Arizona Dept. of Environmental Quality, July 1 1995.

Schmidt RD, Salovich M.J, Sodhi P, and J. Oswald, Reference Guide and User Manual for MFLOW, an Analytic Element Hydrology Model , USBM Open File Reprt ,1995.

Schmidt RD, Dahl L., Kim K., Paillet, F. and D. Earley, Hydrologic Characterization of a Chalcocite Copper Ore Deposit for In Situ Leach Mining, SME/AIME Annual Meeting, Denver, Co. preprint 95-252, March 6-9, 1995, 21 pp. (accepted by International Journal of Surface Mining, Reclamation, and Environment for publication in 1996)

Earley D., Schmidt RD, Y.C. Kim , Mitigation of Acid Rock Drainage through Application of In Situ Mining Technology to Fracture Hosted, Supergene Copper Sulfide Ore Deposits, Engineering Foundations Conf. on Technical Solutions for Pollution Prevention in the Mining and Mineral Processing Industries, Palm Coast Fl, Jan. 22-27, 1995.

Schmidt, RD, Earley D., and M. Friedel, Dynamic Influences on Hydraulic Conductivity during In Situ Copper Leaching, in In situ Recovery of Minerals II Proceedings of Engineering Foundations Conf. on in situ recovery of minerals, ed. S Swan and K. Coyne p 259-287, 1994.

Friedel M. , Schmidt RD, Jones P., and Y.C Kim, Geostatistical Analysis of Dynamic Transmissivity Conditions during In situ Copper Leaching, Proceedings: APCOM 92, 23rd International Symposium Computer Applications in the Mineral Industries, Tucson Az., April 7-11, 1992, pp 49-59.

Schmidt RD, Factors Affecting Residential Water Well Yield in Vicinity of Underground Coal Mines, Proceedings; 3rd Workshop on Surface Subsidence Due to Underground Mining, Morgantown W. Va., June 1-4, 1992, p 244-252.

Schmidt, RD and M. Friedel, Application of Computers in the Analysis of In Situ Leach Mining Hydrology, Proceedings: Indo-American Seminar on Computers in the Mineral Industry - Current State of the Art and Emerging Needs, Dhanbad, India, Nov 10-13, 1991, 21 pp..

Friedel M. and RD Schmidt, Effect of an Unsaturated Setting on the Hydrology of In Situ Copper Leaching Proceedings of SME annual meeting Denver Colo. 91-192 Feb. 25-28, 1991, 12 pp

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