


January 1978

1978-87 Publications of the UWRL

Utah Water Research Laboratory

Follow this and additional works at: http://digitalcommons.usu.edu/water_rep

 Part of the [Civil and Environmental Engineering Commons](#), and the [Water Resource Management Commons](#)

Recommended Citation

Utah Water Research Laboratory, "1978-87 Publications of the UWRL" (1978). *Reports*. Paper 253.
http://digitalcommons.usu.edu/water_rep/253

This Report is brought to you for free and open access by the Utah Water Research Laboratory at DigitalCommons@USU. It has been accepted for inclusion in Reports by an authorized administrator of DigitalCommons@USU. For more information, please contact dylan.burns@usu.edu.



1978-87 Publications



9198215

College of Engineering
Utah State University
Logan, Utah 84322
March 1987

**UTAH WATER RESEARCH
LABORATORY PUBLICATIONS**

This brochure is a listing of publications of the Utah Water Research Laboratory, College of Engineering, at Utah State University, Logan, Utah, for 1978 through 1985.

Six categories of publications are included: Atmospheric Water Resources Series, General Series, Hydraulics and Hydrology Series, Water Resources Planning Series, Water Quality Series, and Other Publications.

Publications out of print may be obtained on a short time loan basis from the UWRL Library.

When inquiring about or ordering Utah Water Research Laboratory publications please address:

Utah Water Research Laboratory
Publications
Utah State University
Logan, UT 84322-8200

ATMOSPHERIC WATER RESOURCES SERIES

- UWRL/A-77/01 \$2.00 "Evaluation of Southern and Central Utah Cloud Seeding Program." G. E. Hill.
- UWRL/A-77/02 \$2.00 "Seedability of Winter Orographic Storms in Utah." G. E. Hill.
- UWRL/A-78/01 \$2.00 "Research on Increased Precipitation by Cloud Seeding: Development Phase." G. E. Hill.
- UWRL/A-78/02 \$2.00 "The Great Basin Climate Study for Range Fire Management." K. G. Hubbard and J. E. Fletcher.
- UWRL/A-79/01 * "Research in Increased Winter Orographic Precipitation by Cloud Seeding (FY 1979), Development of Cloud Seedability Criteria." G. E. Hill.
- UWRL/A-79/02 \$5.00 "Tabulation and Application of Pan Evaporation Data for Utah through 1976." K. G. Hubbard and E. A. Richardson.
- UWRL/A-80/01 * "Research on Increased Winter Orographic Precipitation by Cloud Seeding (FY 1980), Development of Liquid Water Instrumentation and Application to Cloud Seeding Technology." G. E. Hill.
- UWRL/A-80/02 * "Preliminary Study of the Northern Utah Suppression Project." G. E. Hill.
- UWRL/A-82/01 * "Statistical Evaluation of the Winter Cloud Seeding in Utah (FY 1974-1978)." G. E. Hill.
- UWRL/A-82/02 * "Evaluation of the Utah Operational Weather Modification Program." G. E. Hill.

*Publication is out of print, but is available on loan from the UWRL Library.

UWRL/A-85/01 "Remote Control of
\$3.00 Hydrometeorological
Devices." G. E. Hill,
W. Lofthouse, H. Lein-
eweber, et al.

GENERAL SERIES

UWRL/G-78/01 "Proceedings of the
\$10.00 Utah Water Pollution
Control Association
1978 Annual Meeting."
D. B. Porcella and D.
H. Falkenborg.

UWRL/G-78/02 "New Directions in
\$5.00 Western Water Law."
Sixth Annual Confer-
ence of the Utah Sec-
tion of AWRA.

UWRL/G-79/01 "Index Construction
\$2.00 for Use in High Moun-
tain Watershed Manage-
ment." L. D. James,
editor.

UWRL/G-79/02 "A Technical Focus for
\$3.00 Documenting the Effec-
tiveness of the Coop-
erative OWRT-Institute
Water Resources Re-
search Program. L. D.
James.

UWRL/G-79/03 "Annual Report." Utah
* Water Research Labora-
tory, Center for Water
Resources Research,
and Agricultural and
Irrigation Engineer-
ing.

UWRL/G-79/04 "Summary Annual Report
* 1979." Utah Water Re-
search Laboratory,
Center for Water Re-
sources Research, and
Agricultural and Irri-
gation Engineering.

UWRL/G-80/01 "Management of Rural
\$1.00 Domestic Water Systems
in Utah." T. C.
Hughes.

UWRL/G-80/02 "Annual Report 1980."
\$2.00 Utah Water Research
Laboratory, Center for
Water Resources Re-
search, and Agricul-
tural Irrigation Engr.

UWRL/G-80/03 "Summary Annual Report
No Charge 1980." Utah Water Re-
search Laboratory,
Center for Water Re-
sources Research, and
Agricultural and Irri-
gation Engineering.

UWRL/G-81/01 "Water Resources Re-
\$2.00 search Goals and Ob-
jectives for Utah FY
1982." L. D. James
and J. J. Messer.

UWRL/G-81/02 "Annual Report 1981."
* Utah Water Research
Laboratory, Center for
Water Resources Re-
search, and Agricul-
tural and Irrigation
Engineering.

UWRL/G-81/03 "Summary Annual Report
No Charge 1981." Utah Water
Research Laboratory,
Center for Water Re-
sources Research, and
Agricultural and Irri-
gation Engineering.

UWRL/G-82/01 "Annual Report 1982."
* Utah Water Research
Laboratory, Center for
Water Resources Re-
search, and Agricul-
tural and Irrigation
Engineering.

UWRL/G-82/02 "Summary Annual Report
No Charge 1982." Utah Water
Research Laboratory,
Center for Water Re-
sources Research, and
Agricultural and Irri-
gation Engineering.

UWRL/G-83/01 "Annual Report 1983."
No Charge Utah Water Research
Laboratory, Center for
Water Resources Re-
search, and Agricul-
tural and Irrigation
Engineering.

*Publication is out of print, but is
available on loan from the UWRL Library.

UWRL/G-83/02 No Charge	"Summary Annual Report 1983." Utah Water Research Laboratory, Center for Water Resources Research, and Agricultural and Irrigation Engineering.	UWRL/G-85/04 No Charge	"Annual Report 1985." Utah Water Research Laboratory, Center for Water Resources Research, and Agricultural and Irrigation Engineering, Cooperative Fisheries Research Unit.
UWRL/G-84/01 No Charge	"FY 83 Program Summary Report of Utah Center for Water Resources Research." L. D. James.	UWRL/G-85/05 No Charge	"Summary Annual Report." Utah Water Research Laboratory, Center for Water Resources Research, and Agricultural and Irrigation Engineering, Cooperative Fisheries Research Unit.
UWRL/G-84/02 No Charge	"Annual Report 1984." Utah Water Research Laboratory, Center for Water Resources Research, and Agricultural and Irrigation Engineering, Cooperative Fisheries Research Unit.		
UWRL/G-84/03 No Charge	"Summary Annual Report 1984." Utah Water Research Laboratory, Center for Water Resources Research, and Agricultural and Irrigation Engineering, Cooperative Fisheries Research Unit.		
UWRL/G-85/01 \$2.50 \$5.00/2 vol.	"Water Quality Insights. Vol. 1: Overview and Affirmative Position." (Debate Briefs) L. D. James, F. Daugs, M. J. Duncan, et al.	UWRL/H-78/01 *	"Engineering Properties and Slope Stability Settlement Analysis Related to Phosphate Mine Spoil Dumps in Southeastern Idaho." R. E. Riker, L. R. Anderson, R. W. Jeppson.
UWRL/G-85/02 \$2.50	"Water Quality Insights. Vol. 2: Position Papers, Negative Position, and Glossary." L. D. James, F. Daugs, M. J. Duncan, et al.	UWRL/H-78/02 *	"Manual of Erosion Control Principles and Practices During Highway Construction." C. G. Clyde, et al.
UWRL/G-85/03 \$30.00	"Delineation of Landslide, Flash Flood, and Debris Flow Hazards in Utah." D. S. Bowles, editor.	UWRL/H-78/03 \$2.00	"Hydraulic Characteristics of PVC Pipe in Sanitary Sewers." R. R. Bishop and R. W. Jeppson.
		UWRL/H-78/04 *	"Development of An Erosion Model and Its Application to Phosphate Mine Dumps In Southeastern Idaho." V. Prabhakar, R. W. Jeppson, L. R. Anderson.
		UWRL/H-79/01 *	"Hydrologic Impact of Grazing Systems on Infiltration and Runoff: Development of a Model." R. H. Hawkins and G. F. Gifford.

HYDRAULICS AND HYDROLOGY SERIES

*Publication is out of print, but is available on loan from the UWRL Library.

UWRL/H-80/01 *	"Use of Extreme Value Theory in Estimating Flood Peaks from Mixed Population." R. V. Canfield, D. R. Olsen, R. H. Hawkins, et al.	UWRL/H-82/02 \$3.00	"Guidelines for Minimizing Salinity Buildup in Groundwaters of Utah." E. P. Fisk and C. G. Clyde.
UWRL/H-80/02 *	"Design of a Cost Effective Solar Powered Water Pump." D. G. Chadwick.	UWRL/H-82/03 \$5.00	"Hydraulics and Numerical Solutions of Steady-State But Spatially Varied Debris Flow." A. A. DeLeon and R. W. Jeppson.
UWRL/H-80/03 \$5.00	"Influence of Unsaturated Hydraulic Properties on Infiltration from Circular Surface Areas." A. Nassehza-deh-Tabrizi and R. W. Jeppson.	UWRL/H-82/04 \$3.00	"Hydrologic Series Generation from the Spectral Density Function." R. V. Canfield.
UWRL/H-81/01 \$2.00	"Fielding Ditch Pipeline Computer Simulation Study." C. G. Clyde, J. P. Tullis, R. W. Jeppson.	UWRL/H-83/01 \$4.00	"A Preliminary Quantification of the Impacts of Aspen to Conifer Succession on Water Yield within the Colorado River Basin (A Process Aggravating the Salt Pollution Problem)." G. F. Gifford, W. Humphries, R. A. Jaynes.
UWRL/H-81/02 \$6.00	"Water Quality in Pleasant Valley, Utah." C. G. Clyde, D. B. George, K. M. Lee, et al.	UWRL/H-83/02 \$4.50	"Fecal Coliform Release Studies and Development of a Preliminary Nonpoint Source Transport Model for Indicator Bacteria." E. P. Springer, G. F. Gifford, M. P. Windham, et al.
UWRL/H-81/03 \$2.00	"Cyclic Pressure Tests of Direct Tapped C-900 PVC Pipe." R. W. Jeppson.	UWRL/H-83/03 \$4.00	"Hydraulics of Solving Unsteady Debris Flow." R. W. Jeppson and S. A. Rodriguez.
UWRL/H-81/04 \$3.00	"A Survey and Evaluation of Shallow Groundwater Contamination Hazards in the State of Utah." E. P. Fisk and C. G. Clyde.	UWRL/H-84/01 \$5.00	"Management of Groundwater Recharge Areas in the Mouth of Weber Canyon." C. G. Clyde, C. J. Duffy, E. P. Fisk, et al.
UWRL/H-81/05 *	"The Potential for Groundwater Contamination Along Basin Margins in the Arid West: Alluvial Fans and Lake Features." C. G. Clyde, R. Q. Oaks, P. T. Kolesar, et al.	UWRL/H-84/02 \$3.00	"New Concepts for Preliminary Hydropower Design: the Powermax Slope, Binary Turbine Sizing, and Static Regain." F. W. Haws and E. K. Israelsen.
UWRL/H-82/01 \$5.00	"Further Studies of a Cache Valley Residence Having a Groundwater Heat Pump." M. L. Henrie.		

*Publication is out of print, but is available on loan from the UWRL Library.

UWRL/H-84/03
\$12.00 "Erosion and Sedimentation in Utah: A Guide for Control." C. E. Israelsen, J. E. Fletcher, F. W. Haws, E. K. Israelsen.

UWRL/H-84/04
\$5.00 "A Groundwater Model of Cache Valley, Utah." C. G. Clyde, R. W. Jeppson, Win-Kai Liu.

UWRL/H-85/01
\$5.00 "Identification and Modeling the Impact of Marine Shale Bedrock on Groundwater and Stream Salinity: Upper Colorado River Basin." C. J. Duffy, J. J. Jurinak, S. Sangani, A. Azimi.

WATER RESOURCES PLANNING SERIES

UWRL/P-78/01
\$5.00 "Cost Minimization for Coal Conversion Pollution Control: A Mixed Integer Programming Model." M. F. Torpy, A. B. Bishop, R. Narayanan.

UWRL/P-78/02
\$7.00 "Water Conservation Information Dissemination During the 1977 Drought Emergency." L. D. James and W. H. Andrews.

UWRL/P-78/03
* "Salinity Management Options for the Colorado River." J. C. Andersen and A. P. Kleinman.

UWRL/P-78/04
\$2.00 "Mathematical Modeling of a Sociological and Hydrologic Decision System." W. H. Andrews, J. P. Riley, M. B. Masteller.

UWRL/P-78/05
\$6.00 "The Impact of Energy Resource Development on Water Resources Allocations." J. E. Keith, K. S. Turna, S. Padunchai, et al.

UWRL/P-78/06
\$2.00 "Cost Allocation Alternatives for the Senegal River Development Program." J. P. Riley, J. C. Andersen, A. B. Bishop, et al.

UWRL/P-78/07
\$2.00 "Utah's 1977 Drought." T. C. Hughes, et al.

UWRL/P-79/01
* "Integrating Water Resources and Land Use Planning." J. Mulder, K. R. Kimball, D. T. Larson, et al.

UWRL/P-79/02
* "Historical and Projected Municipal and Industrial Water Usage in Utah 1960-2020." R. D. Hansen, H. H. Fullerton, A. B. Bishop, et al.

UWRL/P-79/03
* "Estimation of Water Surface Elevation Probabilities and Associated Damages for the Great Salt Lake." L. D. James, D. S. Bowles, W. R. James, et al.

UWRL/P-79/04
\$2.00 "Domestic Water Demand in Utah." T. C. Hughes and R. Gross.

UWRL/P-79/05
\$6.00 "Levels of Analysis in Comprehensive River Basin Planning." D. T. Larson, L. D. James, K. R. Kimball.

UWRL/P-79/06
* "Impact of Water and Soils Having High Source-Sink Potentials on Water and Salinity Management Under Irrigation in the Upper Colorado River Basin." L. S. Willardson, R. J. Hanks, J. J. Jurinak.

UWRL/P-79/07
\$5.00 "An Economic Evaluation of the Salinity Impacts from Energy Development: The Case of the Upper Colorado River Basin." R. Narayanan, S. Padunchai, A. B. Bishop.

*Publication is out of print, but is available on loan from the UWRL Library.

UWRL/P-80/01 \$5.00	"Flood Damage Mitigation in Utah." L. D. James, D. T. Larson, D. H. Hoggan, et al.	UWRL/P-81/02 \$3.00	"Economic Impacts of Irrigation Technologies in the Sevier River Basin." T. R. Frickel and R. Narayanan.
UWRL/P-80/02 \$4.00	"Feasibility Study of Establishing a Water Rights Banking/Brokerage Service in Utah." J. M. Bagley, K. R. Kimball, L. Kapaloski.	UWRL/P-81/03 \$5.00	"Model Choice: An Operational Comparison of Stochastic Streamflow Models for Droughts." W. R. James, D. S. Bowles, N. T. Kottegoda.
UWRL/P-80/03 *	"Development of Procedures to Evaluate Salinity Management Strategies in Irrigation Return Flows." V. A. Narasimhan, A. L. Huber, J. P. Riley, et al.	UWRL/P-81/04 \$3.00	"Energy Siting in Utah: A Programming Model." D. L. Snyder, J. E. Keith, T. F. Glover, et al.
UWRL/P-80/04 \$6.00	"Use of Saline Water in Energy Development." C. E. Israelson, V. D. Adams, J. C. Batty, et al.	UWRL/P-81/05 \$2.50	"Design Considerations in the Use of Glauber Salt for Energy Storage." D. G. Chadwick and K. H. Sherwood.
UWRL/P-80/05 *	"Management of the Hydrologic System in Areas Subject to Coal Mining Activities." R. H. Hotchkiss, E. K. Israelson, J. P. Riley.	UWRL/P-81/06 \$5.00	"A Methodology for Public-Planner Interaction in Multiobjective Project Planning and Evaluation." M. McKee, T. W. Morgan, R. Narayanan, et al.
UWRL/P-80/06 \$5.00	"Water Demand at Recreation Developments." S. Lam and T. C. Hughes.	UWRL/P-81/07 \$3.00	"Hydrosalinity Impacts of Conservation Measures in the Sevier River Basin." E. K. Israelson.
UWRL/P-80/07 \$4.00	"A Preliminary Study on Expanding and Financing State Water Development." D. H. Hoggan, K. R. Kimball, J. M. Bagley.	UWRL/P-82/01 \$3.00	"Potential of Water and Salt Yields from Surface Runoff on Public Lands in the Price River Basin." J. P. Riley, E. K. Israelson, W. N. McNeill, et al.
UWRL/P-80/08 *	"Vulnerability of Water Supply Systems to Droughts." D. S. Bowles, T. C. Hughes, W. R. James, et al.	UWRL/P-82/02 \$8.50	"Salt Uptake in Natural Channels Traversing Mancos Shales in Price River Basin, Utah." D. G. Chadwick, Jr., L. S. Dixon, L. D. James, et al.
UWRL/P-81/01 \$2.00	"Update on Estimation of Water Surface Elevation Probabilities for the Great Salt Lake." L. D. James, D. S. Bowles, W. R. James, et al.		

*Publication is out of print, but is available on loan from the UWRL Library.

UWRL/P-82/03 \$3.00	"Organizational Alternatives to Achieve Greater Uniformity in Statewide Water Rights Management in Utah." D. H. Hoggan, K. R. Kimball, J. M. Bagley, et al.	UWRL/P-83/01 \$6.00	"Some Lake Level Control Alternatives for the Great Salt Lake." M. E. Allen, R. K. Christensen, J. P. Riley.
UWRL/P-82/04 \$37.50/set	"Impacts of Western Coal, Oil Shale and Tar Sands Development on Aquatic Environmental Quality: A Technical Information Matrix." Vol. 1: Introduction and Instructions. J. J. Messer, F. J. Post, Editors, \$5.00. Vol. 2: Coal. K. Gerner, \$25.00. Vol. 3: Oil Shale. J. J. Messer and C. I. Liff; Tar Sands, K. Gerner, \$10.00.	UWRL/P-83/02 *	"Drought Management Concepts: Lessons of the 1976-1977 U. S. Drought." R. Narayanan, T. C. Hughes, M. McKee, et al.
UWRL/P-82/05 \$8.00	"Salt Loading from Efflorescence and Suspended Sediments in the Price River Basin." D. S. Bowles, H. Nezafati, B. Rao K., et al.	UWRL/P-83/03 \$7.50	"Index Construction for Multiple Objective Analysis of Land and Water Use in a High Mountain Watershed." L. D. James, D. T. Larson, Mac McKee, et al.
UWRL/P-82/06 \$3.00	"A Chance-Constrained Programming Model of Water Allocations in Utah." J. E. Keith, G. A. Martinez Gerstle, R. Narayanan, et al.	UWRL/P-83/04 \$3.00	"An Economic Evaluation of Benefits and Costs of Maintaining Instream Flows." R. Narayanan, D. T. Larson, A. B. Bishop, et al.
UWRL/P-82/07 \$4.00	"An Evaluation of Water Conservation Techniques in the Upper Colorado River Basin." R. Narayanan and D. R. Franklin.	UWRL/P-83/05 \$5.50	"Adapting Water Services to Urban Growth: A Case Study of Salt Lake County." D. T. Larson, K. R. Kimball, C. W. Hiibner, et al.
UWRL/P-82/08 \$4.00	"A Multivariate Water Quality Index for Use in Management of a Wildland Watershed." R. Mahmood, J. J. Messer, et al.	UWRL/P-83/06 *	"Adapting Appropriation Water Law to Accommodate Equitable Consideration of Instream Flow Uses." J. M. Bagley, D. T. Larson, L. Kapaloski.
UWRL/P-82/09 \$4.00	"Energy Impacts of Water Based Recreation." J. C. Batty, D. A. Bell, E. B. Godfrey, et al.	UWRL/P-83/07 \$4.00	"Conjunctive Water Use Planning with Water Quality Constraints in Tooele Valley, Utah." B. Rao K., C. G. Clyde, R. Narayanan.
		UWRL/P-85/01 \$5.00	"A Methodology for Estimating Instream Flow Values for Recreation." P. Amirfathi, R. Narayanan, A. B. Bishop, et al.

*Publication is out of print, but is available on loan from the UWRL Library.

UWRL/P-85/02
** "Problems of Small
Privately Operated
Water Companies in
Utah." J. M. Bagley
and F. W. Haws.

UWRL/P-85/03
** "Optimal Configuration
of Regional Water
Supply Systems."
Mohamed L. Al-Eryani
and T. C. Hughes.

WATER QUALITY SERIES

UWRL/Q-78/01
\$4.00 "Naturally Occurring
Organic Compounds in
Eutrophic Hyrum Reser-
voir, Utah." R. R.
Renk, V. D. Adams, D.
B. Porcella.

UWRL/Q-78/02
\$2.00 "Evaluation and Com-
parison of Overland
Flow and Slow Rate
Systems to Upgrade
Secondary Wastewater
Lagoon Effluent." M.
C. Kemp, D. S. Filip,
D. B. George.

UWRL/Q-79/01
* "Stochastic Analysis
for Water Quality."
R. F. Malone, D. S.
Bowles, W. J. Grenney,
et al.

UWRL/Q-79/02
\$2.00 "Studies on Viruses in
Water." R. S. Spend-
love, et al.

UWRL/Q-79/03
\$5.00 "Modeling the Perfor-
mance of the Intermit-
tent Sand Filter." P.
A. Cowan and E. J.
Middlebrooks.

UWRL/Q-79/04
\$5.00 "Evaluation of In-line
Direct Filtration for
Virus Removal." B. S.
Malek, D. B. George,
D. S. Filip, et al.

UWRL/Q-79/05
\$4.00 "Effects of Oil Shale
Leachate on Phyto-
plankton Productivi-
ty." M. L. Cleave, V.
D. Adams, D. B. Por-
cella.

UWRL/Q-79/06
\$5.00 "Random Differential
Equations in Water
Quality Modeling." B.
A. Finney, D. S. Bowl-
es, M. P. Windham.

UWRL/Q-80/01
\$2.00 "Evaluation of Muta-
genicity Testing of
Extracts from Proces-
sed Oil Shale." J. G.
Dickson and V. D.
Adams.

UWRL/Q-80/02
\$5.00 "Evaluation of Live-
stock Runoff as a
Source of Water Pollu-
tion in Northern
Utah." S. T. Wieneke,
D. B. George, D. S.
Filip, et al.

UWRL/Q-81/01
\$3.00 "Evaluation of Waste-
water Filtration." B.
L. Bench and E. J.
Middlebrooks.

UWRL/Q-81/02
\$3.00 "Calcium Carbonate
Precipitation as In-
fluenced by Stream
Primary Production."
G. L. Rupp and V. D.
Adams.

UWRL/Q-81/03
\$4.00 "Natural Salinity
Removal Processes in
Reservoirs." J. J.
Messer, E. K. Israel-
sen, V. D. Adams.

UWRL/Q-81/04
\$4.00 "The Kinetics of Ro-
tating Biological Con-
tractors Treating
Domestic Wastewater."
A. Pano, E. J. Middle-
brooks, J. H. Rey-
nolds.

UWRL/Q-81/05
\$3.00 "The Occurrence of
Trihalomethane Com-
pounds in Salt Lake
City and Ogden, Utah,
Drinking Water Sup-
plies." T. Peters, V.
D. Adams, D. B.
George.

UWRL/Q-82/01
\$4.00 "Predicted Limnology
of the Proposed Ridges
Basin Reservoir." L.
A. Baker and V. D.
Adams.

*Publication is out of print, but is
available on loan from the UWRL Library.

UWRL/Q-82/02 \$5.00	"Evaluation of Microcosms for Determining the Fate and Effect of Benz(a)anthracene in Aquatic Systems." J. G. Dickson, V. D. Adams, D. B. George.	UWRL/Q-83/04 \$6.00	"An Experimental Investigation of the Effects of Crude Oil on Two Freshwater Lake Ecosystems." M. D. Werner, V. D. Adams, V. A. Lamarra.
UWRL/Q-82/03 \$5.00	"An Evaluation of the Performance of a Modified Overland Flow Wastewater Treatment System: Sloped Rock-grass Filtration." D. Wightman, D. B. George, J. H. Zirschky, et al.	UWRL/Q-83/05 \$5.00	"Alteration of Availability of Heavy Metals to Aquatic Microflora by Complexation with Organics Associated with Oil Shale Development." B. S. Mok and J. J. Messer.
UWRL/Q-82/04 \$4.00	"The Water Requirements and Pollutant Potential in the Gasification of Carbonaceous Shales." J. A. Cissell, V. D. Adams, J. Fletcher, et al.	UWRL/Q-83/06 \$6.00	"Evaluation of the Potential for Groundwater Transport of Mutagenic Compounds Released by Spent Oil Shale." R. E. Hinchee, V. D. Adams, J. G. Curtis, et al.
UWRL/Q-82/05 \$5.00	"Reverse Osmosis in the Treatment of Drinking Water." R. R. Dupont, T. N. Eisenberg, E. J. Middlebrooks.	UWRL/Q-83/07 \$6.50	"Polycyclic Aromatic Hydrocarbons--Are They A Problem in Processed Oil Shales?" D. L. Maase and V. D. Adams.
UWRL/Q-82/06 \$3.00	"Potential for Acid Snowmelt in the Wasatch Mountains." J. J. Messer, L. Slezak, C. I. Liff.	UWRL/Q-83/08 \$6.00	"Effects of Cadmium on Streams and Irrigated Agriculture in the Presence and Absence of Oil Shale Leachate." D. A. Selby, J. M. Ihnat, F. J. Post, et al.
UWRL/Q-83/01 \$5.00	"Eutrophication Assessment of Mt. Dell Reservoir." R. A. Hanson, V. D. Adams, V. A. Lamarra, et al.	UWRL/Q-83/09 \$6.50	"The Evaluation of Metals and Other Substances Released into Coal Mine Accrual Waters on the Wasatch Plateau Coal Field, Utah." A. J. Seierstad, V. D. Adams, V. A. Lamarra, et al.
UWRL/Q-83/02 \$5.00	"Reconnaissance of Sediment-Phosphorus Relationships in Upper Flaming Gorge Reservoir." J. J. Messer, J. M. Ihnat, B. Mok, et al.	UWRL/Q-84/01 \$4.00	"Sediment-Phosphorus Relationships in Deer Creek Reservoir." J. J. Messer, T. B. Hardy, J. M. Ihnat.
UWRL/Q-83/03 \$2.50	"Reconnaissance of Sediment-Phosphorus Relationships in Some Utah Reservoirs." J. J. Messer and J. M. Ihnat.		

*Publication is out of print, but is available on loan from the UWRL Library.

UWRL/Q-84/02
\$5.00 "Direct Filtration Versus Conventional Water Treatment in the Intermountain Region." S. K. Burns, V. D. Adams, S. B. Maloney.

UWRL/Q-84/03
\$6.00 "Trihalomethane Compounds and Their Precursors in Salt Lake County: Evaluation of Trihalomethane Source and Production." K. R. Cook, V. D. Adams, D. B. George, et al.

UWRL/Q-85/01
\$5.00 "A Study of Trihalomethane Precursors in Deer Creek Reservoir." M. J. White and V. D. Adams.

OTHER PUBLICATIONS

AQUARIUS
\$1.50 "The Great Salt Lake." Special Issue No. 1. May 1977.

AQUARIUS
\$1.50 "Utah Water Laws, Politics, Institutions." Special Issue No. 2. June 1978.

AQUARIUS
\$1.50 "Nonpoint Source Pollution, Some Causes, Effects, and Remedies." Special Issue No. 3. June 1979.

AQUARIUS
\$1.50 "Weather Modification and Cloud Seeding." Special Issue No. 4. June 1980.

AQUARIUS
\$1.50 "Common Hazards and Other Things--A Glossary of Terms." Special Issue No. 5. June 1981.

AQUARIUS
No Charge Newsletter. Published six times a year.

Brochure #1
* "Groundwater Heat Pump, An Efficient Way to Heat and Cool Your Home." UWRL, December 1979.

Brochure #2
No Charge "Groundwater Heat Pump Equipment Selection Procedures for Architects, Designers, and Contractors." UWRL. March 1980.

Brochure #3
No Charge "Groundwater Heat Pump: The Interaction of Flow Rate, Aquifer Temperature Changes, and Well Spacing." UWRL. June 1981.

EPA-600/
2-78-033
\$2.00
Handling "Separation of Algal Cells from Wastewater Lagoon Effluents. Vol. I: Intermittent Sand Filtration to Upgrade Waste Stabilization Lagoon Effluent." D. S. Filip, J. H. Reynolds, et al. June 1978.

EPA-600/
2-78-097
\$2.00
Handling "Separation of Algal Cells from Wastewater Lagoon Effluents. Vol. III: Soil Mantle Treatment of Wastewater Stabilization Pond Effluent-Sprinkler Irrigation." J. H. Reynolds, D. S. Filip, et al. July 1979.

EPA-600/
2-79-018
\$2.00
Handling "Waste Stabilization Lagoon Microorganism Removal Efficiency and Effluent Disinfection with Chlorine." D. S. Bowles, J. H. Reynolds, et al. July 1979.

EPA-600/
2-79-171a
\$2.00
Handling "Long-term Effects of Land Application of Domestic Wastewater: Tooele, Utah, Slow Rate Site. Vol. 1: Field Investigation." J. H. Reynolds, L. R. Anderson, et al. August 1979.

EPA-600/ 2-79-171b \$2.00 Handling	"Long-term Effects of Land Application of Domestic Wastewater: Tooele, Utah, Slow Rate Site. Vol. 2: Engineering Soil Properties." L. R. Anderson, J. H. Reynolds, et al. August 1979.	Report \$2.00 Handling	"Woodruff Narrows: Low Head Hydroelectric Power Plant Feasibility Determination." State of Utah, Div. of Water Resources, Int'l Engineering Co., Inc., UWRL. March 1979.
EPA-600/ 9-79-011 \$2.00 Handling	"Performance and Upgrading of Wastewater Stabilization Ponds: Proceedings of a Conference." E. J. Middlebrooks, D. H. Falkenberg, et al. May 1979.	Report \$2.00 Handling	"A Framework for Risk Analysis of Earth Dams." J. C. Howell, L. R. Anderson, et al. December 1980.
JRB Report \$25.00	"Review of In Place Treatment Techniques for Contaminated Surface Soils. Vol. 2: Background Information for In Situ Treatment." R. C. Sims, D. L. Sorensen, et al. June 1984.	Report \$2.00 Handling	"Model of Drawdown in Well Fields Influenced by Boundaries: Technical Description and User's Manual." N. T. Shareef and D. S. Bowles. Dec. 1980.
NCHRP 221 Manual \$14.40	"Erosion Control During Highway Construction, Manual on Principles and Practices." National Cooperative Highway Research Program Report 221. C. E. Israelsen, C. G. Clyde, et al. April 1980.	RR-62 \$2.00 Handling	"Salt Release from Suspended Sediments: A Simulation Model." S. R. Peterson, J. J. Jurinak, et al. December 1980.
Proceedings \$2.00 Handling	"Proceedings of the Utah Water Pollution Control Association, 1979 Annual Meeting." April 1979.	TP-75 \$2.00 Handling	"Consumptive Use and Water Requirements for Utah." A. L. Huber, F. W. Haws, et al. March 1982.
Report \$2.00 Handling	"Denitrification in Lake Okeechobee, Florida." J. J. Messer, et al. 1979.		
Report \$3.00	"A Mathematical Hydrodynamic Circulation Model of Great Salt Lake for Resource Management." G. Z. Watters and C. T. Kincaid. June 1979.		

OFFER LIMITED TO EXISTING SUPPLY

Atmospheric Water Resources Series		Water Resources Planning Series cont.	
_____	UWRL/A-77/01 \$ 2.00	_____	UWRL/P-78/05 \$ 6.00
_____	UWRL/A-77/02 \$ 2.00	_____	UWRL/P-78/06 \$ 2.00
_____	UWRL/A-78/01 \$ 2.00	_____	UWRL/P-78/07 \$ 2.00
_____	UWRL/A-78/02 \$ 2.00	_____	UWRL/P-79/04 \$ 2.00
_____	UWRL/A-79/02 \$ 5.00	_____	UWRL/P-79/05 \$ 6.00
_____	UWRL/A-85/01 \$ 3.00	_____	UWRL/P-79/07 \$ 5.00
General Series		_____	UWRL/P-80/01 \$ 5.00
_____	UWRL/G-78/01 \$ 10.00	_____	UWRL/P-80/02 \$ 4.00
_____	UWRL/G-78/02 \$ 5.00	_____	UWRL/P-80/04 \$ 6.00
_____	UWRL/G-79/01 \$ 2.00	_____	UWRL/P-80/06 \$ 5.00
_____	UWRL/G-79/02 \$ 3.00	_____	UWRL/P-80/07 \$ 4.00
_____	UWRL/G-80/01 \$ 1.00	_____	UWRL/P-81/01 \$ 2.00
_____	UWRL/G-80/02 \$ 2.00	_____	UWRL/P-81/02 \$ 3.00
_____	UWRL/G-80/03 NC	_____	UWRL/P-81/03 \$ 5.00
_____	UWRL/G-81/01 \$ 2.00	_____	UWRL/P-81/04 \$ 3.00
_____	UWRL/G-81/03 NC	_____	UWRL/P-81/05 \$ 2.50
_____	UWRL/G-82/02 NC	_____	UWRL/P-81/06 \$ 5.00
_____	UWRL/G-83/01 NC	_____	UWRL/P-81/07 \$ 3.00
_____	UWRL/G-83/02 NC	_____	UWRL/P-82/01 \$ 3.00
_____	UWRL/G-84/01 NC	_____	UWRL/P-82/02 \$ 8.50
_____	UWRL/G-84/02 NC	_____	UWRL/P-82/03 \$ 3.00
_____	UWRL/G-84/03 NC	_____	UWRL/P-82/04 \$ 37.50
_____	UWRL/G-85/01 \$ 2.50	_____	UWRL/P-82/05 \$ 8.00
_____	UWRL/G-85/02 \$ 2.50	_____	UWRL/P-82/06 \$ 3.00
_____	UWRL/G-85/03 \$ 30.00	_____	UWRL/P-82/07 \$ 4.00
_____	UWRL/G-85/04 NC	_____	UWRL/P-82/08 \$ 4.00
_____	UWRL/G-85/05 NC	_____	UWRL/P-82/09 \$ 4.00
Hydraulics and Hydrology Series		_____	UWRL/P-83/01 \$ 6.00
_____	UWRL/H-78/03 \$ 2.00	_____	UWRL/P-83/03 \$ 7.50
_____	UWRL/H-80/03 \$ 5.00	_____	UWRL/P-83/04 \$ 3.00
_____	UWRL/H-81/01 \$ 2.00	_____	UWRL/P-83/05 \$ 5.50
_____	UWRL/H-81/02 \$ 6.00	_____	UWRL/P-83/07 \$ 4.00
_____	UWRL/H-81/03 \$ 2.00	_____	UWRL/P-85/01 \$ 5.00
_____	UWRL/H-81/04 \$ 3.00	_____	UWRL/P-85/02 **
_____	UWRL/H-81/05 \$ 5.00	_____	UWRL/P-85/03 **
_____	UWRL/H-82/01 \$ 5.00	Water Quality Series	
_____	UWRL/H-82/02 \$ 3.00	_____	UWRL/Q-78/01 \$ 4.00
_____	UWRL/H-82/03 \$ 5.00	_____	UWRL/Q-78/02 \$ 2.00
_____	UWRL/H-82/04 \$ 3.00	_____	UWRL/Q-79/02 \$ 2.00
_____	UWRL/H-83/01 \$ 4.00	_____	UWRL/Q-79/03 \$ 5.00
_____	UWRL/H-83/02 \$ 4.50	_____	UWRL/Q-79/04 \$ 5.00
_____	UWRL/H-83/03 \$ 4.00	_____	UWRL/Q-79/05 \$ 4.00
_____	UWRL/H-84/01 \$ 5.00	_____	UWRL/Q-79/06 \$ 5.00
_____	UWRL/H-84/02 \$ 3.00	_____	UWRL/Q-80/01 \$ 2.00
_____	UWRL/H-84/03 \$ 12.00	_____	UWRL/Q-80/02 \$ 5.00
_____	UWRL/H-84/04 \$ 5.00	_____	UWRL/Q-81/01 \$ 3.00
_____	UWRL/H-85/01 \$ 5.00	_____	UWRL/Q-81/02 \$ 3.00
Water Resources Planning Series		_____	UWRL/Q-81/03 \$ 4.00
_____	UWRL/P-78/01 \$ 5.00	_____	UWRL/Q-81/04 \$ 4.00
_____	UWRL/P-78/02 \$ 7.00	_____	UWRL/Q-81/05 \$ 3.00
_____	UWRL/P-78/04 \$ 2.00	_____	UWRL/Q-82/01 \$ 4.00
		_____	UWRL/Q-82/02 \$ 5.00
		_____	UWRL/Q-82/03 \$ 6.50
		_____	UWRL/Q-82/04 \$ 4.00
		_____	UWRL/Q-82/05 \$ 5.00

Water Quality Series cont.

_____	UWRL/Q-82/06	\$ 3.00	_____	UWRL/Q-83/07	\$ 6.50
_____	UWRL/Q-83/01	\$ 5.00	_____	UWRL/Q-83/08	\$ 6.00
_____	UWRL/Q-83/02	\$ 5.00	_____	UWRL/Q-83/09	\$ 6.50
_____	UWRL/Q-83/03	\$ 2.50	_____	UWRL/Q-84/01	\$ 4.00
_____	UWRL/Q-83/04	\$ 6.00	_____	UWRL/Q-84/02	\$ 5.00
_____	UWRL/Q-83/05	\$ 5.00	_____	UWRL/Q-84/03	\$ 6.00
_____	UWRL/Q-83/06	\$ 6.00	_____	UWRL/Q-85/01	\$ 5.00

Other Publications

_____	Aquarius No. 1	\$ 1.50
_____	Aquarius No. 2	\$ 1.50
_____	Aquarius No. 3	\$ 1.50
_____	Aquarius No. 4	\$ 1.50
_____	Aquarius No. 5	\$ 1.50
_____	Aquarius Newsletter	NC
_____	Heat Pump Brochure #2	NC
_____	Heat Pump Brochure #3	NC
_____	EPA-600/2-78-033	\$ 2.00
_____	EPA-600/2-79-018	\$ 2.00
_____	EPA-600/2-79-171a	\$ 2.00
_____	EPA-600/2-79-171b	\$ 2.00
_____	EPA-600/2-79-011	\$ 2.00
_____	JRB Report	\$ 25.00
_____	NCHRP 221 Manual	\$ 14.40
_____	Proceedings	\$ 2.00
_____	Denitrification	\$ 2.00
_____	Mathematical	\$ 2.00
_____	Woodruff Narrows	\$ 2.00
_____	Framework	\$ 2.00
_____	Model of Drawdown	\$ 2.00
_____	RR-62	\$ 2.00
_____	TP-75	\$ 2.00

** Price unknown at time of publication.

SEND ORDERS TO:

Utah Water Research Laboratory
 PUBLICATIONS
 Utah State University
 Logan, UT 84322-8200

Total Publications Ordered _____

Total Payment Enclosed _____

Your Name _____

Address _____

PLEASE MAKE CHECKS PAYABLE TO:
 Utah Water Research Laboratory