pesticide loading facilities to evaluate the effectiveness of the facility to protect the surrounding soils and groundwater from contamination; monitoring to identify the soil and geologic conditions under which pesticide contamination is likely to occur.

Wellhead Protection/Source Water Assessments – Evaluate methods for delineation of wellhead protection (WHP) areas in karst and confined settings. Evaluate planning and management strategies to protect groundwater in WHP areas. Investigators should be familiar with the state WHP and Source Water Assessment Program Plans.

Landfill Regulation – Evaluate current or innovative landfill design, operation or monitoring criteria in relation to compliance with groundwater quality standards. Investigate groundwater impacts of closed landfills.

Wastewater Treatment/Disposal – Monitor and evaluate the extent to which current and alternative on-site wastewater (private sewage) systems comply with state groundwater quality standards. Examples: evaluate new onsite wastewater treatment performance as a function of pretreatment, soil depth, texture and structure, and other factors; and monitoring of nitrogen and phosphorus near lakeshore communities. Also monitor different types of wastewater land application and land spreading practices. This would include the landspreading of wastewater byproduct solids, such as sludges and septage, as well as the land application of industrial, agricultural and municipal wastewaters.

Substances of Concern – Evaluate sources, fate, transport and risk to potable wells from substances (man-made and naturally occurring) detected in groundwater. This includes review and evaluation of DNR groundwater databases; identification and sampling of at-risk potable wells; and correlation of land-use and hydrogeology with risk to potable wells from the substances. Substances detected in groundwater requiring an evaluation include, but are not limited to, rhodamine (used as tracer), p-isopropylbenzene (cumene), strontium (non-radioactive), tert-butyl alcohol (TBA) and aluminum.

New Technology - Develop new laboratory or field technology (or new applications of existing technologies) for determining the characteristics of groundwater and geologic formations for management purposes, including downhole monitoring techniques and rapid site assessment.

Resource Definition – Conduct studies to better describe the geologic, hydrogeologic, and geochemical conditions that affect the groundwater quality and quantity in an area of the state. Example: evaluation of groundwater flow and/or contaminant transport in karst areas.

Table 3 - State of Wisconsin Groundwater Monitoring/Research Projects 1986-2002
(Sorted by principal investigator within initial funding year)

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
1986				
Hydrogeological Investigation of VOC Contaminated Private Wells Near Hudson, Wisconsin	Anklam	1986	DNR	31b
Treatment of Cheese Processing Wastewater by Ridge and Furrow Disposal - Nitrogen Transformations	Boyle	1986	DNR	23
A Case Study of Nitrogen Transformations at a Rapid Infiltration System Used for the Disposal of Food Processing Wastewater	Boyle, Hoopes	1986	DNR	17b
Volatile Organic Compounds in Small Community Wastewater Disposal Systems Using Soil Absorption	Boyle, Sonzogni	1986	DNR	5
Investigation of Hydrogeology and Groundwater Geochemistry in the Shallow Fractured Dolomite Aquifer in Door County, Wisconsin	Bradbury	1986-90	DNR	12
Hydrogeology of the Wisconsin River Valley in Marathon County, Wisconsin	Bradbury	1986	DNR	22
The Prediction of Nitrate Contamination Potential Using Known Hydrogeologic Properties	Cherkauer	1986-87	DNR	10
The Effect of Construction, Installation and Development Techniques on the performance of Monitoring Wells in Fine-Grained Glacial Tills	Cherkauer, Palmer	1986	DNR	16
Volatile Organic Compounds in Groundwater and Leachate at Wisconsin Landfills	Friedman	1985-87	DNR	4a
Barron County Nitrate Study	Hanson	1986-87	DNR	37
Field Investigation of Groundwater Impacts from Absorption Pond Systems Used for Wastewater Disposal	Hoopes	1985-86	DNR	17a
A Simple Stochastic Model Predicting Conservative Mass Transport Through the Unsaturated Zone into Groundwater	Hoopes	1986	DNR	1
The Use of Groundwater Models to Predict Groundwater Mounding Beneath Proposed Groundwater Gradient Control Systems for Sanitary Landfill Designs	Hoopes	1986	DNR	6
Evaluation Techniques for Groundwater Transport Models	Hoopes	1986	DNR	7
The Occurrence of Volatile Organic Compounds in Wastewater, Sludges and Groundwater at Selected Wastewater Treatment Plants in Wisconsin	Hunger	1985-90	DNR	18

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Groundwater Quality Monitoring - Long Term Effects of Intensive Farming and Sprinkler Irrigation on Groundwater Quality	Kammerer	1986	DNR	15
Fate of Aldicarb Residues in A Groundwater Basin near Plover, Wisconsin	Kraft	1986-87	DNR	3
Monitoring of Volatile Organic Compounds in Tomah, Wisconsin	Krohn	1986, 1989	DNR	31a
Fate and Mobility of Radium-226 in Municipal Wastewater Sludge Following Agricultural Landspreading	Portle	1986	DNR	19
Groundwater Monitoring for Pesticides	Postle	1986-97	DNR	2
Graphical and Statistical Methods to Assess the Effect of Landfills on Groundwater Quality	Potter	1986-87	DNR	14a
Groundwater Quality and Laundromat Wastewater: Summit Lake, Wisconsin	Saltes	1986-88	DNR	29
Filtration Preservation Study of Groundwater Samples	Sauer	1984	DNR	21a
West Bend Road Salt Use and Storage Study	Sucht	1986-91	DNR	8
Environmental Investigation of the City of Two Rivers Landfills, Manitowoc County, Wisconsin	Van Biersel	1986-87	DNR	24
Volatile Organic Compound Contamination of Private Water Supplies Adjacent to Abandoned Landfills in Marathon County	Wittkopf	1986-89	DNR	41
1987				
Plover Area Nitrate Study	Bailey	1987-88	DNR	48
Characterization of Groundwater Impacts at an Above Ground Petroleum Storage Terminal	Becker, Ham	1987	DNR	43
Research and Data Analysis of Groundwater Contamination from Municipal Rapid Infiltration Land Disposal Systems	Boyle, Hoopes, Potter	1987-88	DNR	56
Downward Movement of Water Below Barnyard Grass Filter Strips - Case Studies	Bubenzer, Converse	1987-89	DNR	39
1987 Volatile Organic Compound Testing Project in Rock County, Wisconsin	Holman	1987	DNR	40
Flambeau Paper Sulfite Lagoon Site Contamination Study	Lantz	1987	DNR	30

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Groundwater Survey of Bacterial Contamination Near Rapid Infiltration Wastewater Treatment System	Norenberg, Standridge	1987	DNR	21b
Investigation of Large Scale Subsurface Soil Absorption Systems	Peerenboom	1987	DNR	42
Hydrogeologic Investigation and Groundwater Quality Assessment (Havenswood Landfill)	Singh	1987	DNR	28
Nitrate Contamination in West-Central Wisconsin with Emphasis on Mill Run First Edition Subdivision	Tinker	1987-90	DNR	11
Lead Migration from Contaminated Sites - Door County, Wisconsin	Wiersma, Stieglitz	1987-88	DNR	13
1988				
A Ground Penetrating Radar Study of Water Table Elevation in a Portion of Wisconsin's Central Sand Plain	Anderson (Mary), Bentley	1988	DNR	50
VOC Contamination at Selected Wisconsin Landfills - Sampling Results and Policy Implications	Battista	1988-89	DNR	4b
Assessment of Geologic Controls on Groundwater Flow and Distribution in Precambrian Bedrock, Central Wisconsin, Using Remote Sensing and Geophysical	Brown, Davidson Jr.	1988	DNR	49
Digital Simulation of Solute Transport to Green Bay and Lake Michigan by Groundwater from Door County, Wisconsin	Cherkauer	1988-91	DNR	57
Degradation of Atrazine, Alachlor, Metolachlor in Soils and Aquifer Materials	Chesters	1988-90	DNR	52
Radionuclides in Drinking Water of North central Wisconsin	Dobbins, Fitzgerald	1988-89	DNR	54
Sealing Characteristics of Sodium Bentonite Slurries for Water Wells	Edil	1988	DNR	34
Mutagenic Effects of Selected Toxicants Found in Wisconsin's Groundwater	Meisner, Belluck	1988-89	DNR	38
Mineralogical and Geophysical Monitoring Naturally Occurring Radioactive Elements in Selected Wisconsin Aquifers	Morsky, Taylor	1988	DNR	51
Evaluation of the Effect of Stormwater Disposal on Groundwater	Nienke, Shaw	1988-89	DNR	53
Methods for Determining Compliance with Groundwater Quality Regulations at Waste Disposal Facilities	Potter	1988-89	DNR	14b

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Analytical Determination of Atrazine Alachlor and Their Selected Degradation Products in Contaminated Groundwater: Implication for Wisconsin Groundwater	Sonzogni	1988-89	DNR	47
Lead Contamination Study of Door County	Stoll	1988	DNR	44
Freedman Creek Hydrogeologic Baseline Report	Wilson	1988-89	DNR	45
1989				
Effect of Soil Type on Atrazine and Alachlor Movement Through Unsaturated Zone	Daniel	1989	DATCP/ DNR	62
Effects of Volatile Organic Compounds on Clay Landfill Liner Performance	Edil, Berthouex, Park, Sandstrom	1989	DNR	61
Grade A Dairy Farm Water Well Quality Survey	LeMasters, Doyle	1989	DNR	58
Groundwater Quality Investigation of Selected Townships in Jefferson County, Wisconsin	Madison	1989	DNR	60
Designs for Wellhead Protection in Central Wisconsin	Osborne, Sorenson, Knaak, Mechenich	1989	DNR	63
Pesticide Migration Study	Shaw	1989-90	DNR	55
Optimum Manure Application Rate - Corn Fertility Management and Nitrate Leaching to Groundwater in Sandy Soils	Shaw	1989-90	DNR	71
Subdivision Impacts on Groundwater Quality	Shaw, Ameson, VanRyswyk	1989	DNR	67
Demo of Low Input Strategies for Potato/Vegetable Production in Irrigated Sands	Shaw, Curwen, Kraft, Osborne	1989-90	DNR	59
1990				
A Field Evaluation of Drainage Ditches as Barriers to Contaminant Migration	Bahr, Chambers	1990-91	DNR	75
Incorporation of County Groundwater Inventory Data into the DNR Groundwater Information Network (GIN)	Bohn	1990	DNR	68
Atrazine Contamination of Groundwater in Dane County, Wisconsin	Bradbury, McGrath	1990-91	DATCP/ DNR	64
Sources and Extent of Atrazine Contamination of Groundwater at a Grade A Dairy Farm in Dane County, Wisconsin	Chesters, Levy	1990-91	DATCP/ UWS/DNR	65
Follow Up to the Grade A Dairy Farm Well Water Quality Survey	Cowell, LeMasters	1990	DATCP/ DNR	70

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Report on Bacteriological Water Quality Monitoring of Door County Variance and Special Casing Approval Wells	Hutchinson	1990-91	DNR	72
DNR and DATCP Rural Well Survey	LeMasters	1990	DATCP/ DNR	69
Variation in Hydraulic Conductivity in Sandy Glacial Till: Site Variation Versus Methodology	Mickelson, Bradbury, Rayne	1990-92	DNR/UWS	74
Analytical Determination of Pesticide Metabolites and Carrier Chemicals in Wisconsin Wells	Sonzogni, Eldan, Lawrence	1990	DNR	77
Nitrogen Isotope Monitoring at Unsewered Subdivisions	Tinker	1990	DNR	76
Volatile Organic Chemical Attenuation in Unsaturated Soil Above and Below an Onsite Wastewater Infiltration System	Tyler, Peterson, Sauer	1990-91	DNR/UWS	73
1991				
Integrated Decision Support for Wellhead Protection	Adams, Bensen	1991	UWS	
Role of Mobile Colloids in the Transport of Chemical Contaminants in Groundwaters	Armstrong, Shafer	1991-93	UWS	
On-site Nitrogen Removal Systems Research Demonstration Project: Phase I	Ayres & Assoc.	1991	DILHR	
Evaluation of Potential Phytotoxicity and Crop Residues when Using Sprayer Rinsate as a Portion of the Diluent in Pesticide Spray Mixtures	Binning	1991	DATCP	
To Expand Groundwater Sampling in the Lower Wisconsin River Valley	Cates, Madison, Postle	1991	DNR	78
Renovation of Pesticide Contaminated Rinse Waters	Chesters, Harkin	1991	UWS	
In-situ Removal of Fe, Mn, and Ra from Groundwater	Christensen, Cherkauer	1991	UWS	
Reactions of Chlorohydrocarbons on Clay Surfaces	Fripiat	1991	UWS	
The Biological Impact of Landfill Leachate on Nearby Surface Waters	Geis, Sonzogni, Standridge	1991	DNR	83
Chemical Transport Across a Sediment-Water Interface	Green	1991-92	UWS	
Adsorptive Behavior of Atrazine and Alachlor in Organic-Poor Sediments	Grundl	1991	UWS	
Effect of Complex Mixtures of Leachate on the Transport of Pollutants in Groundwater	Grundl, Cherkauer	1991-92	UWS	

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Bioremediation of Herbicide-Contaminated Soil and Water	Harris, Armstrong	1991	UWS	
Near-Source Transport of Contaminants in Heterogeneous Media	Hoopes	1991-92	UWS	
Design of a Small Scale Transportable Mixing/Loading System	Kammel	1991	DATCP	
Municipal Wastewater Project	Kopecky	1991	DNR	85
Dependence of Aldicarb Residue Degradation Rates on Groundwater Chemistry in the Wisconsin Central Sands	Kraft, Helmke	1991-92	DNR	84
Using Ground Penetrating Radar to Predict Preferential Solute Movement and Improve Contaminant Monitoring in Sandy Soils	Kung, Madison	1991	UWS	
Nitrate Movement Through the Unsaturated Zone of a Sandy Soil in the Lower Wisconsin River Valley	Lowery, Kussow	1991-93	UWS	
Effect of Soil Type, Selected BMPs, and Tillage on Atrazine and Alachlor Movement Through the Unsaturated Zone	Lowery, McSweeny	1991	DATCP/ DNR	66
A Study of the Response of Nitrate and Pesticide Concentrations to Agricultural BMPs in Sandy Corn Fields	Madison, Cates	1991-94	DNR	81
Facility Plan Amendment for Wastewater Collection for Green Lake Sanitary District, Green Lake, WI	McMahon & Assoc.	1991	DILHR	
Contamination Attenuation Indices for Sandy Soils: Tools for Information Transfer	McSweeney, Madison	1991	UWS	
Tracking Contaminant Pathways in Groundwater Using a Geologically Based Computer Code for Outwash	Mickelson, Anderson	1991-92	UWS	
A Tracer Technique for Measuring Regional Groundwater Velocities from a Single Borehole	Monkmeyer	1991	UWS	
The Economic Effects of Groundwater Contamination on Real Estate	Page	1991	UWS	
Prediction of Organic Chemical Leachate Concentrations from Soil Samples	Park	1991	UWS	
Crop Rotations Effects on Leaching Potential and Groundwater Quality	Posner, Bubenzer, Madison	1991-92	DNR	80
Barnyard Management Practices: Effect on Movement of Nitrogen Through Soils and Impact on Groundwater Quality	Shaw	1991-92	DNR	9

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
A Comparative Study of Nitrate-N Loading to Groundwater from Mound, In Ground Pressure and at Grade Septic Systems	Shaw, Turyk	1991-92	DNR	82
Waupaca County Groundwater Project: Towns of St. Lawrence and Little Wolf	Wilson, Blonde	1991	DNR	79a
1992				
Effects of Transient Cross-Stratification Flow on Contaminant Dispersion	Bahr	1992-93	UWS	
Geographical Information System for Subsurface Characterization	Bosscher, Adams	1992-93	UWS	
Distribution of Radionuclides in Wisconsin Groundwater	Bradbury, Mudrey	1992	DNR	91
Evaluation of NURE Hydrogeochemical Groundwater Data for Use in Wisconsin Groundwater Studies	Bradbury, Mudrey, Shrawder	1992	DNR	90
Preliminary Comparison of a Discrete Fracture Model with a Continuum Model for Groundwater Movement in Fractured Dolomite	Bradbury, Muldoon	1992	DNR	89
GIS Mapping of Groundwater Contaminant Sources, Quality and Contamination Susceptibility for Door County	Carlson, Stoll, Hronek	1992-93	DNR	93
Distribution, Transport and Fate of Major Herbicides and Their Metabolites	Chesters	1992-93	UWS/DATCP	
Dane County Atrazine/Land Management Project	Conners, Bohn, Madison, Muldoon, Richardson	1992	DATCP/ DNR	99
Use of Tire Chips to Attenuate VOCs	Edil, Park	1992-93	UWS	
Municipal Wastewater Absorption Pond Renovation for Enhanced Nitrogen Removal	Gilbert	1992-93	DNR	97
Living Mulch Systems for Nitrate Trapping in Vegetable Production	Harrison	1992-93	UWS	
Remediation of Soils Contaminated by Leaking Underground Storage Tanks by Vapor Extraction and In-situ Biostimulation	Hickey, Jacobsen, Bubenzer	1992-93	DNR	96
Herbicide and Nitrate Movement in a Sandy Soil in the Lower Wisconsin River Valley	Lowery, McSweeney	1992-93	UWS/DATCP	
Spatial Attributes of the Soil-Landscape-Groundwater System of the Lower Wisconsin River Valley	McSweeney, Madison, Attig, Bohn, Falk	1992-93	DNR	88

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Nitrogen Removal from Domestic Wastewater in Unsewered Areas	Otis, Converse	1992-96	DILHR	
New Approaches to Measuring Biologic Effects of Groundwater Contaminants	Porter	1992	UWS	
Estimating the Spatial Distribution of Groundwater Recharge Rates Using Hydrologic, Hydrogeologic and Geochemical Methods	Potter	1992-93	UWS/DATCP	
Investigation of Potential Groundwater Impacts at Demolition Landfills and Deer Pits	Pugh, Connelly	1992-93	DNR	98a
Assessment of Wisconsin's Groundwater Monitoring Plan Program for Active Non-Approved Landfills (1985-1990)	Pugh, Gear	1992	DNR	92
Evaluation of Denitrification Systems for Improving Groundwater from On-Site Waste Disposal Systems	Shaw	1992-93	DNR	95a
Arsenic as a Naturally Elevated Parameter in Water Supply Wells in Eastern Winnebago and Outagamie Counties	Stoll	1992	DNR	87
Waupaca County: Towns of Lebanon and Scandinavia	Wilson, Blonde	1992	DNR	79b
1993				
Urban Stormwater Infiltration: Assessment and Enhancement of Pollutant Removal	Armstrong	1993-94	DNR	102
Trace Metal Transport Affected by Groundwater Stream Interactions	Bahr	1993-94	UWS	
Tracer Study for Characterization of Groundwater Movement and Contaminant Transport in Fractured Dolomite	Bradbury, Muldoon	1993-94	DNR	101
Evaluation of Five Groundwater Susceptibility Assessments in Dane County, Wisconsin	Bridson, Bohn	1993-94	DNR	100
Management of Sweet Corn Processing Wastes to Protect Groundwater Quality	Bundy	1993-94	UWS	
Impact of Tunnel Dewatering on Surface Water Bodies in Milwaukee County	Cherkauer	1993-94	UWS	
A Further Study of Organics at Wisconsin Municipal Solid Waste Landfills	Connelly	1993-94	DNR	104
Ultrasonic Verification Technique for Evaluating Well Seals	Edil	1993-94	UWS	
Long-Term Transformation and Fate of Nitrogen with Mound Type Soil Absorption Systems for Septic Tank Effluent	Harkin	1993-94	DNR	103

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Field Evaluation of Near Source Transport of Contaminants in Heterogeneous Media	Hoopes	1993-94	UWS	
Variability of Hydraulic Conductivity in Supraglacial Sediments	Mickelson	1993-94	UWS	
The Impact of Atrazine Management Areas Designation on Weed Control Strategies in Wisconsin Corn Production	Nowak	1993	DATCP	
1994				
Photocatalytic degradation of volatile organic carbon	Anderson (Marc)	1994-95	UWS	94REM2B2
Improved design of pump and treat systems for heterogeneous aquifers	Bahr	1994-95	UWS	94REM3B2
Herbicide contamination of soil and groundwater at a mixing and loading site	Chesters	1994-95	UWS/ DATCP	94PES2B2
An Investigation of Field-Filtering and Low-Flow Pumping When Sampling for Metals	Connelly	1994	DNR	106
Mineral phase sorption of selected agrichemicals to Wisconsin Soils	Grundl	1994-95	UWS	94PES1B2
Stratigraphy, sedimentology, and porosity distribution of the Silurian rocks of the Door Peninsula, Wisconsin	Harris	1994-95	UWS	94HGE2B2
Using 'PREDICT' to reduce herbicide usage and improve groundwater quality	Harvey	1994-95	UWS	94PES6B2
Comparative evaluation of biostimulation approaches for enhancing in situ TCE degradation in contaminated aquifers	Hickey	1994-95	UWS	94REM6B2
Leaching Potential of Imazethapyr and Nicosulfuron in Sparta Sand	Lowery	1994	DATCP	
Cover Crops to Limit Herbicide Use on Sweet Corn	Newenhouse	1994	DATCP	
Groundwater Hydrogeology of an Agricultural Watershed	Potter	1994-95	DATCP/ DNR	109
Investigation of Potential Groundwater Impacts at Yard Waste Sites	Pugh, Connelly	1994	DNR	98b
Optimization of Two Recirculating Sand Filters for Nitrogen and Organic Chemical Removal from Domestic Wastewater	Shaw	1994	DNR	95b
Factors Affecting the Determination of Radon in Groundwater	Sonzogni	1994	DNR	111

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Integrated Computerized Mapping of Point Source Contaminants and Physical Environmental Characteristics to Protect and Manage Groundwater Quality	Stoll	1994	DNR	105
The Further Incidence of Native Arsenic in Eastern Wisconsin Water Supply Wells; Marinette, Oconto, Shawano and Brown Counties	Stoll	1994	DNR	110
Groundwater Survey of Alachlor and ESA its Polar Metabolite in Southern Wisconsin	Vanden Brook, Postle	1994	DATCP/ DNR	112
The Use of Peat as an Absorptive Medium	Wiersma, Stieglitz	1994	DATCP	
1995				
Evaluating the Effectiveness of Landfill Liners	Benson	1995-96	UWS	
Tracer Study for Characterization of Groundwater Movement and Contaminant Transport in Fractured Dolomite	Bradbury	1995-96	UWS	
Application of a Discrete Fracture Flow Model for Wellhead Protection at Sturgeon Bay, Wisconsin	Bradbury, Muldoon	1995-96	DNR	113
Direct and Residual Effects of Land-applied Sweet Corn Processing Wastes on Nitrate Loss to Groundwater	Bundy	1995-96	DNR	120
Integration of Hydraulics and Geology into a Hydrostratigraphic Model for the Paleozoic Aquifer of Eastern Dane County, Wisconsin	Cherkauer	1995	UWS	
A Comparison of Low Flow Pumping and Bailing for VOC Sampling	Connelly	1995	DNR	114
A Low-Input Crop Management Plan for Wisconsin Fresh-Market Vegetable Growers	Delahaut	1995	DATCP	
Use of Heavy Nitrogen to Study Nitrate Flux from Septic Systems	Harkin	1995-96	UWS/Comm	
Agrichemical Impacts to Groundwater Under Irrigated Vegetables in the Central Sand Plain	Kraft	1995-96	DNR	116
Vertical and Horizontal Variability of Hydrogeologic Properties in Glaciated Landscapes	Mickelson	1995	DNR	119
Synergistic Effects of Endocrine Disrupters in Drinking Water	Porter	1995-96	UWS	
Development and Demonstration of an Accurate Manure Spreading System to Protect Water Quality, Improve Waste Management and Farm Profitability	Shinners	1995-96	UWS	

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Geologic Constraints on Arsenic in Groundwater with Applications to Groundwater Modeling	Simo	1995	UWS	
Characterization of E. Coli and Total Coliform Organisms Isolated from Wisconsin Groundwater and Reassessment of their Public Health Significance	Sonzogni	1995	DNR	117
Evaluation of Enzyme-linked Immunosorbent Assay for Herbicide Analysis of Wisconsin Soil in Comparison to Gas Chromatography	Sonzogni	1995	UWS	
An Evaluation of Long-term Trends and a Mineralogical Interpretation of Naturally Occurring Metals Contamination and Acidification of the	Weissbach	1995-96	DNR	115
Collection of Hydraulic and Geologic Data to Improve the Quality of the Wisconsin Groundwater Monitoring Network	Zaporozec	1995-96	DNR	118
1996				
Bioremediation of Hydrocarbons Influenced by Air Sparging: A Multi-model Approach to Assess Contaminant Mass Removal	Bahr	1996	UWS	
Delineation of Capture Zones for Municipal Wells in Dane County, Wisconsin	Bradbury	1996	DNR	121
Responses of Biological Toxicity Tests to Mixtures of Pesticides and Metabolites	Chesters	1996-97	UWS	
Evaluation of Well Seals Using an Ultrasonic Probe	Edil	1996	UWS	
Iron-based Abiotic Destruction of Chlorinated Solvents and Pesticides in Groundwater	Eykholt	1996	DATCP	
Biostimulation of Trichloroethylene Degradation in Contaminated Aquifers	Hickey	1996	UWS	
Optimum Management of Ground-water Resources in the Lower Fox River Valley	Krohelski	1996-97	DNR	122
Variability of Nitrate Loading and Determination of Monitoring Frequency for a Shallow Sandy Aquifer, Arena, Wisconsin	Madison	1996-97	DNR	123
Characterization of the Role of Evapotranspiration on Groundwater Movement and Solute Chemistry in Groundwater-fed Wetlands	Potter	1996-97	UWS	
Ground-water Recharge and Contamination in Wisconsin's Driftless Area	Potter	1996	DATCP	

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Land Use Effects on Groundwater and Streamwater Quality in the Little Plover River Watershed	Shaw	1996-97	DATCP	
Stratigraphic Controls on the Mobilization and Transport of Naturally Occurring Arsenic in Groundwater: Implication for Wellhead Protection in	Simo	1996	UWS	
Evaluation of Shallow-soil Absorption Fields Associated with Advanced On-site Disposal System	Stieglitz	1996-97	DNR/UWS Comm	125
GIS as a Tool to Prioritize Environmental Releases, Integrate their Management, and Alleviate their Public Threat	Stoll	1996-97	DNR	126
The Use of Azimuthal Resistivity & Self Potential Measurements to Delineate Groundwater Flow Direction in Fractured Media	Taylor	1996	UWS	
An Integrated Approach to the Management of Insects in Sweet Corn Grown for Fresh Market	Wedberg	1996-97	DATCP	
1997				
Improved Estimation of Groundwater Recharge Rates	Anderson (Mary)	1997	UWS	
Hydrogeochemical and Microbiological Studies for Enhanced Ground Water Bioremediation	Bahr	1997-98	UWS	
In situ Air Sparging: Air Plume Characterization and Removal Effectiveness	Benson	1997-98	UWS	
Groundwater Protection by Application of Modern Portfolio Theory to Microbiotesting Strategies	Blondin	1997	UWS	
Holding Tank Effluent and Fecal-Contaminated Groundwater: Sources of Infectious Diarrhea in Central Wisconsin?	Borchardt	1997-98	Comm	
Development of a Variable Rate Nitrogen Application Approach for Corn	Bundy	1997-98	UWS	
Groundwater Bioremediation: Monitoring with MMO Probes	Collins	1997-98	UWS	
Experimental Verification of Models Used to Evaluate Landfill Liner Effectiveness	Edil	1997	UWS	

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Stratigraphy, sedimentology, and Porosity Distribution of the Silurian Aquifer of Ozaukee County, Wisconsin	Harris	1997	UWS	
Molecular Techniques for Detection and Identification of Sewage-Borne Human Pathogens in Soils	Hickey	1997-98	Comm	
Nitrate-Contaminated Drinking Water Followback Study	Kanarek	1997	DNR	131
Fate of Nicosulfuron in Sparta Sand	Lowery	1997	DATCP	
Treatment of Groundwater Contaminated with Chlorinated Aliphatics Using a Silicone Tubing Supported Methanotrophic Biofilm Reactor	Park	1997-98	UWS	
Evaluation of the Use of DUMPSTAT to Detect the Impact of Landfills on Groundwater Quality	Potter	1997	DNR	130
Stratigraphic Controls on Distribution of Hydraulic Conductivity in Carbonate Aquifers	Simo	1997-98	DNR	129
Improved Detection Limits for Ground Water Monitoring	Sonzogni	1997	DNR/UWS	128
Determining Compatibility Between Herbicide Release and Habitat for Karner Blue Butterfly in Red Pine Plantations	Sucoff	1997	DATCP	
A Study of Well Construction Guidance for Arsenic Contamination in Northeast Wisconsin	Weissbach	1997-98	DNR	127
1998				
Assessment of Impacts on Groundwater/Lake and Wetland Systems	Anderson (Mary)	1998	UWS	
Groundwater-Surface Water Interactions in the Nine Springs Watershed	Bahr	1998-99	DNR	137
Evaluation of the Confining Properties of the Maquoketa Formation in the SEWRPC Region of Southeastern Wisconsin	Bradbury	1998	DNR	138
Watershed-Scale Nitrate Contamination and Chloroflurocarbon Ages in the Little Plover Basin: A Study at the Groundwater/Surface Water Interface	Browne	1998-99	UWS	
Determining Ground-Water Recharge Rates in Southern Washington County	Cherkauer	1998-99	UWS	
Characterization of the Hydrostratigraphy of the Deep Sandstone Aquifer in Southeastern Wisconsin	Eaton	1998-99	DNR	134

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Further Evaluation of Well Seals Using an Ultrasonic Probe	Edil	1998	DNR	136
Evaluation of Exploration Borehole Seals Using Time Domain Reflectometry (TDR)	Edil	1998-99	UWS	
Fate of Metolachlor, Alachlor, and Nitrate in Granular Iron/Soil/Water Systems,	Eykholt, Davenport, Wonsettler	1998	DATCP	
Investigation of Air Sparging: Numerical Modeling, Laboratory Verification and Design Guidelines	Hoopes	1998-99	UWS	
The Direct Effect of Agricultural Chemicals on Wisconsin's Declining and Endangered Amphibians	Karasov	1998-99	UWS/DATCP	
Relationships Between Water Quality in Stream Base Flow and Private Wells and Land use in the Tomorrow/Waupaca River Watershed	Shaw	1998-99	DNR	132
Impact of Ginseng Production on Groundwater Quality,	Shaw, De Vita	1998	DATCP	
Northeast Region Public Water Supply Location Utilizing Geographic Information Systems and Global Positioning Systems	Stoll	1998	DNR	133
Effects of Fosamine, Picloram, and Triclopyr on Reducing Aspen in Prairie Bush Clover Habitat,	West	1998	DATCP	
Evaluation of Geology and Hydraulic Performance of Wisconsin Ground-Water Monitoring Wells	Zaporozec	1998	DNR	135
1999				
On-line SFE/GC for Improved Detection of Trace Organic Pollutants in Ground Water Monitoring	Armstrong	1999	UWS/DATCP	
A Rational Design Approach for Permeable Reactive Walls	Benson	1999-2000	UWS	
Viral Contamination of Household Wells Near Disposal Sites for Human Excreta	Borchardt, Sonzogni	1999-2000	DNR	144
Groundwater Flow and Heat Transport in Wetlands: Transient Simulations and Frequency-Domain Analysis	Bravo	1999-2000	UWS	
Monitoring: Evaluation of the Abundance, Diversity, and Activity of Methanotroph Populations in Groundwater	Collins	1999-2000	UWS	

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Mechanical Controls on Fracture Development in Carbonate Aquifers: Implications for Groundwater Flow Systems	Cooke	1999-2000	DNR	142
Acute and Chronic Toxicity of Nitrate to Brook Trout (Salvelinus fontinalis)	Crunkilton	1999-2000	DNR	140
Maquoketa Shale as Radium Source to the Cambro-Ordovician Aquifer System	Grundl	1999-2000	DNR	141
Sedimentology, Stratigraphy, and Porosity-Conductivity Relations of the Silurian Aquifer of Ozaukee County, Wisconsin	Harris	1999-2000	UWS	
Analysis of Microbiological and Geochemical Processes Controlling Biodegradation of Aromatic Hydrocarbons in Anaerobic Aquifers	Hickey	1999-2000	DNR	143
Assessing and Reducing Leaching of Agricultural Chemicals on Silt Loam Soils under Different Farming Systems	Kung	1999-2000	DATCP	
Using Geographic Information Systems and Soil Landscape Models to Predict Critical Sites for Nonpoint Source Pollution	Lowery	1999-2000	DATCP	
Water and Land Use: Interpretation of Existing Data to Foster Constructive Public Dialogue and Policy Formulation	Read	1999	UWS	
Natural Attenuation of Fuel and Related Groundwater Contaminants - A Measurement Method	Sonzogni	1999	UWS	
Fate of the Herbicides Atrazine, Cyanazine, and Alachlor and Selected Metabolites	Stoltenberg	1999	DATCP	
Hydraulic Conductivity and Specific Storage of Maquoketa Shale	Wang	1999	UWS	
2000				
A groundwater model for the Central Sands of Wisconsin: Assessing the environmental and economic impacts of Irrigated agriculture	Anderson (Martha), Bland, Kraft	2000	DATCP/ DNR	146
Remediating groundwater using reactive walls containing waste foundry sands	Benson, Eykholt	2000-01	DNR/UWS	147
Field verification of capture zones for municipal wells at Sturgeon Bay, Wisconsin	Bradbury, Rayne, Muldoon	2000	DNR	148
Refinement of two methods for estimation of groundwater recharge rates	Bradbury, Anderson, Potter	2000	DNR	150

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Causes of historical changes in groundwater recharge rates in southeastern Wisconsin	Cherkauer	2000-01	UWS	
Evaluating options for changing groundwater and leachate monitoring requirements for landfills to reduce mercury used by laboratories	Connelly, Stephens, Shaw	2000-01	DNR	151
Compatibility of containment systems with mine waste liquids	Edil, Benson	2000-01	UWS	
Time domain electromagnetic induction survey of eastern Waukesha County and selected locations	Jansen, Taylor	2000	UWS	
Admicelle-catalyzed reductive dechlorination of PCE by zero valent iron	Li	2000-01	UWS	
Development of neural network models for predicting nitrate concentration in well water	Lin, Shaw	2000-01	UWS	
Field monitoring of drainage and nitrate leaching from managed and unmanaged ecosystems	Norman, Brye	2000-01	UWS	
Macropore flow: A means for enhancing groundwater recharge or a potential source of groundwater contamination	Potter, Bosscher	2000-01	UWS	
Hydraulic Conductivity and Specific Storage of Maquoketa Shale	Wang	2000	UWS	
Improvement of Wisconsin groundwater monitoring network	Zaporozec	2000	DNR	149
2001				
Development of analytical methods for comprehensive chemical and physical speciation of arsenicals in groundwater	Aldstadt	2001-02	DNR	154
Removal of As(III) and As(V) in Contaminated Groundwater with Thin-Film Microporous Oxide Adsorbents	Anderson (Marc)	2001-02	UWS	
The Spatial and Temporal Variability of Groundwater Recharge	Anderson (Mary), Potter	2001	UWS	
Importance of Groundwater in Production and Transport of Methyl Mercury in Lake Superior Tributaries	Armstrong	2001-02	UWS	
A study of microbiological testing of well water quality in Door County and incidence of illness in humans	Braatz	2001	DNR	159
A Basin-Scale Denitrification Budget for a Nitrate Contaminated Wisconsin Aquifer: A Study at the Groundwater/Surface Water Interface	Browne, Kraft	2001-02	UWS	

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
New approaches to the assessment of microbes in groundwater: application to monitoring bioremediation and detection of pathogens	Collins	2001-02	DNR	155
VOC trend analysis of WI solid waste landfill monitoring data: A preliminary analysis of the natural attenuation process	Connelly	2001-02	DNR	153
Evaluation of pathogen and nitrogen movement beneath on-site systems receiving domestic effluent from single pass sand filters	Converse	2001	Comm	
Effectiveness of phytoremediation and hydrogeologic response at an agricultural chemical facility in Bancroft, WI	DeVita, Dawson	2001-02	DATCP	
Effect of Clean and Polluted Groundwater on Daphnia Reproduction and Development	Dodson	2001-02	UWS	
Verification and characterization of a fracture network within the Maquoketa shale confining unit, SE Wisconsin	Eaton	2001	DNR	157
Groundwater Modeling: Semi-Analytical Approaches for Heterogeneity and Reaction Networks	Eykholt	2001	UWS	
Geologic and geochemical controls on arsenic in groundwater in northeastern Wisconsin	Gotkowitz	2001-02	DNR	152
Screening of agricultural and lawn care pesticides for developmental toxicity using the mouse embryo assay	Greenlee	2001	DATCP	
Public health impacts of arsenic contaminated drinking water	Knobeloch	2001-02	DNR	158
Pesticide and nitrate leaching in soils receiving manure	Lowery, Arriaga, Stoltenberg	2001	DATCP	
An analysis of arsenic replacement wells to determine validity of current DNR well construction guidance	O'Connor	2001-02	DNR	156
Remediation of Soil and Groundwater Using Effectively and Ineffectively Nodulated Alfalfa	Turyk, Shaw	2001-02	UWS/DATCP	
2002				
Groundwater-lake interaction: Response to climate change Vilas County, Wisconsin	Anderson (Mary)	2002	UWS	02-GSI-1
Impacts of privately-sewered subdivisions on groundwater quality in Dane County, WI	Bradbury	2002-3	UWS	02-OSW-1
Chloroacetanilide and atrazine residue penetration and accumulation in two Wisconsin groundwater basins	DeVita, McGinley, Kraft	2002-3	DATCP	

Title	Principal Investigator(s)	Years Funded	Funding Agency	Project # (if assigned)
Effect of clean and polluted groundwater on reproduction and development of Daphnia	Dodson	2002	UWS	02-BEP-1
Monitoring Contaminant Flux from a Stormwater Infiltration Facility to Groundwater	Dunning, Bannerman	2002-3	DNR	168
Removal of heavy metals and radionuclides from soils using cationic surfactant flushing	Evans, Li	2002-3	UWS	02-REM-3
Impacts of land use and groundwater flow on the temperature of WI trout streams	Gaffield, Wang	2002-3	UWS	02-GSI-3
Delineation of high salinity conditions in the Cambro-Ordovician aquifer of eastern Wisconsin	Grundl, Taylor	2002	DNR	170
Investigation of changing hydrologic conditions of the Coon Creek watershed in the driftless area of Wisconsin	Hunt	2002	UWS	02-GSI-2
Susceptibility of La Crosse municipal wells to enteric virus contamination from surface water contributions	Hunt, Borchardt	2002	DNR	165
Occurrence of antibiotics in wastewater effluents and their mobility in soils. A case study for Wisconsin	Karthikeyan, Bleam	2002-3	DATCP/ DNR	169
Nitrate loading history, fate, and origin for two Wisconsin groundwater basins	Kraft	2002-03	DNR	171
Monitoring and Scaling of Water Quality in the Tomorrow-Waupaca Watershed	Lin, Browne	2002-3	UWS	02-SAM-1
Co-occurrence and removal of arsenic and iron in groundwater	McGinley	2002-3	UWS	02-REM-2
Agrochemical leaching from sub-optimal, optimal, and excessive manure-N fertilization of corn agroecosystems	Norman, Brye	2002-3	DATCP	
Removal of arsenic in groundwater using novel mesoporous sorbent	Park	2002-3	UWS	02-REM-5
Field evaluation of raingardens as a method for enhancing groundwater recharge	Potter	2002-3	UWS	02-BMP-1
Importance of disinfection on arsenic release from wells	Sonzogni, Bowman Standridge, Clary	2002-3	DNR	172
Preservation and survival of E. coli in well water samples submitted for routine analyses	Sonzogni, Standridge, Bussen	2002	DNR	173
Development of a culture method for detection of Helicobacter pylori in groundwater	Sonzogni, Standridge, Degnan	2002	DNR	167
Time domain electromagnetic induction survey of the sandstone aquifer in the Lake Winnebago area	Taylor, Jansen	2002	DNR	173

WISCONSIN FERTILIZER RESEARCH PROGRAM

The Wisconsin Fertilizer Research Program is a state-wide funding source for applied agricultural research. Funding criteria contained in the law states that funds shall be forwarded to the University of Wisconsin to be used "for research on soil management, soil fertility, plant nutrition problems and for research on surface water and ground water problems which may be related to fertilizer usage; for dissemination of the results of the research; and for other designated activities tending to promote the correct usage of fertilizer materials."

Fertilizer Research Program objectives are:
1) To gain knowledge on fertilizer efficiency, plant nutrition, and groundwater and surface water protection that can improve agricultural profitability and protect resources.
2) To provide information for Wisconsin farmers that can be used for making wise decisions regarding fertilizer use in Wisconsin.

The Fertilizer Research Council resides in the Department of Agriculture, Trade and Consumer Protection. The Council nonvoting members are the Secretary of Agriculture, Trade and Consumer Protection, the Secretary of Natural Resources, and the Dean of the College of Agricultural and Life Sciences at the University of Wisconsin-Madison, or their representatives. The Council has seven voting members: three members are industry representatives selected from a list of candidates provided by the fertilizer industry; three members are farmers who are crop producers; and one member serves as a water quality expert. All members are volunteers, and serve no more than two consecutive 3-year terms. The Council is responsible for recommending projects to be financed by fertilizer research funds. The Council members meet annually to select projects to recommend for funding. Recommendations are made by a majority vote of the Council.

Projects funded in FY 2001 and projects selected for funding in FY 2002 are listed in the following tables.

RESEARCH PROJECTS FUNDED BY THE FERTILIZER RESEARCH COUNCIL FOR FY 02

Project Number	PI	Title	Funding
191-01	Bundy	Manure Management and History Effects on Phosphorus Losses in Runoff from Land-Applied Manure in Corn Production	$15,130.00
192-01	Roper	Reducing Phosphorus Fertilizer Application to Cranberry Beds	$2,350.00
195-01	Cooper band	Water availability of phosphorus from animal manures and P fertilizers applied to soils	$25,919.00
190-00	Kelling	Evaluation of Dairy Manure Use in Potato Production Systems	$9,600.00
189-00	Kelling	Effect of Stand Age on Alfalfa Response to N and/or S and Confirmation of Alfalfa needs in WI	$7,900.00
188-00	Li	Use of Surfactant Modified Zeolite as Fertilizer Additive to control nitrate sulfate and phosphate release	$8,307.00
186-00	Bundy	Evaluating Benefits from Over-winter Cover Crops	$11,520.00
185-99	Kelling	Investigations into Improved N Use Efficiency in Potatoes	$ 9,000.00
184-99	Kelling	Interaction of Soil pH and Rate of Topdressed K on Alfalfa Forage Mineral Levels, Yield, and Quality	$11,000.00
177-99	Bundy	P Losses in Runoff from WI Soils	$8,650.00
175-99	Bundy	N-Application Effects on Residue Decomposition and No-till Corn Yields	$10,000.00
172-99	Kelling	Effect of Tillage and Timing on Legume N Mineralization and N Credit to Small Grains	$9,900.00
91	Kelling	Evaluation of Certain non-conventional soil additives	$5,000.00

RESEARCH PROJECTS FUNDED BY THE FERTILIZER RESEARCH COUNCIL FOR FY 03

Project Number	PI	Title	Funding
114-90	Dr. Keith Kelling UW-Soil Science	Evaluation of Certain non-conventional soil additives	$4,000.00
185-99	Dr. Keith Kelling UW-Soil Science	Investigations into Improved N Use Efficiency in Potatoes	$8,500.00
186-00	Dr. Larry Bundy UW-Soil Science	Evaluating Benefits from Over-wintering Cover Crops	$11,920.00
190-00	Dr. Keith Kelling UW-Soil Science	Evaluation of Dairy Manure Use in Potato Production Systems	$9,600.00
191-01	Dr. Larry Bundy UW-Soil Science	Manure Management and History Effects on Phosphorus Losses in Runoff from Land-Applied Manure in Corn Production	$15,720.00
192-01	Dr. Teryl Roper UW-Horticulture	Reducing Phosphorus Fertilizer Application to Cranberry Beds	$2,350.00
196-02	Dr. K.G. Karthikeyan UW-BSE	Phosphorus Dynamics in Soils Receiving Chemically Treated Dairy Manure	$17,125.00
197-02	Dr. Shawn Kaeppler UW-Agronomy	Maize hybrid response to P fertilization: Analysis of genotypes with divergent root traits, P efficiency, and mycorrhizal responsiveness	$10,000.00
198-02	Dr. Wayne Kussow UW-Soil Science	Soil Test Selection and Calibration for Turf	$9,344.00
		TOTAL	$88,559.00

STATUTORY LANGUAGE RELATING TO THE GCC

SECTION 2. 15.347 (13) of the statutes is created to read:

15.347 (13) Groundwater Coordinating Council. (a) *Creation*. There is created a groundwater coordinating council, attached to the department of natural resources under s. 15.03. The council shall perform the functions specified under s. 160.50.

(b) *Members*. The groundwater coordinating council shall consist of the following members:
1. The secretary of natural resources.
2. The secretary of industry, labor and human relations.
3. The secretary of agriculture, trade and consumer protection.
4. The secretary of health and social services.
5. The secretary of transportation.
6. The president of the university of Wisconsin.
7. The state geologist.
8. One person to represent the governor.
9. ~~One person who is a member of a local health department under s. 149.09, appointed by the governor to represent local health departments.~~ (Vetoed in part)

c) *Designees*. Under par.(b), agency heads may appoint designees to serve on the council, if the designee is an employe or appointive officer of the agency who has sufficient authority to deploy agency resources and directly influence agency decision making.

d) *Terms*. Members appointed under par. (b) 8 ~~and 9~~ shall be appointed to 4-year terms. (Vetoed in part)

e) *Staff*. The state agencies with membership on the council and its subcommittees shall provide adequate staff to conduct the functions of the council.

f) *Meetings*. The council shall meet at least twice each year and may meet at other times on the call of 3 of its members. Section 15.09 (3) does not apply to meetings of the council.

g) *Annual report*. In August of each year the council shall submit to the head of each agency with membership on the council, the members of appropriate standing committees of the legislature and the governor, a report which summarizes the operations and activities of the council during the fiscal year concluded on the preceding June 30, describes the state of the groundwater resource and its management and sets forth the recommendations of the council. The annual report shall include a description of the current groundwater quality in the state, an assessment of groundwater management programs, information on the implementation of ch. 160 and a list and description of current and anticipated groundwater problems. In each annual report, the council shall include the dissents of any council member to the activities and recommendations of the council.

Non-statutory provisions: Natural Resources

(9) GROUNDWATER COORDINATING COUNCIL: INITIAL APPOINTMENTS. (a) Notwithstanding section 15.347 (13)(d) of the statutes, as created by this act, the initial member appointed to the groundwater coordinating council under section 15.347 (13) (b) 8 of the statutes, as created by this act, shall be appointed for a term ending on July 1, 1987~~ and the initial member appointed to the groundwater coordinating council under section 15.347 (13) (b) 9 of the statutes as created by this act, shall be appointed for a term ending on July 1, 1985.~~ (Vetoed in part)

(b) Following initial appointments under paragraph (a), members appointed to the groundwater coordinating council under section 15.347 (13) (b) 3 and 4 of the statutes, as created by this act, shall serve for the terms prescribed under section 15.347 (13) (d) of the statutes as created by this act.

160.50 Groundwater coordinating council. (1) GENERAL FUNCTIONS. The groundwater coordinating council shall serve as a means of increasing the efficiency and facilitating the effective functioning of state agencies in activities related to groundwater management. The groundwater coordinating council shall advise

and assist state agencies in the coordination of nonregulatory programs and the exchange of information related to groundwater, including, but not limited to, agency budgets for groundwater programs, groundwater monitoring, data management, public information and education, laboratory analysis and facilities, research activities and the appropriation and allocation of state funds for research.

(2) SUBCOMMITTEES. The groundwater coordinating council may create subcommittees to assist in its work. The subcommittee members may include members of the council, employes of the agencies with members on the council, employes of other state agencies, representatives of counties and municipalities and public members. The council shall consider the need for subcommittees on the subjects within the scope of its general duties under sub. (1) and other subjects deemed appropriate by the council.

(3) REPORT. The groundwater coordinating council shall review the provisions of 1983 Wisconsin Act...(this act) and report to the legislature concerning the implementation of the act by January 1, 1989.

GROUNDWATER
Wisconsin's
buried treasure

State of Wisconsin \ GROUNDWATER COORDINATING COUNCIL

Scott McCallum, Governor

101 South Webster Street
Box 7921
Madison, Wisconsin 53707
FAX 608-267-7650
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DATE: March 6, 2002

TO: Secretary Philip Edw. Albert - Department of Commerce
Secretary Darrell Bazzell - Department of Natural Resources
Secretary Phyllis Dubé - Department of Health and Family Services
Secretary James E. Harsdorf - Department of Agriculture, Trade & Consumer Protection
Secretary Gene E. Kussart - Department of Transportation

FROM: Susan L. Sylvester - Chair, Groundwater Coordinating Council

SUBJECT: Agency Funding for Groundwater Monitoring and Research

On behalf of the Wisconsin Groundwater Coordinating Council (GCC), I would like to thank you for your ongoing support and commitment to groundwater monitoring and research in the state of Wisconsin. Since 1992, the Department of Natural Resources, the Department of Commerce, the Department of Agriculture, Trade & Consumer Protection, and the University of Wisconsin System have participated in a joint solicitation for research proposals to enhance the understanding and protection of Wisconsin groundwater.

Each year, approximately $600,000 to $700,000 have been made available to UW System researchers, agency staff, the Wisconsin Geological and Natural History Survey, and other partners, with over half of that amount coming from agency sources. Benefits of these funds are wide-ranging, including:

- assessment of the arsenic problem in northeastern Wisconsin;
- developing alternative wastewater treatment methodologies to protect groundwater;
- guiding best management practices for use of pesticides and fertilizers;
- developing groundwater flow models to predict impacts of future water supply needs; and
- monitoring for the presence of new contaminants and contaminant sources, including landfills and hazardous waste storage sites.

We have recently learned that the DNR, DATCP, and Commerce will be only able to participate with the UW System in funding one new groundwater monitoring and research project in FY 03. As a result, just 7 of 38 proposals that were submitted will be funded, at a total of $162,000. This is less than half of the usual funding level for new projects. We recognize that in times of fiscal shortfalls, agencies have to cut back on many programs, including monitoring and research budgets. However, we strongly urge you to make restoration of these funds a priority in future budget cycles. We believe that monitoring and research programs are fundamental to the long-term sustainability of Wisconsin's groundwater resource and drinking water supply.

For more information, please contact Tim Asplund, GCC staff person at (608) 267-7449 or *asplut@dnr.state.wi.us*.