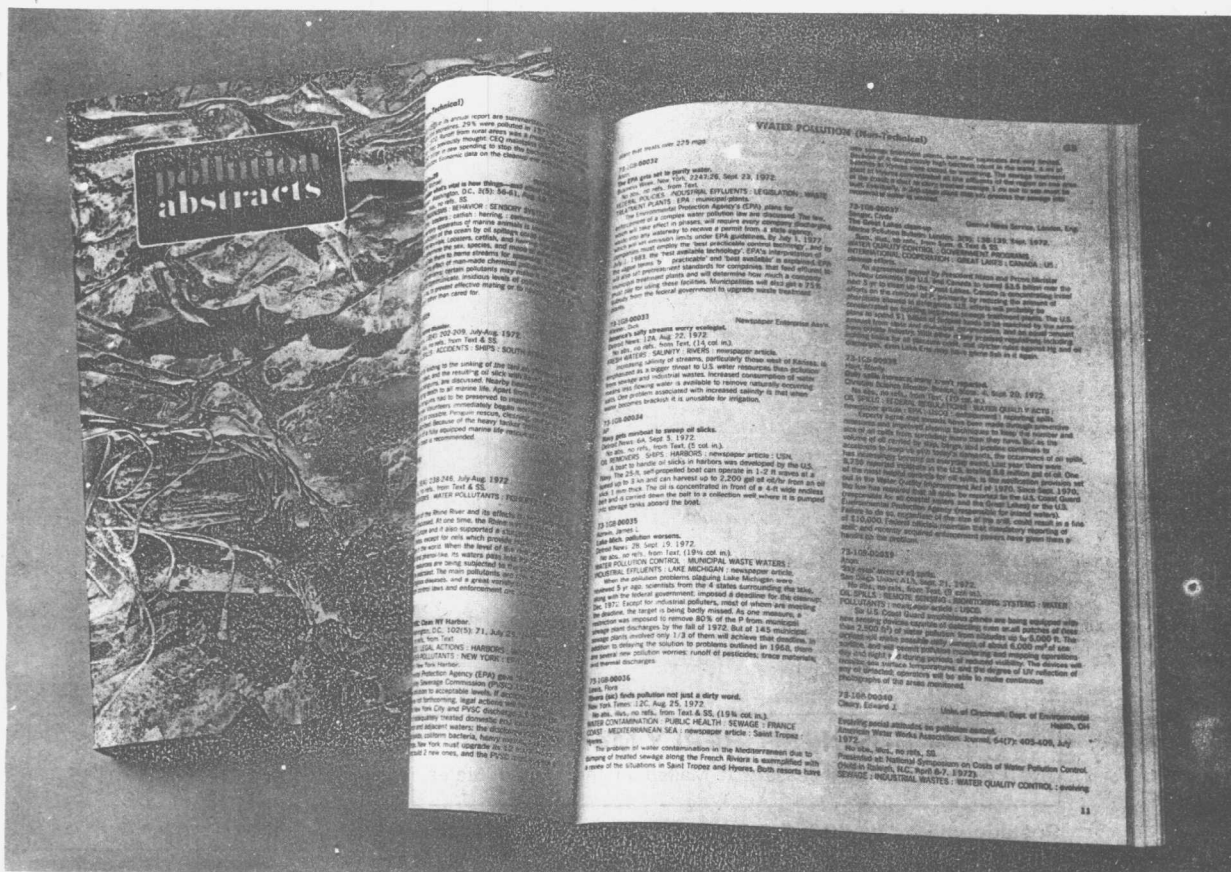


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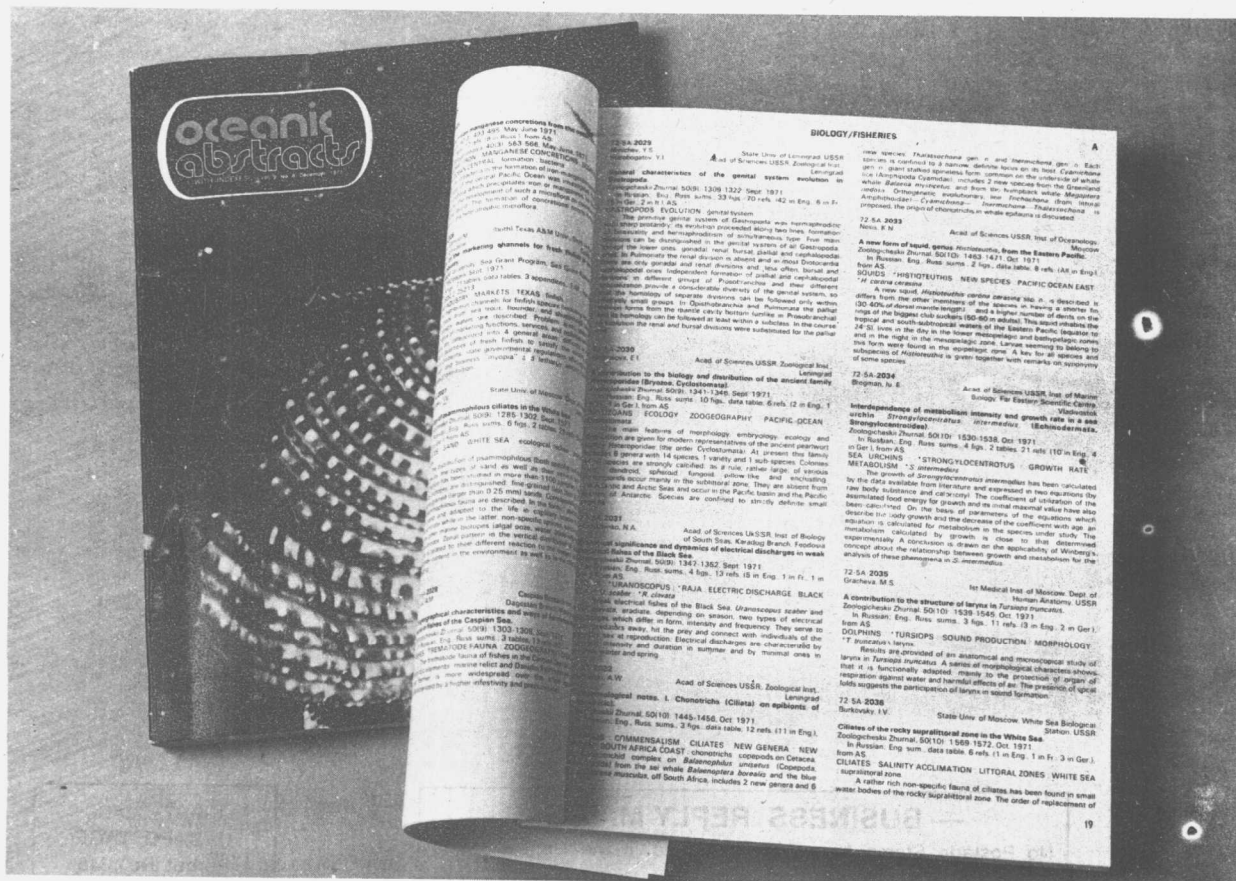
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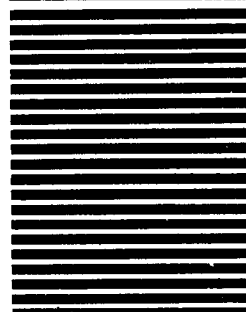
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water quality abstracts

a special compendium from Pollution Abstracts Inc.,
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water quality abstracts

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Foreword to

water quality abstracts

Water Quality Abstracts is designed for engineers, librarians, consultants, administrators, teachers, students, and others who must locate specific water quality information quickly and easily.

This reference contains summaries of up to 200 words that give the highlights of recent water quality literature. The abstracts are arranged by areas of interest. When possible, the abstracts give the methods and conclusions reported in the original material. Accompanying each abstract is complete bibliographic information, giving author affiliation, publication data, etc.

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Abstracts pertinent to more than one subject appear in all the appropriate subchapters.

If you have difficulty locating an author in order to obtain a copy of his complete report, write to the Library Services Department of Pollution Abstracts Inc. for assistance.

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HOW TO USE

water quality abstracts

To use this reference, simply consult the table of contents for the chapters and subchapters relevant to your research. The abstracts in each subchapter are arranged by year of publication. Abstracts published in the same year are arranged alphabetically by author.

Sample abstract

AUTHOR	Graves, G. W. Hatfield, G. B. Whinston, A.	(both) Univ. of California, Graduate School of Business, Los Angeles Purdue Univ., Krannert Graduate School, Lafayette, IN	AUTHOR AFFILIATION
TITLE	Water pollution control using by-pass piping.		
PUBLICATION	[Name] Water Resources Research, Washington, D.C., [Volume Number] 5(1): [Page Numbers] 13-47, [Date] Jan. 1970. Abs., illus., refs., AA. Contract: FWQA No. WP-01210-02.		
KEY WORD	WATER QUALITY CONTROL : PIPES : ESTUARIES : MATHE- MATICAL MODELS: by-pass piping		DESCRIPTOR
ABSTRACT	This paper presents a mathematical model of regional water quality management using by-pass piping. The model is developed within the framework of linear programming and a large-scale prob- lem is solved using semi-realistic data from the Delaware Estuary. The technique of generation of elements is used in conjunction with the truncated tableau to provide efficient solutions. A possible method of taxation is indicated based on the values of the dual variables.		

Legend

*	—Asterisk before a biological keyterm indicates that the term is <i>Taxonomic</i> (genus or species).	AA	—Indicates author's abstract.
(UM)	—Indicates that the document is an unpublished manuscript.	AS	—Indicates author's summary.
Ref. order No.	—These may be obtained from the U.S. Department of Commerce Clearinghouse for Federal Scientific and Technical Information, Springfield, VA 22151.	SS	—Indicates summary prepared by staff personnel.
		TA	—Indicates translator's abstract.
		[n.d.]	—"n.d." in brackets indicates that no publication date was given for document.
		[Title]	—Title in brackets indicates no original title was given.
		[Date?]	—Date and question mark in brackets indicate probable date of publication.

ABBREVIATIONS/PREFIXES/SYMBOLS

a	acre	gph	gallons per hour
Å	Angstrom	gpm	gallons per minute
AC	alternating current	gps	gallons per second
ADP	adenosine diphosphate	GT	gross ton
a.m.	(with time)	h	hecto-(10 ²)
amp	ampere	ha	hectare
AMP	adenosine monophosphate	Hb	hemoglobin
AMU	atomic mass unit	HEMPA	hexamethyl phosphoric triamide
atm	atmosphere	HF	high frequency
ATP	adenosine triphosphate	hp	horsepower
AWT	advanced waste treatment	hr	hour
bbf	barrel	HRAS	high-rate activated sludge waste treatment
BCG	bacillus Calmette-Guerin	ht	height
BOD	biochemical oxygen demand	Hz	Hertz (cycles/second)
BOP	blowout preventers	i.e.	that is
BPD	barrels per day	i.m.	intramuscular(ly)
BTU	British thermal unit	in	inch
c	centi-(10 ⁻²)	i.p.	intraperitoneal(ly)
°C	degrees Centigrade	IR	infrared
ca.	circa	i.v.	intravenous(ly)
cal	calorie	k	kilo-(10 ³)
CBW	chemical and biological warfare	°K	degree Kelvin
cc	cubic centimeter	kc	kilocycle, kilocycles per sec
cf	cubic ft per day	kcal	kilocalorie
cfh	cubic ft per hour	kg	kilogram
cfm	cubic ft per minute	K _m	Michaelis constant
cfs	cubic ft per sec	kn	knot
Ci	Curie	kv	kilovolt
cm	centimeter	kw	kilowatt
CMAS	complete mixing activated sludge	l	liter
COD	chemical oxygen demand	/	levorotatory
comb. n.	new combination (with taxa)	lat	latitude
CPM	cycles per minute	lb	pound
CPS	cycles per second; combination precipitation-scrubber systems	LD ₅₀	lethal dose, median
cwt	hundredweight	LF	low frequency
2, 4-D	2,4-Dichlorophenoxyacetic acid	LNG	liquefied natural gas
d	day, deca-(10 ¹); deci-(10 ⁻¹)	long	longitude
d	dextrorotatory	LOSS	large object salvage system
db	decibel	LOT	load on top
DC	direct current	LPG	liquefied petroleum gas
DDD	1,1-Dichloro-2,2-bis (p-chlorophenyl) ethane	LTA	low temperature ashing
DDE	1,1-Dichloro-2,2-bis (p-chlorophenyl) ethene	m	meter, milli-(10 ⁻³)
DDT	1,1,1-Trichloro-2,2-bis (p-chlorophenyl) ethane	m	molal
DNA	deoxyribonucleic acid	M	mega
DO	dissolved oxygen	M	molar
DOP	dioctyl phthalate	ma	milliampere
dwt	deadweight ton	mc	megacycle, millicurie
e	erg	mev	million electron volt
E	east	mg	milligram
EDTA	ethylenediamine tetraacetic acid	mgd	million gallons per day
e.g.	for example	MHD	magnetohydrodynamics
EHP	effective horsepower; electric horsepower	mi	mile
emu	electromagnetic unit	min	minute
EPR	electron paramagnetic resonance	ml	milliliter
ESR	electron spin resonance	MLD	minimum lethal dose
esu	electrostatic unit	mm	millimeter
etc.	and others	mo	month
ev	electron volt	mpg	miles per gallon
f	farad	mph	miles per hour
°F	degree Fahrenheit	mps	miles per second
fam. n.	new family (taxa)	mr	milliroentgen
fm	fathom	mv	millivolt
fpm	feet per minute	Mw	megawatt
fps	feet per second	mw	milliwatt
ft	foot	my	myria-(10 ⁴)
ft lb	foot-pound	n	nano-(10 ⁻⁹)
g	gram	N	north
g	gravitational constant	N	normal (concentration)
gal	gallon	NAA	neutron activation analysis
gen. n.	new genus (taxa)	NAD	nicotinamide adenine dinucleotide
gen. n. et	new genus and	NADH	nicotinamide adenine dinucleotide (reduced)
sp. n.	new species (taxa)	NADP	nicotinamide adenine dinucleotide phosphate
GLC	gas-liquid chromatography	NADPH	nicotinamide adenine dinucleotide phosphate (reduced)
gpd	gallons per day	NDIR	nondispersive infrared analyzers

ABBREVIATIONS / PREFIXES / SYMBOLS

NEDTA	disodium salt of ethylenediamine tetraacetic acid	STP	standard temperature and pressure
nm	nautical mile	subg.	subgenus
NMR	nuclear magnetic resonance	subg. n.	new subgenus (taxa)
nom. n.	new name (taxa)	2,4,5-T	2,4,5-Trichlorophenoxyacetic acid
NTA	nitritotriacetic acid	thp	thrust horsepower
nt wt	net weight	TLC	thin layer chromatography
O	ohm	tn	ton
oz	ounce	TNT	trinitrotoluene
p	pico- $\{10^{-12}\}$	TOC	total organic carbon
PAB	pulsed adsorption bed process	TOD	total oxygen demand
PCB	polychlorinated biphenyl	TPD	tons per day
pCi	picocurie	TPH	tons per hour
PCV	positive crankcase ventilation	TPY	tons per year
pH	the negative log of the H ion concentration	TTS	temporary threshold shift
pK	the negative log of the dissociation constant	UHF	ultra high frequency
p.m.	(with time)	U.S.	United States of America
PMR	paramagnetic resonance	USSR	Russia (Union of Soviet Socialist Republics)
ppb	parts per billion	UV	ultraviolet
ppm	parts per million	V	volt
ppt	parts per thousand	VHF	very high frequency
psf	pounds per square foot	VLCC	very large crude carrier
psi	pounds per square inch	vol	volume
R	roentgen	vs	versus
rms	root-mean square	VTOL	vertical take-off and landing
RNA	ribonucleic acid	W	watt, west
rpm	revolutions per minute	whp	water horsepower
rps	revolutions per second	wk	week
RU	rat unit	WQI	water quality index
R/V	research vessel (ships)	wt	weight
S	south	yd	yard
s.c.	subcutaneous(ly)	yr	year
SD	standard deviation	μ	micron, micro- $\{10^{-6}\}$
sec	second	μ a	microampere
shp	shaft horsepower	μ g	microgram
SODA	disodium oxydiacetate	μ v	microvolt
SOP	surface oil pickup	%	percent
sp.	species	o/oo	per thousand
SPL	sound pressure level	/	per
sp. n.	new species (taxa)		
spp.	species (plural)		
ssp.	subspecies		
ssp. n.	new subspecies (taxa)		
		months, names of	
		Jan., Feb., Aug., Sept., Oct.,	
		Nov., Dec.	
		chemical elements	

ACRONYMS

AAAS	American Association for the Advancement of Science.	FPC	Federal Power Commission (U.S.).
ACE	U.S. Army Corps of Engineers.	FRP	Feather River Project.
ACS	American Chemical Society.	FTC	Federal Trade Commission (U.S.).
ADAPTS	Air Delivered Antipollution Transfer System.	FWPCA	Federal Water Pollution Control Administration (U.S.) (Now FWQA).
AEC	Atomic Energy Commission (U.S.).	FWQA	Federal Water Quality Administration (Was FWPCA).
AERE	Atomic Energy Research Establishment (U.K.).	GARP	Global Atmospheric Research Programme.
AIAA	American Institute of Aeronautics and Astronautics.	GEMS	Global Environmental Monitoring System.
AICE	American Institute of Chemical Engineers.	GEP	Gulf Environmental Measurements Program.
AMA	American Medical Association.	HEW	Health, Education and Welfare Department (U.S.).
AMRED	U.S. Army Medical Research and Development Command.	HUD	Department of Housing and Urban Development (U.S.).
AOAC	Association of Official Analytical Chemists.	IAEA	International Atomic Energy Agency.
AP	Associated Press.	IBP	International Biological Program.
APCA	Air Pollution Control Association (U.S.).	IEEE	Institute of Electric and Electronics Engineers.
APCO	Air Pollution Control Office (U.S.).	IFP	Institut Francais du Petrole.
APHA	American Public Health Association.	IMCO	Inter-Governmental Maritime Consultive Organization.
API	American Petroleum Institute.	INTERPET	International Petroleum Company.
APPA	American Public Power Association.	IRRPOS	Interdisciplinary Research Relevant to the Problems of Our Society (U.S.).
APRAC	Air Pollution Research Advisory Committee (U.S.).	ISA	Instrument Society of America.
ARS	Agricultural Research Service (U.S.).	ISFR	International Society for Fluoride Research.
ASARCO	American Smelting and Refining Company.	MIT	Massachusetts Institute of Technology.
ASCE	American Society of Civil Engineers.	MITI	Ministry of International Trade & Industry (Japanese).
ASME	American Society of Mechanical Engineers.	NACE	National Association of Corrosion Engineers.
ASTM	American Society for Testing and Materials.	NAE	National Academy of Engineering (U.S.).
AWRA	American Water Resources Association.	NAEMB	National Academy of Engineering Marine Board (U.S.).
AWWA	American Water Works Association.	NAPCA	National Air Pollution Control Administration (U.S.).
BAAPCD	Bay Area Pollution Control District (San Francisco, U.S.A.).	NAS	National Academy of Sciences (U.S.).
BCF	Bureau of Commercial Fisheries (Now National Marine Fisheries Service) (U.S.).	NASA	U.S. National Aeronautics and Space Administration.
CARETS	Central Atlantic Regional Ecological Test Site (U.S.).	NASCO	National Academy of Sciences Committee on Oceanography (U.S.).
CEA	Commissariat a l'Energie Atomique (France).	NASN	National Air Sampling Network.
CEQ	Council on Environmental Quality (U.S.).	NAVFAC	Naval Engineering Facilities Command (U.S.).
CERBOM	Centre d'Etudes et de Recherches de Biologie et d'Océanographie Médicale.	NCAR	National Center for Atmospheric Research (U.S.).
CHABA	National Research Council Committee on Hearing, Bioacoustics and Biomechanics (Great Britain).	NCASI	National Council of the Paper Industry for Air and Stream Improvement.
CMI	Comite Maritime International.	NCDC	National Communicable Disease Center (U.S.).
CNEN	Comitato Nazionale per l'Energia Nucleare (Italy).	NCEL	Naval Civil Engineering Laboratory (U.S.).
CNRS	Centre National de la Recherche Scientifique (France).	NEDN	Navy's Worldwide Environmental Data Network (U.S.).
CNS	Canadian News Service.	NEPA	National Environmental Policy Act.
COMIRO	Mexican Engineering Committee on Ocean Resources.	NERC	National Environmental Research Council (U.K.).
CPEHS	Consumer Protection and Environmental Health Service (U.S.).	NICHHD	National Institute of Child Health and Human Development (U.S.).
CSIR	Council for Scientific and Industrial Research (S. Africa).	NIH	National Institute of Health (U.S.).
CSIRO	Commonwealth Scientific and Industrial Research Organization (Australia).	NMFS	National Marine Fisheries Service (U.S.).
DOT	Department of Transportation (U.S.).	NMRI	Naval Medical Research Institute (U.S.).
EAWAG	Federal Institute for Water Supply, Sewage Purification and Water Pollution Control-Switzerland.	NOAA	National Oceanic and Atmospheric Administration.
ECA	Environmental Control Administration (U.S.).	NOIC	National Oceanographic Instrumentation Center.
ECOM	U.S. Army Electronics Command.	NRCC	National Research Council of Canada.
ECOR	International Engineering Committee on Oceanic Resources.	NRDL	Naval Radiological Defense Laboratory (U.S.).
EPA	Environmental Protection Agency (U.S.).	NRL	Naval Research Laboratory (U.S.).
EQC	Environmental Quality Council.	NSF	National Science Foundation.
EROS	Earth Resource Observation Satellite.	OAP	Office of Air Programs (EPA).
ERTS	Earth Resources Technology Satellite.	OECD	Organisation for Economic Co-Operation and Development.
ESSA	U.S. Environmental Science Services Administration.	ONR	Office of Naval Research.
FAA	Federal Aviation Administration (U.S.).	ORSANCO	Ohio River Valley Water Sanitation Commission.
FAO	Food and Agriculture Organization of the United Nations.	OST	Office of Science and Technology (U.S.).
FCC	Federal Communications Commission (U.S.).	OSW	Office of Saline Water (U.S.).
FCCI	Federal Clean Car Incentive Program (U.S.).	OWRC	Ontario Water Resources Commission (Canada).
FCST	Federal Council for Science and Technology (U.S.).	OWRR	U.S. Dept. of the Interior, Office of Water Resources Research.
FDA	Food and Drug Administration (U.S.).	PPRIC	Pulp and Paper Research Institute of Canada.
		SAE	Society of Automotive Engineers.

ACRONYMS

SCOR	Scientific Committee on Oceanic Research.	USAAVLABS	U.S. Army Air Mobility Research and Development Laboratory.
SDA	Soap & Detergent Association.	USAF	U.S. Air Force.
SEC	Securities and Exchange Commission (U.S.)	USASI	U.S. of America Standards Institute.
SFI	Support Fisheries Institute.	USBM	U.S. Bureau of Mines.
SIO	University of California at San Diego, Scripps Institution of Oceanography, La Jolla.	USCG	U.S. Coast Guard.
SPE	Society of Petroleum Engineers.	USDA	U.S. Department of Agriculture.
SPEC	Scientific Pollution and Environmental Control Society (Canada).	USDC	U.S. Dept. of Commerce.
SUPSAL	Supervisor of Salvage (U.S.).	USDI	U.S. Department of Interior.
TNO	Toegepost Natuurwetenschappelijk Onderzoek	USGS	U.S. Geological Survey.
TOVALOP	Tanker Owners Voluntary Agreement Concerning Liability for Oil Pollution.	USN	U.S. Navy
TVA	Tennessee Valley Authority.	USPHS	U.S. Public Health Service.
UKAEA	United Kingdom Atomic Energy Agency.	VIMS	Virginia Institute of Marine Sciences.
UN	United Nations.	WAMIS	Water Management Information System.
UNTAF	United Nations Technical Assistance Fellowship.	WHO	World Health Organization.
UPI	United Press International.	WHOI	Woods Hole Oceanographic Institute.
		WMO	World Meteorological Organization.
		WPCF	Water Pollution Control Federation, Washington, D.C.
		WQO	Water Quality Office (EPA).