Research and Development

EPA-600/D-83-046 May 1983



# ORD Publications Announcement

## Jan. Feb. Mar. Apr. 1983

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The following pages list titles of publications that are available. Project Summaries are subdivided by subject area. Publications announced for the first time are displayed in bold type. To order any publication, circle the correspond-

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## **Announcement for Publication Material**

### Project Summaries

#### **Environmental Health Effects Research**

- 10057 Recreational Water Quality and Health (EPA-600/S1-81-059)
- 10058 Respiratory Carcinogenicity of Diesel Fuel Emissions (EPA-600/ S1-81-054)
- 10059 Sewage Sludge Pathogen Transport Model Project (EPA-600/S1-81-049)
- 10060 Study of Chlorine Dioxide and Its Metabolites in Man (EPA-600/S1-81-068)
- 10061 Studies in Children Exposed to Low Levels of Lead (EPA-600/S1-81-066)
- 10062 Health Implications of Coal Related Energy Development: Mining Impacts (EPA-600/S1-81-060)
- 10063 Evaluation of the Tentative Standard Method for Enteric Virus Concentration and Detection (EPA-600/S1-81-061)
- 10064 Organic and Organotin Compounds Leached from PVC and CPVC Pipe (EPA-600/S1-81-062)
- 10065 Mechanisms of Cadmium Absorption in Rats (EPA-600/S1-81-063)
- 10066 Community Health Associated with Arsenic in Drinking Water in Millard County, Utah (EPA-600/S1-81-064)
- 10067 Determination of the Effects of Material from Alternate Energy Sources on the Upper Respiratory Tract Clearance Mechanism: Part I and Part II (EPA-600/S1-81-067)
- 10068 Development and Evaluation of an Ambient Viable Microbial Air Sampler (EPA-600/S1-81-069)
- 10069 Effects of Short-Term Intermittent Air Pollutants on Incidence and Severity of Acute Respiratory Disease: Data Collection and Quality Assurance (EPA-600/S1-81-065)
- 10070 Chronic Toxicity of Lead and Cadmium III. Effects of Chronic Intoxication on the Reproductive Function of the F<sub>1</sub> Generation and on the Central Nervous System of the F<sub>2</sub> Generation of Rats (EPA-600/S1-82-006)
- 10071 Toxicology of Pesticides (EPA-600/S1-82-001)
- 10072 Short-Term Screening Test for Quick Responses to Pollutants Where Health Effects Data are Lacking (EPA-600/S1-82-004)
- 10073 Effects of Selected Organic Drinking Water Contaminants on Male Reproduction (EPA-600/S1-82-009)
- 10074 Pulmonary Function and Bronchial Reactivity in Human Subjects with Exposure to Ozone and Respirable Sulfuric Acid Aerosol: An Environmental Chamber Study (EPA-600/S1-82-012)
- 10075 Effects of Heavy Metals on the Differentiation of Metabolic Pathways in the CNS (EPA-600/S1-82-008)

- 10076 Speciation of Arsenic Compounds in Water Supplies (EPA-600/S1-82-010)
- 10077 Cross Transmission of Giardia (EPA-600/S1-82-013)
- 10078 Effects of 200, 591 and 2450 MHz Microwaves on Cerebral Energy Metabolism (EPA-600/S1-82-014)
- 10079 Human Epithelial Cell Activation Systems (EPA-600/S1-82-015)
- 10080 Giardiasis in Washington State (EPA-600/S1-82-016)
- 10081 Potential Human Study Populations for Non-Ionizing (Radic Frequency) Radiation Health Effects (EPA-600/S1-82-017)
- 10082 An Evaluation of the Adsorption Properties of Silicalite for Potential Application to Isolating Low-Molecular-Weight Organics from Drinking Water (EPA-600/S1-83-001)
- 10083 Development of a Model of Toluene Blood Level Following Subcutaneous Injection of Toluene in the Rat (EPA-600/S1-83-002)

#### **Environmental Protection Technology**

- 20129 Performance Testing of the Soviet Oil/Debris Skimmer (EPA-600/S2-81-154)
- 20130 Inorganic Contaminant Removal from Drinking Water by Reverse Osmosis (EPA-600/S2-81-115)
- 20131 Group Treatment Evaluation for Metal Finishers (EPA-600/S2-81-143)
- 20132 Field Investigation of Contaminant Loss from Chemically Stabilized Industrial Sludges (EPA-600/S2-81-163)
- 20133 Critical Factors Controlling Vegetation Growth on Completed Sanitary Landfills (EPA-600/S2-81-164)
- 20134 Parallel Evaluation of Air- and Oxygen-Activated Sludge (EPA-600/S2-81-155)
- 20135 Characterizing Baghouse Performance to Control Asbestos Manufacturing Source Emissions (EPA-600/S2-81-126)
- 20136 Demonstration of Zinc Cyanide Recovery Using Reverse Osmosis and Evaporation (EPA-600/S2-81-132)
- 20137 Treatment of Metal Finishing Wastes by Use of Ferrous Sulfide (EPA-600/S2-81-142)
- 20138 Nickel Recovery from Electroplating Rinsewaters by Electrodialysis (EPA-600/S2-81-130)
- O139 Assessment of Emerging Technologies for Metal Finishing Pollution Control: Three Case Studies (EPA-600/S2-81-153)
- 20140 Evaluation of Solvent Loss from Vapor Degreaser Systems Phases 2 and 3: Effect of Crosscurrent Air Velocity on Control System Performance (EPA-600/S2-81-072)
- 20141 Small Size-Range Extension of an Optical Particle Counter (EPA-600/S2-81-144)

20142	Monitoring Techniques for Carbon Fiber Emissions: Evaluation B (EPA-600/S2-81-145)	20169	Data Base for Influent Heavy Metals in Publicly Owned Treatment Works (EPA-600/S2-81-220)					
₹0143	Design Optimization of the Chlorination Process: Volume 1. Comparison of Optimized Pilot System with Existing Full-Scale Systems (EPA-600/S2-81-167).	20170	Parasites in Southern Sludges and Disinfection by Standard Sludge Treatment (EPA-600/S2-81-166)					
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20157	Density Levels of Pathogenic Organisms in Municipal Wastewater Sludge—A Literature Review (EPA-600/S2-81-170)	20184	A Stress Function for Evaluation Strategies for Water Quality Management (EPA-600/S2-81-217)					
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20161	Densification of Refuse-Derived Fuels: Preparation, Properties and Systems for Small Communities (EPA-600/S2-81-188)	20189	·					
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- 20221 Livestock and the Environment: A Bibliography with Abstracts—Volume VII (EPA-600/S2-81-225)
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20270	Nonvolatile Organics in Disinfected Wastewater Effluents: Chemical Characterization and Mutagenicity (EPA-600/S2-82- 017)	20297	Acid Rain Mitigation Study: Volumes I and II. (EPA-600/S2-82-070)				
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20313	Advanced Biological Treatment of Municipal Wastewater Through Aquaculture (EPA-600/S2-83-007)	30044	In Situ Aerodynamic Sizing of Aerosol Particles with the SPART Analyzer (EPA-600/S3-82-009)				
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20315	Multiple Water Reuse in Poultry Processing: Case Study in Egypt (EPA-600/S2-83-005)	30046	Feasibility of Developing Source Sampling Methods for Asbestos Emissions (EPA-600/S3-82-008)				
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20318	Effects of Livestock Pasturing on Nonpoint Runoff Surface (EPA-600/S2-83-011)	30049	Outdoor Smog Chamber Experiments to Test Photochemical				
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20321	Petroleum Pipeline Leak Detection Study (EPA-600/S2-82-040)	30052	Meteorology and Air Quality Patterns in St. Louis RAPS Program— Upper Level Analyses (EPA-600/S3-82-056)				
20322	Drinking Water Cost Equations (EPA-600/S2-82-055)	30053	Smog Chamber Experiments to Test Oxidant-Related Control Strategy Issues (EPA-600/S3-82-014)				
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30032	Influence of Diet and Starvation on Toxicity of Endrin to Fathead Minnows ( <i>Pimephales promelas</i> ) (EPA-600/S3-81-048)	30060	Application of Water Quality Models to a Small Forested Watershed: 1. The Nondesignated 208 Area Screening Model				
30033	Nutritional Requirements of Marine Larval and Juvenile Fish (EPA-600/S3-81-049)		(EPA-600/S3-82-029)  Feasibility of Developing a Comprehensive Methodology for Source Identification and Environmental Loading (Materials				
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30062	2 An Experimental Study of Turbulence in an Urban Environment (EPA-600/S3-82-062)		Photosynthesis and Respiration Rates in the Monticello Experimental Streams: 1976/77 Diel Field Data and Computed Results (EPA-600/S3-82-065)				
30063	Trace Chemicals in the "Clean" Troposphere (EPA-600/S3-81-055)	30088	An Assessment of Wind Characteristics and Wind Energy				
30064	Conservation Tillage and Conventional Tillage: A Comparative Assessment (EPA-600/S3-82-027)		Conversion Systems for Electric Utilities: Wisconsin Power Plant Impact Study (EPA-600/S3-82-066)				
30065	Evaluation of Four Urban-Scale Photochemical Air Quality Simulation Models (EPA-600/S3-82-043)	30089	Impact of Air Pollution on Vegetation near the Columbia Generating Station: Wisconsin Power Plant Impact Study (EPA-600/S3-82-068)				
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30067	Fate and Biological Effects of Oil Well Drilling Fluids in the Marine Environment: A Literature Review (EPA-600/S3-82-064)	30091	Impact of a Once Through Cooling System on the Yellow Perch Stock in the Western Basin of Lake Erie (EPA-600/S3-82-072)				
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30070	Petroleum Contamination: Quantification and Passive Tagging in Organisms and Sediments (EPA-600/S3-82-012)	30094	The Characterization of the Chesapeake Bay: A Systematic Analysis of Toxic Trace Elements (EPA-600/S3-82-085)				
30071	Modeling the Fate of Toxic Organic Materials in Aquatic Environments (EPA-600/S3-82-028)	30095	Analytical Solutions of a Gradient-Transfer Model for Plume Deposition and Sedimentation (EPA-600/S3-82-079)				
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30073	Executive Summary for the Hydrological Simulation Program FORTRAN (HSPF) (EPA-600/S3-82-046)	30097	Organization and Adaptation of Aquatic Laboratory Ecosystems Exposed to the Pesticide Dieldrin (EPA-600/S3-82-050)				
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- 30111 Causes of Papillomas on Fish Living in Chlorinated Sewage Effluent (EPA-600/S3-82-087)
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- 30113 Development of a Carcinogen Assay System Utilizing Estuarine Fishes (EPA-600/S3-82-091)
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- 30118 Experiments and Experiences in Biomanipulation—Studies of Biological Ways to Reduce Algal Abundance and Eliminate Blue-Greens (EPA-600/S3-82-096)
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- 30121 Atmospheric Chemistry of Several Toxic Compounds (EPA-600/S3-82-092)

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- 40026 Determination of Phthalates in Industrial and Municipal Wastewaters (EPA-600/S4-81-063)
- 40027 Determination of Haloethers in Industrial and Municipal Wastewaters (EPA-600/S4-81-062)
- 40029 Impact of Topographic Circulations on the Transport and Dispersion of Air Pollutants (EPA-600/S4-81-068)
- 40030 Carbon Monoxide Commuter Exposure Data Base: A 5-Day Study in Los Angeles (EPA-600/S4-81-069)
- 40031 Long-Range Transport and Transformation of SO<sub>2</sub> and Sulfate: Refinement, Application and Verification of Models (EPA-600/ S4-81-070)
- 40032 Air Quality Data for Nonmetallic Inorganic Ions: Nitrate and Sulfate for 1977 and 1978 from the National Air Surveillance Networks (EPA-600/S4-81-074)
- 40034 Analysis of Commercial Cylinder Gases of Nitric Oxide, Sulfur Dioxide, and Carbon Monoxide at Source Concentrations—Results of Audit 5 (EPA-600/S4-81-080)
- 40035 Development of Analytical Test Procedures for Organic Pollutants in Wastewater—Application to Pesticides (EPA-600/S4-81-017)
- 40036 Technical Assistance Document for the Calibration and Operation of Automated Ambient Non-Methane Organic Compound Analyzers (EPA-600/S4-81-015)
- 40037 Polynuclear Aromatic Hydrocarbons and Cellular Proliferative Disorders in Bivalve Molluscs from Oregon Estuarines (EPA-600/S4-82-026)
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- 40057 A Comparative Evaluation of Seven Automated Ambient Non-Methane Organic Compound Analyzers (EPA-600/S4-82-046)
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- 40063 Method Development for Determination of Polychlorinated Hydrocarbons in Municipal Sludge (EPA-600/S4-82-035)
- 40064 Quality Assurance in Support of Energy Related Monitoring Activities: Annual Report Number 3 (EPA-600/S4-82-036)
- 40065 Quality Assurance in Support of Energy Related Monitoring Activities: Final Report (EPA-600/S4-82-037)
- 40066 A Microprocessor ASCII Character Buffering System (EPA-600/ S4-82-051)
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- 40072 Techniques to Measure Volumetric Flow and Particulate Concentrations in Stacks with Cyclonic Flow (EPA-600/S4-82-062)
- 40073 Correlations Between Age-Adjusted Mortality Rates for White Males and Females in the United States, by County: 1968-1972 (EPA-600/S4-80-026)
- 40074 The National Air Pollution Background Network: 1976-1980 (EPA-600/S4-82-058)
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- 40076 Stability of Organic Audit Materials and Results of Source Test Analysis Audits (EPA-600/S4-82-064)
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- 40079 Analysis of Chlorinated Organic Compounds Formed During Chlorination of Wastewater Products (EPA-600/S4-82-072)
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- 70074 Control of Hydrocarbon Emissions from Gasoline Loading by Refrigeration Systems (EPA-600/S7-81-121)
- 70075 Photoacoustic Detection of Particulate Carbon (EPA-600/S7-81-129)
- 70076 Final Report on the Workshop on Energy Development Issues Affecting Appalachia (EPA-600/S7-81-130)
- 70077 Coal Resources and Sulfur Emissions Regulations: A Summary of Eight Eastern and Midwestern States (EPA-600/S7-81-086)
- 70078 Executive Summary for Power Plant Cooling System Water Consumption and Nonwater Impact Reports (EPA-600/S7-81-112)
- 70079 Field Studies on Paraho Retorted Oil Shale Lysimeters: Leachate, Vegetation, Moisture, Salinity and Runoff, 1977-1980 (EPA-600/S7-81-131)
- 70080 Energy Use Patterns and Environmental Implications of Direct-Fired Industrial Processes (EPA-600/S7-81-132)
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- 70088 Environmental Assessment: Source Test and Evaluation Report— Coal Preparation Plant No. 1 (EPA-600/S7-81-071a)
- 70089 Field Studies on USBM and TOSCO II Retorted Oil Shales: Vegetation, Moisture, Salinity and Runoff, 1977-1978 (EPA-600/S7-81-139)
- 70090 Pilot Field Studies of FGD Waste Disposal at Louisville Gas and Electric (EPA-600/S7-81-155)
- 70091 Electric Rates and Boiler Fuel Choice (EPA-600/S7-81-157)
- 70092 Bioassay and Chemical Analysis for Hazardous Materials in Residual Oils (EPA-600/S7-81-080)
- 70093 Emissions Assessment of Conventional Stationary Combustion Systems: Summary Report (EPA-600/S7-81-003d)
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- 70099 Control of Particulate Emissions from Atmospheric Fluidized-Bed Combustion with Fabric Filters and Electrostatic Precipitators (EPA-600/7-81-105)
- 70100 Emissions and Efficiency Performance of Industrial Coal-Stoker-Fired Boilers (EPA-600/S7-81-111)
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- 70102 Evaluation of the Limestone Dual Alkali Prototype System at Plant Scholz: Final Report (EPA-600/S7-81-141b)
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- 70105 EPA Utility FGD Survey April June 1981 (EPA-600/S7-81-012d)
- 70106 Environmental Assessment: Source Test and Evaluation Report— Coal Preparation Plant No. 2 (EPA-600/S7-81-071b)
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- 70109 Performance of a High-Velocity Pulse-Jet Filter, III (EPA-600/S7-81-027)
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- 70112 Measurement of High-Temperature High-Pressure Processes—A Summary Report (EPA-600/S7-82-009)
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- 70121 Effect of Emission Control Requirements on Fluidized-Bed Boilers for Industrial Applications: Preliminary Technical / Economic Assessment (EPA-600/S7-81-149)
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- 70123 Harrington Station Unit 2 Fabric Filter System Special Testing Report (EPA-600/S7-81-168)

- 70124 Dry/Wet Performance of a Plate-Fin Air-Cooled Heat Exchanger with Continuous Corrugated Fins (EPA-600/S7-82-014)
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- 70127 Sampling for High-Molecular-Weight Organic Compounds in Power Plant Stack Gases (EPA-600/S7-82-039)
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- 70150 Sampling and Data Handling Methods for Inhalable Particulate Sampling (EPA-600/S7-82-036)
- 70151 Environmental Assessment of a Low-Emission Oil-Fired Residential Hot Water Condensing Heating System (EPA-600/S7-82-038)
- 70152 Laboratory Evaluation of Level 1 Organic Analysis Procedures (EPA-600/S7-82-048)
- 70153 Evaluation of the Maintenance Effect on Fugitive Emissions from Refineries in the South Coast Air Quality Management District (EPA-600/S7-82-049)
- 70154 Further Characterization of Sorbents for Environmental Sampling—II (EPA-600/S7-82-052)
- 70155 Environmental Assessment of Stationary Source NO<sub>x</sub> Control Technologies: Final Report (EPA-600/S7-82-034)
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- 70157 Rates and Equilibria of Devolatilization and Trace Element Evolution in Coal Pyrolysis (EPA-600/S7-82-027)
- 70158 Green River Air Quality Model Development Meteorological Data—August 1980 Field Study in the Piceance Creek Basin Oil Shale Resources Area (EPA-600/S7-82-047)
- 70159 Effects of Fuel Properties and Atomization Parameters on NO<sub>x</sub> Control for Heavy Liquid Fuel Fired Package Boilers (EPA-600/ S7-82-029)
- 70160 Studies of Flue Gas Desulfurization at Louisville Gas and Electric's Paddy's Run Station (EPA-600/S7-82-032)
- 70161 Prospects for Increasing the Direct Use of Coal in Industrial Boilers (EPA-600/S7-82-046)
- 70162 Waste Heat Recovery Potential in Selected Industries (EPA-600/S7-82-030)
- 70163 Coal Gasification/Gas Cleanup Test Facility: Volume III. Environmental Assessment of Operation with New Mexico Subbituminous Coal and Chilled Methanol (EPA-600/S7-82-054)
- 70164 Verification and Transfer of Thermal Pollution Models (EPA-600/S7-82-037)
- 70165 Application of LIMB to Pulverized Coal Boilers—A Systems Analysis. Limestone Feed and Boiler Systems (EPA-600/S7-82-059)
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- 70173 Hitachi Zosen NO<sub>x</sub> Flue Gas Treatment Process: Volume 1. Pilot Plant Evaluation (EPA-600/S7-82-057a)

- 70174 Hitachi Zosen NO<sub>x</sub> Flue Gas Treatment Process: Volume 2. Independent Evaluation (EPA-600/S7-82-057b)
- 70175 Shell NO<sub>x</sub>/SO<sub>2</sub> Flue Gas Treatment Process: Independent Evaluation (EPA-600/S7-82-064)
- 70176 Photovoltaic Energy Systems: Environmental Concerns and Control Technology Needs (EPA-600/S7-82-066)
- 70177 The Adipic Acid Enhanced Flue Gas Desulfurization Process for Industrial Boilers: Volume 1. Field Test Results (EPA-600/S7-82-065a)
- 70178 Effect of Trace Metals and Sulfite Oxidation on Adipic Acid Degradation in FGD Systems (EPA-600/S7-82-067)
- 70179 Trace and Potentially Toxic Elements Associated with Uranium Deposits in South Texas (EPA-600/S7-83-005)
- 70180 Survey and Analysis of Current European Technologies for Wood Combustion (EPA-600/S7-83-006)
- 70181 Estimates of Sulfur Oxide Emissions from the Electric Utility Industry: Volume I and Volume II (EPA-600/S7-82-061)
- 70182 Waste and Water Management for Conventional Coal Combustion: Assessment Report—1980 (EPA-60/S7-83-007)
- 70183 Disposal of Spent Sorbent from Dry FGD Processes (EPA-600/S7-83-009)
- 70184 Electrostatic Augmentation of Fabric Filtration: Pulse-Jet Pilot Unit Experience (EPA-600/S7-82-062)
- 70185 An Assessment of the Effects of Active Solar Thermal Technologies on Urban Emissions (EPA-600/S7-83-008)
- 70186 Thirty-Day Field Test of a Refinery Process Heater Equipped with Low-NO<sub>x</sub> Burners (EPA-600/S7-83-010)
- 70187 Analysis of Long-Term NO Emission Data from Pulverized Coal-Fired Utility Boilers (EPA-600/S7-83-012)
- 70188 Preliminary Assessment of the Use of Heat Transfer Fluids for Solar Thermal Energy Systems (EPA-600/S7-83-021)

#### "Special" Project Summaries

- 80009 Limestone FGD Scrubbers: User's Handbook (EPA-600/S8-81-017)
- 80010 Assessment of Future Environmental Trends and Problems: Industrial Use of Applied Genetics and Biotechnologies (EPA-600/S8-81-020)
- 80011 Reactive Plume Model—RPM II: User's Guide (EPA-600/\$8-81-021)
- 80012 Environmental Implications of Changes in the Brominated Chemicals Industry (EPA-600/S8-82-020)
- 80013 Distribution and Abundance of Submerged Aquatic Vegetation in the Lower Chesapeake Bay, Virginia (EPA-600/S8-79-029)
- 80014 Assessment of Future Environmental Trends and Problems of Increased Use, Recycling, and Combustion of Fiber-Reinforced, Plastic and Metal Composite Materials (EPA-600/ S8-82-019)
- 80015 IERL-RTP Procedures Manual: Level I Environmental Assessment Biological Tests (EPA-600/S8-81-024)
- 80016 CHAVG—A Program for Computing Averages of Hourly Air Pollutant Concentrations: User's Guide (EPA-600/S8-82-015)
- 80017 PAL-DS Model: The PAL Model Including Deposition and Sedimentation—User's Guide (EPA-600/S8-82-023)
- 80018 MPTER-DS: The MPTER Model Including Deposition and Sedimentation—User's Guide (EPA-600/S8-82-024)
- 80019 Engineering Design Manual for Solid Waste Size Reduction Equipment (EPA-600/S8-82-028)

#### **Miscellaneous Project Summaries**

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90017	Proceedings: Symposium on Iron and Steel Pollution Abatement Technology for 1980 (EPA-600/S9-81-017)
90018	Environmental Regulations and Technology: The Dry Cleaning Industry (EPA-625/S10-81-002)
90019	Symposium Proceedings: Environmental Aspects of Fuel Conversion Technology, V (Sept. 1980, St. Louis, MO) (EPA-600/S9-81-006)
90020	Proceedings: Symposium on Flue Gas Desulfurization—Houston, October 1980 (EPA-600/S9-81-019)
90023	Proceedings: Second Symposium on Process Measurements for Environmental Assessment. February 25-27, 1980 (EPA-600/S9-81-018)
90024	Mini-Assessment of Environmental Trends and Problems: Alternative Feedstocks (EPA-600/S9-82-010)
90025	Proceedings: Third Conference on Waste Heat Management and Utilization (May 1981, Miami Beach, FL) (EPA-600/S9-82-008)
90026	Proceedings: EPA's Industry Briefing on the Adipic Acid Enhanced Limestone FGD Process (July 1981) (EPA-600/S9-82-012)
90027	Nineteenth Century Technology—Twentieth Century Problems: A Retrospective Mini-Assessment (EPA-600/S9-82-011)
90028	Proceedings of the Conference on Combined Municipal/Industrial Wastewater Treatment (EPA-600/S9-81-021)
90029	Proceedings: Symposium on Environmental Aspects of Fuel Conversion Technology—VI, A Symposium on Coal-Based Synfuels—October 1981 (EPA-600/S9-82-017)
90030	Fourth Conference on Advanced Pollution Control for the Metal Finishing Industry (Proceedings) (EPA-60/S9-82-022)
90031	Proceedings: Symposium on Iron and Steel Pollution Abatement Technology for 1981 (FPA-600/S9-82-021)

90032 Proceedings of the Fifth Fundamental Combustion Research Contractors Workshop (EPA-600/S9-83-001)

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