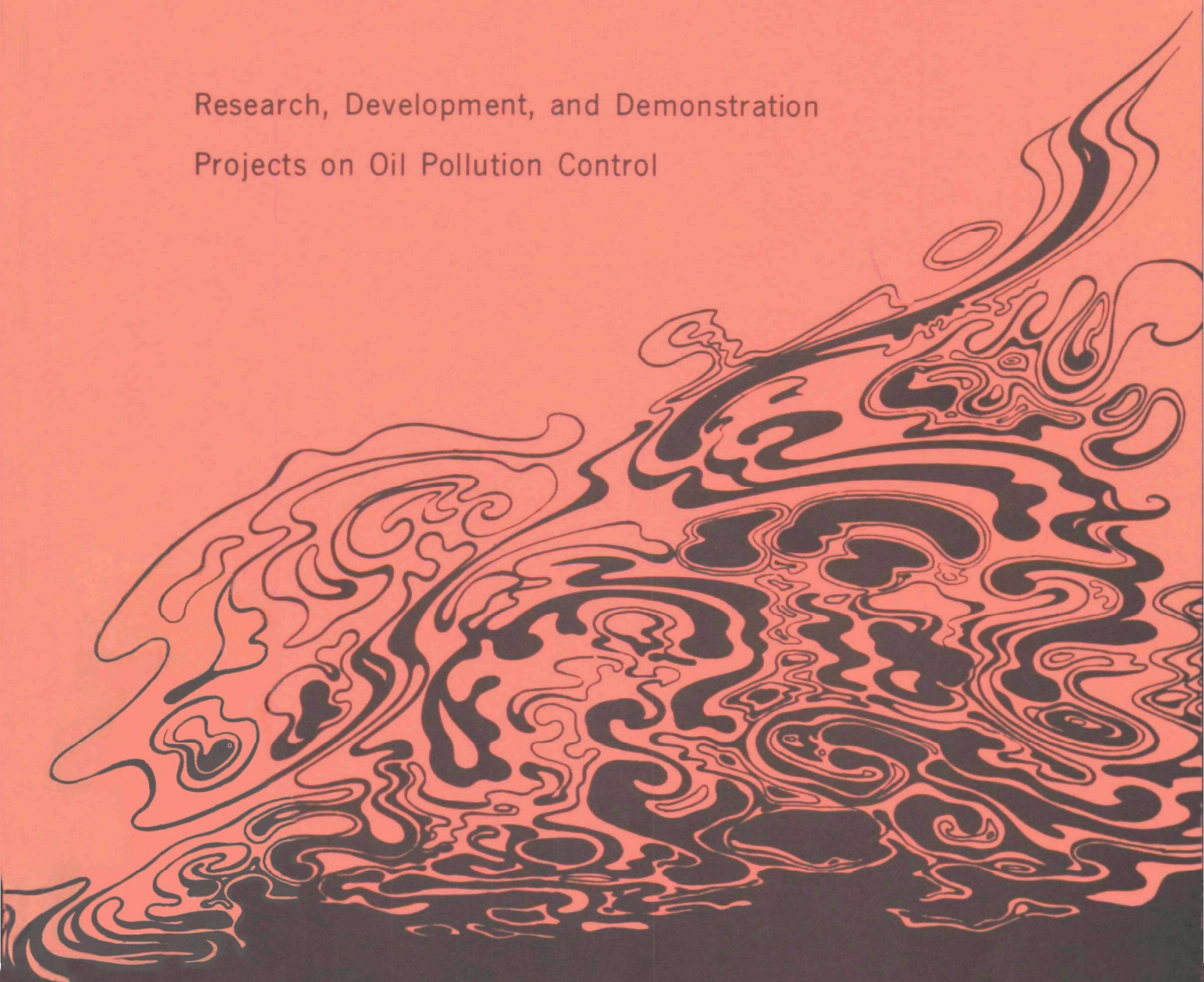


OIL & HAZARDOUS MATERIALS RESEARCH NEWSLETTER

SUPPLEMENT NO. 1

Research, Development, and Demonstration
Projects on Oil Pollution Control



RESEARCH, DEVELOPMENT, AND DEMONSTRATION
PROJECTS ON OIL POLLUTION CONTROL

Compiled by

Oil and Hazardous Materials Research Section
Edison Water Quality Laboratory
Edison, New Jersey 08817

for the

FEDERAL WATER QUALITY ADMINISTRATION
U. S. DEPARTMENT OF THE INTERIOR

INTRODUCTION

Under the provisions of the Federal Water Pollution Control Act, as amended, the Federal Water Quality Administration is authorized to conduct basic and applied research, development and demonstration activities. These activities may be completed through the in-house effort of FWQA laboratories, or they may be accomplished through the funding and sponsorship of grant and contract programs.

The purpose of this document is to provide an alphabetical listing of the on-going and completed oil pollution control grant and contract projects issued by the Federal Water Quality Administration. A brief description of each project is given along with the grantee's or contractor's name, project number and title, project director, FWQA project officer, federal funds committed to the project, and project duration.

For more detailed information concerning on-going oil pollution control projects, please contact one of the following:

1. FWQA Project Officer
or
2. Oil & Hazardous Materials Research Section
Edison Water Quality Laboratory
Edison, New Jersey 08817
or
3. Project Coordination
Office of Research and Development
Federal Water Quality Administration
Washington, D. C. 20242

Requests for final reports of completed projects should be sent to:

Planning and Resources Office
Office of Research and Development
Federal Water Quality Administration
Washington, D. C. 20242

This report listing oil pollution control research, development and demonstration projects is another means we in FWQA are trying to keep interested parties informed as to our progress and endeavors in combating pollution caused by oil spills.

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SECTION I

ON-GOING OIL POLLUTION CONTROL RESEARCH, DEVELOPMENT AND
DEMONSTRATION PROJECTS

CONTRACTOR : American Process Equipment Corporation
10826 Venice Boulevard
Culver City, California 90230

PROJECT DIRECTOR: Robert Rod

TITLE OF PROJECT: "Hydrocyclonic System for Separating Oil
From Sea Water"

PROJECT NUMBER : 15080 EUU PROJECT SITE : Culver City,
California

AWARD DATE : March 20, 1970 PROJECT COSTS: \$78,870

DURATION : 7 months FEDERAL COSTS: \$78,870

FWQA PROJECT OFFICER: Edmund Lomansey
Southeast Region
1421 Peachtree Street, N.E., Suite 300
Atlanta, Georgia 30309

DESCRIPTION OF PROJECT:

Design, construct and test an oil-water separator which employs a cyclone concept to separate un-emulsified oil-water mixtures. The project will be broken into two phases — laboratory evaluation of a 50 gpm unit, and field demonstration.

CONTRACTOR : Atlantic Research Corporation
Missile Systems Division
Costa Mesa, California 92626

PROJECT DIRECTOR: S. T. Uyeda

TITLE OF PROJECT: "Recovery of Floating Oil — Rotating
Disk Type Skimmer"

PROJECT NUMBER : 15080 FWN PROJECT SITE : Costa Mesa,
California

AWARD DATE : June 3, 1970 PROJECT COSTS: \$69,548

DURATION : 5 months FEDERAL COSTS: \$69,548

FWQA PROJECT OFFICER: Gerald Stern
4255 Corona Drive
Los Angeles, California 90009

DESCRIPTION OF PROJECT:

Concept development studies on a self-contained oil harvesting device employing a series of rotating disks. Design variables to be investigated at model scale include disk material, shape, spacing, velocity of rotation, and depth of immersion.

GRANTEE : Battelle Memorial Institute
Pacific Northwest Laboratories
P. O. Box 999
Richland, Washington 99352

PROJECT DIRECTOR: Paul C. Walkup

TITLE OF PROJECT: "Investigation of Recovery of Large Marine
Oil Spills by Use of a Vortex Assisted Air
Lift System"

PROJECT NUMBER : 15080 DJM PROJECT SITE : Richland,
Washington

AWARD DATE : April 28, 1969 PROJECT COSTS: \$38,800

DURATION : 13 months FEDERAL COSTS: \$29,840

FWQA PROJECT OFFICER: Jerry Willmann
Room 570, Pittock Block
Portland, Oregon 97205

DESCRIPTION OF PROJECT:

Delineate an optimum system which utilizes a vortex generator and a high capacity air lift system with an adjustable suction nozzle for pickup of spilled oil from the water surface. Performance of the system will be evaluated by prototype tests under simulated at-sea conditions.

CONTRACTOR : Battelle Memorial Institute
Pacific Northwest Laboratories
P. O. Box 999
Richland, Washington 99352

PROJECT DIRECTOR: Paul C. Walkup

TITLE OF PROJECT: "Concept Development of a Hydraulic Skimmer
System for Recovery of Floating Oil"

PROJECT NUMBER : 15080 FWP PROJECT SITE : Richland,
Washington

AWARD DATE : May 15, 1970 PROJECT COSTS: \$86,035

DURATION : 12 months FEDERAL COSTS: \$86,035

FWQA PROJECT OFFICER: Ralph Rhodes
Chief, Marine Pollution Control Section
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

Design fabrication and full-scale testing of an oil harvesting system employing water-jet sweeps, skimming, and primary oil-water separation. Phase I will be limited to design and fabrication of sub-assemblies, and testing of one of the two units required per vessel in a closed basin.

CONTRACTOR : Battelle Memorial Institute
Pacific Northwest Laboratories
P. O. Box 999
Richland, Washington 99352

PROJECT DIRECTOR: Ward H. Swift

TITLE OF PROJECT: "Study of Control of Spillage of Hazardous
Pollution Substances"

PROJECT NUMBER : 15080 FOZ PROJECT SITE : Richland,
Washington

AWARD DATE : April 17, 1970 PROJECT COSTS: \$51,000

DURATION : 8 months FEDERAL COSTS: \$51,000

FWQA PROJECT OFFICER: Paul Heitzenreiter
Agricultural & Marine Pollution Control
Branch
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

A study to evaluate the causes, effects, and existing methods of mitigating the effects of spills of hazardous polluting substances and a program to develop effective means for coping with these incidents.

Specific areas to be included in this study are:

Classification of hazardous substances, an analysis of potential for hazardous materials spills, evaluation of effectiveness of existing contingency plans, evaluation of restoration methods, application of existing technology to detection control and treatment, and recommendations for programs to develop new technology.

GRANTEE : City of Buffalo
65 North Niagara Street
Buffalo, New York 14202

PROJECT DIRECTOR: John Downing

TITLE OF PROJECT: "Proposed Program for Preventing and Eliminating Oil Pollution from the Buffalo River"

PROJECT NUMBER : 11020 DJG PROJECT SITE : Buffalo,
New York

AWARD DATE : July 28, 1968 PROJECT COSTS: \$737,194

DURATION : 27 months FEDERAL COSTS: \$552,895

FWQA PROJECT OFFICER: Richard Keppler
John F. Kennedy Bldg., Room 2303
Boston, Massachusetts 02203

DESCRIPTION OF PROJECT:

Develop, utilize, and evaluate equipment and techniques for containing and removing oil in the Buffalo River, which is heavily polluted with oil due to the large number of industries located on it and to the sanitary/storm sewers which discharge into it. These methods will not interfere with the navigation of large ships in the river.

This work will include utilization of pneumatic barriers for the containment of oil, as well as utilization of mechanical surface oil-boom systems, including the associated recovery equipment (skimmers).

GRANTEE : City of Cleveland
601 Lakeside Avenue
Cleveland, Ohio 44114

PROJECT DIRECTOR: Dr. Edward J. Martin

TITLE OF PROJECT: "Collection of Spilled Oil with the Aid
of Foams"

PROJECT NUMBER	: 15080 EHP	PROJECT SITE	: Cleveland, Ohio
AWARD DATE	: June 23, 1969	PROJECT COSTS:	\$98,300
DURATION	: 12 months	FEDERAL COSTS:	\$68,810

EWQA PROJECT OFFICER: Charles Risley
33 East Congress Parkway
Chicago, Illinois 60605

DESCRIPTION OF PROJECT:

This project, to be directed by the City of Cleveland and performed in part by Horizons Incorporated, will develop a device to collect spilled oil from the water surface. The device will include provisions for trapping the oil film in a foam, followed by collection and destruction of the oily foam.

A basic study of potential uses of "tramp oil" collected from the Cuyahoga River will also be carried out.

CONTRACTOR : Consultec, Inc.
2351 Research Boulevard
Rockville, Maryland 20850

PROJECT DIRECTOR: R. B. Dayton

TITLE OF PROJECT: "Concept for Recovery of Floating Oil"

PROJECT NUMBER	: 15080 FWM	PROJECT SITE	: Rockville, Maryland
AWARD DATE	: June 10, 1970	PROJECT COSTS:	\$32,075
DURATION	: 6 months	FEDERAL COSTS:	\$32,075

FWQA PROJECT OFFICER: Ralph Rhodes
Chief, Marine Pollution Control Section
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

Concept development studies on a device to harvest oil slicks based upon the use of a water permeable-oil impermeable filter bag. Studies will be limited to the evaluation of various filter bag designs and filter medias.

CONTRACTOR : Ecological Research Corporation
Hanover, New Hampshire 03755

PROJECT DIRECTOR: Dr. Robert C. Dean, Jr.

TITLE OF PROJECT: "A Mobile Washing System for In-Place
Restoration of Beaches Contaminated by
Oil"

PROJECT NUMBER : 15080 FIG PROJECT SITE : Hanover,
N. H.

AWARD DATE : March 25, 1970 PROJECT COSTS: \$41,382

DURATION : 10 months FEDERAL COSTS: \$41,382

FWQA PROJECT OFFICER: Richard Keppler
John F. Kennedy Bldg., Room 2303
Boston, Massachusetts 02203

DESCRIPTION OF PROJECT:

Design and test a pilot scale system for cleaning oil contaminated beach sand. The system includes a jet-washer and cyclones for oil-water-sand separation. The project is the first phase of a two-phase program to develop a compact mobile sand cleaning plant capable of processing 100 tons/hr. of oil-contaminated beach sand.

GRANTEE : Florida State University
Department of Oceanography
Tallahassee, Florida 32306

PROJECT DIRECTOR: Carl H. Oppenheimer

TITLE OF PROJECT: "Microbiological Seeding to Accelerate
Degradation of Hydrocarbons"

PROJECT NUMBER	: 15080 EHF	PROJECT SITE	: Tallahassee, Florida
AWARD DATE	: April 11, 1969	PROJECT COSTS:	\$118,460
DURATION	: 24 months	FEDERAL COSTS:	\$105,803

FWQA PROJECT OFFICER: Edmund Lomansey
Southeast Region
1421 Peachtree Street, N.E., Suite 300
Atlanta, Georgia 30309

DESCRIPTION OF PROJECT:

Techniques will be developed to accelerate the natural degradation process of oil in marine waters. Selected cultures of microorganisms, nutrient material, and additives to increase the oil surface area will be added to oil in the environment to increase the ratio of degradation of microbiological action.

GRANTEE : Garrett Corporation
Airesearch Manufacturing Company
9851-9951 Sepulveda Boulevard
Los Angeles, California 90009

PROJECT DIRECTOR: Dr. John L. Mason

TITLE OF PROJECT: "Oil-Water Separation System for Treatment
of Oil Wastes"

PROJECT NUMBER : 15080 DJP PROJECT SITE : Los Angeles,
California

AWARD DATE : April 18, 1969 PROJECT COSTS: \$123,402

DURATION : 13 months FEDERAL COSTS: \$123,402

FWQA PROJECT OFFICER: Gerald Stern
4255 Corona Drive
Los Angeles, California 90009

DESCRIPTION OF PROJECT:

The project will demonstrate the effectiveness of a high capacity, high efficiency centrifuge to separate oil-water mixtures collected by devices used to pick up spilled oil from the water surface. The centrifuge will be treated under conditions simulating those encountered in an oil spill cleanup operation at sea.

CONTRACTOR : JBF Scientific Corporation
Alpha Industrial Park
Chelmsford, Massachusetts 01824

PROJECT DIRECTOR: Ralph A. Bianchi

TITLE OF PROJECT: "The Development of a Submerged Hydro-
dynamic Oil Concentrator for the Recovery
of Floating Oil"

PROJECT NUMBER	: 15080 FWL	PROJECT SITE	: Chelmsford, Mass.
AWARD DATE	: May 25, 1970	PROJECT COSTS:	\$145,000
DURATION	: 12 months	FEDERAL COSTS:	\$145,000

FWQA PROJECT OFFICER: Thomas Devine
New England Basins Office
240 Highland Avenue
Needham Heights, Massachusetts 02194

DESCRIPTION OF PROJECT:

The project will involve the development and demonstration of a prototype scale mechanical harvesting device based upon a unique "submerged hydrodynamic oil concentrator".

The principle of the hydrodynamic oil concentrator involves forcing the surface oil to follow the submerged contour of an inclined plane so that the oil film is thickened. The thickened film is trapped in a well at the end of the inclined plane.

GRANTEE : Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, Massachusetts 02139

PROJECT DIRECTOR: Dr. David P. Hoult

TITLE OF PROJECT: "Containment and Collection of Oil in
Protected Waters"

PROJECT NUMBER	: 15080	PROJECT SITE	: Cambridge, Mass.
AWARD DATE	: Jan. 10, 1970	PROJECT COSTS:	\$150,000
DURATION	: 24 months	FEDERAL COSTS:	\$135,000

FWQA PROJECT OFFICER: Dr. Thomas Murphy
Edison Water Quality Laboratory
Edison, New Jersey 08817

DESCRIPTION OF PROJECT:

The project will involve completion of seven discrete studies to develop data on factors influencing oil movement and design criteria for booms and oil skimmers.

This project will include motion and spreading of oil slicks, localized boom motion, associated fluids movement, and forces and flexibility in booms.

CONTRACTOR : Melpar Incorporated
7700 Arlington Boulevard
Falls Church, Virginia 22046

PROJECT DIRECTOR: Dr. Thomas P. Meloy

TITLE OF PROJECT: "Application of Froth Flotation Separation
to Beach Restoration"

PROJECT NUMBER	: 15080 EOT	PROJECT SITE	: Dams Neck, Virginia
AWARD DATE	: Oct. 15, 1969	PROJECT COSTS:	\$304,168
DURATION	: 18 months	FEDERAL COSTS:	\$304,168

FWQA PROJECT OFFICER: Ralph Rhodes
Chief, Marine Pollution Control Section
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

Design, construct and demonstrate the operation of a 30 ton/hour capacity froth flotation plant adapted for use in separation of oil from contaminated beach sand. The plant is to be made up of commercially "off the shelf" components and will be readily assembled at the location of the cleanup operation.

CONTRACTOR : University of Miami
School of Marine & Atmospheric Sciences
10 Rickenbacker Causeway
Miami, Florida 33149

PROJECT DIRECTOR: Dr. Charles E. Lane

TITLE OF PROJECT: "Testing Oil Dispersant Toxicity and
Emulsion Efficiency"

PROJECT NUMBER	: 15080 GAV	PROJECT SITE	: Miami, Florida
AWARD DATE	: May 30, 1970	PROJECT COSTS:	\$10,007
DURATION	: 4 months	FEDERAL COSTS:	\$10,007

FWQA PROJECT OFFICER: Ira Wilder
Edison Water Quality Laboratory
Edison, New Jersey 08817

DESCRIPTION OF PROJECT:

The study will be one of four identical studies to determine reproducibility, cost and operational difficulties associated with tests developed by the Federal Water Quality Administration to measure oil dispersant toxicity and efficiency. Each contractor will measure comparative acute toxicity and effectiveness of four dispersants according to procedures supplied by FWQA.

GRANTEE : Microwave Sensor Systems
8050 E. Florence Avenue
Downey, California 90240

PROJECT DIRECTOR: J. C. Aukland

TITLE OF PROJECT: "Oil Pollution Detection by Microwave
Radiometry"

PROJECT NUMBER	: 15080 FOP	PROJECT SITE	: Downey, California
AWARD DATE	: June 2, 1970	PROJECT COSTS:	\$16,110
DURATION	: 12 months	FEDERAL COSTS:	\$11,277

FWQA PROJECT OFFICER: Ralph Rhodes
Chief, Marine Pollution Control Section
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

The project will demonstrate the application of microwave radiometry to the detection and measurement of thickness of oil slicks under visibility conditions which would limit visual observation and the effectiveness of other remote sensing techniques. A stationary monitor will be mounted at a location in a harbor subject to chronic oil pollution. Monitor output will be compared to data collected manually on slick type and thickness, and interfering environmental conditions such as wave action and changes in surface temperature.

CONTRACTOR : New England Aquarium
Central Wharf
Boston, Massachusetts 02110

PROJECT DIRECTOR: Dr. S. Fai Cheuk

TITLE OF PROJECT: "Testing Oil Dispersant Toxicity and
Emulsion Efficiency"

PROJECT NUMBER	: 15080 FXB	PROJECT SITE	: Boston, Mass.
AWARD DATE	: May 30, 1970	PROJECT COSTS:	\$11,200
DURATION	: 4 months	FEDERAL COSTS:	\$11,200

FWQA PROJECT OFFICER: Ira Wilder
Edison Water Quality Laboratory
Edison, New Jersey 08817

DESCRIPTION OF PROJECT:

The study will be one of four identical studies to determine reproducibility, cost and operational difficulties associated with tests developed by the Federal Water Quality Administration to measure oil dispersant toxicity and efficiency. Each contractor will measure comparative acute toxicity and effectiveness of four dispersants according to procedures supplied by FWQA.

CONTRACTOR : New Mexico State University
Physical Science Laboratory
Box 3548
Las Cruces, New Mexico 88001

PROJECT DIRECTOR: H. R. Gleyre

TITLE OF PROJECT: "Recovery of Floating Oil"

PROJECT NUMBER	: 15080 FWO	PROJECT SITE	: Las Cruces, New Mexico
AWARD DATE	: June 3, 1970	PROJECT COSTS:	\$157,058
DURATION	: 12 months	FEDERAL COSTS:	\$157,058

FWQA PROJECT OFFICER: Ralph Rhodes
Chief, Marine Pollution Control Section
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

Develop and demonstrate at 1/4 scale a mechanical oil recovery device which employs a combination of the principles: gravity weir, preferential wetting on a rotating belt, and vacuum suction. The demonstration will be performed in a closed test basin equipped to simulate the environmental conditions expected in actual use.

GRANTEE : Fire Department, City of New York
Municipal Building
New York, New York 10007

PROJECT DIRECTOR: Joseph F. Connor

TITLE OF PROJECT: "Comprehensive Oil Spill Control Program
for New York Harbor and Immediate Waters"

PROJECT NUMBER : 15080 FVP PROJECT SITE : New York,
New York

AWARD DATE : June 30, 1970 PROJECT COSTS: \$518,415

DURATION : 12 months FEDERAL COSTS: \$324,452

FWQA PROJECT OFFICER: Howard Lamp'l
Edison Water Quality Laboratory
Edison, New Jersey 08817

DESCRIPTION OF PROJECT:

The project will demonstrate a comprehensive full-scale program for coping with oil spills. The project will involve:

1. A thorough inventory and determination of the sources, fate and movement of oil spills in and near a major sea port — the New York Harbor.
2. Design analysis and evaluation of state-of-the-art devices and techniques for oil spill control.
3. Procurement of equipment, development of spill response plans and the evaluation of their effectiveness on actual "spills of opportunity" in the New York Harbor area.

CONTRACTOR : Pacific Engineering Laboratory
657 Howard Street
San Francisco, California 94105

PROJECT DIRECTOR: Robert A. Ryder

TITLE OF PROJECT: "Testing Oil Dispersant Toxicity and
Emulsion Efficiency"

PROJECT NUMBER	: 15080 GAV	PROJECT SITE	: San Francisco, California
AWARD DATE	: May 30, 1970	PROJECT COSTS:	\$16,830
DURATION	: 4 months	FEDERAL COSTS:	\$16,830

FWQA PROJECT OFFICER: Ira Wilder
Edison Water Quality Laboratory
Edison, New Jersey 08817

DESCRIPTION OF PROJECT:

The study will be one of four identical studies to determine reproducibility, cost and operational difficulties associated with tests developed by the Federal Water Quality Administration to measure oil dispersant toxicity and efficiency. Each contractor will measure comparative acute toxicity and effectiveness of four dispersants according to procedures supplied by FWQA.

CONTRACTOR : Rex Chainbelt, Inc.
4701 West Greenfield Avenue
West Milwaukee, Wisconsin 53214

PROJECT DIRECTOR: John Pernusch

TITLE OF PROJECT: "Development of a Concept for a Belt-type
Skimming Device for Recovering Floating Oil
From Water Surfaces"

PROJECT NUMBER	: 15080 GBJ	PROJECT SITE	: W. Milwaukee, Wisconsin
AWARD DATE	: June 3, 1970	PROJECT COSTS:	\$179,623
DURATION	: 12 months	FEDERAL COSTS:	\$179,623

FWQA PROJECT OFFICER: Ralph Rhodes
Chief, Marine Pollution Control Section
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

This project will develop fundamental design criteria for a belt-type oil harvesting device, fabricate an experimental prototype, test and evaluate this device under simulated environmental conditions.

CONTRACTOR : Reynolds Submarine Services Corporation
615 Southwest Second Avenue
Miami, Florida 33130

PROJECT DIRECTOR: Arthur L. Markel

TITLE OF PROJECT: "Voraxial Oil Separation System"

PROJECT NUMBER : 15080 EZK PROJECT SITE : Miami,
Florida

AWARD DATE : Nov. 5, 1969 PROJECT COSTS: \$88,982

DURATION : 7 months FEDERAL COSTS: \$88,982

FWQA PROJECT OFFICER: Edmund Lomansey
1421 Peachtree Street, N.E., Suite 300
Atlanta, Georgia 30309

DESCRIPTION OF PROJECT:

Design, construct and test at pilot scale (50 gpm) a high capacity oil-water separator device for separation of oil-water mixture collected by mechanical oil slick harvesting devices. Key features of the separator are high capacity with low power and space requirements.

GRANTEE : Sonics International, Inc.
7101 Carpenter Freeway
Dallas, Texas 75247

PROJECT DIRECTOR: Byron Dunn

TITLE OF PROJECT: "Demonstration of New Procedures for In-Place Beach Restoration"

PROJECT NUMBER : 15080 FXC PROJECT SITE : Dallas,
Texas

AWARD DATE : May 7, 1970 PROJECT COSTS: \$33,988

DURATION : 3 months FEDERAL COSTS: \$20,004

FWQA PROJECT OFFICER: George Putnicki
1114 Commerce Street
Dallas, Texas 75202

DESCRIPTION OF PROJECT:

To demonstrate and evaluate the use, effectiveness and cost of a device utilizing an ultrasonic energy concept to clean oil contaminated beach sands. Oiled sand introduced into the device will be subjected to ultrasonic energy which will cause the oil to be separated from the sand and float to a decanting chamber. Cleansed sand will settle and be returned to the beach.

CONTRACTOR : Syracuse University Research Corporation
Life Sciences Division
Syracuse, New York 13210

PROJECT DIRECTOR: Dr. Richard B. Moore

TITLE OF PROJECT: "Testing Oil Dispersant Toxicity and
Emulsion Efficiency"

PROJECT NUMBER	: 15080 FXA	PROJECT SITE	: Syracuse, New York
AWARD DATE	: May 30, 1970	PROJECT COSTS:	\$15,023
DURATION	: 4 months	FEDERAL COSTS:	\$15,023

FWQA PROJECT OFFICER: Ira Wilder
Edison Water Quality Laboratory
Edison, New Jersey 08817

DESCRIPTION OF PROJECT:

The study will be one of four identical studies to determine reproducibility, cost and operational difficulties associated with tests developed by the Federal Water Quality Administration to measure oil dispersant toxicity and efficiency. Each contractor will measure comparative acute toxicity and effectiveness of four dispersants according to procedures supplied by FWQA.

CONTRACTOR : TRW Scientific Corporation
One Space Park
Redondo Beach, California 09278

PROJECT DIRECTOR: D. J. Graham

TITLE OF PROJECT: "TRW Oil/Water Separation Device"

PROJECT NUMBER	: 15080 FTJ	PROJECT SITE	: Redondo Beach, California
AWARD DATE	: June 30, 1970	PROJECT COSTS:	\$42,000
DURATION	: 13 months	FEDERAL COSTS:	\$42,000

FWQA PROJECT OFFICER: Gerald L. Burke
Southwest Region
620 Central Avenue, Bldg. 2 C
Alameda, California 94501

DESCRIPTION OF PROJECT:

This project will perform an engineering evaluation of a surface tension oil harvesting device to determine its oil collection characteristics and potential as a practical unit for use on the open sea. This will be accomplished through the use of model tests employing actual oils of pollution concern and the extension of test results via appropriate scaling laws to predict full-scale prototype performance.

GRANTEE : Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

PROJECT DIRECTOR: Dr. Wyman Harrison

TITLE OF PROJECT: "Investigation of Surface Films —
Chesapeake Bay Entrance"

PROJECT NUMBER : 15080 EJO PROJECT SITE : Norfolk,
Virginia

AWARD DATE : June 1, 1969 PROJECT COSTS: \$57,652

DURATION : 12 months FEDERAL COSTS: \$49,652

FWQA PROJECT OFFICER: Russel H. Wyer
Oil & Hazardous Materials Division
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

Determine the influence of wind, wave and current regimes on the movement of oil films in the Chesapeake Bay Entrance and develop an empirical film movement equation based on these data.

Remote sensing techniques will be used to supplement surface slick tracing operations and to differentiate between naturally occurring oil films and mineral-oil slicks.

CONTRACTOR : Western Company
2201 Waterview Parkway
Richardson, Texas 75080

PROJECT DIRECTOR: Jerry L. Overfield

TITLE OF PROJECT: "In-Tank Gellation to Reduce Oil Loss
From Tankers"

PROJECT NUMBER : 15080 DJN PROJECT SITE : Richardson,
Texas

AWARD DATE : Feb. 20, 1969 PROJECT COSTS: \$230,674

DURATION : 20 months FEDERAL COSTS: \$230,674

FWQA PROJECT OFFICER: George Putnicki
1114 Commerce Street
Dallas, Texas 75202

DESCRIPTION OF PROJECT:

Development of a system to rapidly gel oil within a tanker compartment to reduce oil pollution incidents caused by leaking tankers. The systems to be considered will be designed for on-board and portable facilities to be transported to the point of use by watercraft or a large helicopter.

GRANTEE : Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

PROJECT DIRECTOR: Dr. Howard L. Sanders

TITLE OF PROJECT: "Biological Recovery Following an Oil
Spill"

PROJECT NUMBER	: 15080 FMW	PROJECT SITE	: Woods Hole, Mass.
AWARD DATE	: Jan. 21, 1970	PROJECT COSTS:	\$44,862
DURATION	: 12 months	FEDERAL COSTS:	\$31,404

FWQA PROJECT OFFICER: Dr. Thomas Murphy
Edison Water Quality Laboratory
Edison, New Jersey 08817

DESCRIPTION OF PROJECT:

Studies to be conducted will document the biological effects of a large spill of fuel oil in Buzzards Bay, Massachusetts. Patterns of recolonization and faunal change will be correlated with studies of the distribution, movement, and fate of oil in the sediments.

SECTION II

COMPLETED OIL POLLUTION CONTROL RESEARCH PROJECTS

CONTRACTOR : Aerojet General Corporation
Environmental Systems Division
9200 East Flair Drive
El Monte, California 91734

PROJECT DIRECTOR: R. M. Roberts

TITLE OF PROJECT: "Feasibility Analysis of Incinerator
Systems for Restoration of Oil-Contam-
inated Beaches"

PROJECT NUMBER : 15080 DXE PROJECT SITE : El Monte,
California

AWARD DATE : June 30, 1969 PROJECT COSTS: \$35,551

DURATION : 6 months FEDERAL COSTS: \$35,551

FWQA PROJECT OFFICER: Gerald L. Burke
620 Central Avenue
Alameda, California 94501

DESCRIPTION OF PROJECT:

Feasibility analysis of alternative combustion systems,
capable of total removal of oil contamination from beach
materials. The project will conclude with recommendation
concerning the technical and economic feasibility of
alternate processes.

WORK COMPLETED:

Final report approved and in press.

CONTRACTOR : Alpine Geophysical Associates, Inc.
Oak Street
Norwood, New Jersey 07648

PROJECT DIRECTOR: Jules Hirshman

TITLE OF PROJECT: "Documentation of the Breton Sound Oil
Pollution Incident"

PROJECT NUMBER : 15080 FTU PROJECT SITE : Breton Sound,
Louisiana

AWARD DATE : March 20, 1970 PROJECT COSTS: \$24,500

DURATION : 3 months FEDERAL COSTS: \$24,500

FWQA PROJECT OFFICER: George Putnicki
1114 Commerce Street
Dallas, Texas 75202

DESCRIPTION OF PROJECT:

The purpose of the study is to document effects of the March 1970 oil spill in Breton Sound, Gulf of Mexico, and assess the effectiveness of measures tried to contain and clean up the spilled oil. Information is to be gathered at the site by first-hand observation, interviews and collection and correlation of data generated by key participants and observation on the scene.

WORK COMPLETED:

Final report under review.

GRANTEE : Battelle Memorial Institute
Pacific Northwest Laboratories
P. O. Box 999
Richland, Washington 99352

PROJECT DIRECTOR: Ward H. Swift

TITLE OF PROJECT: "Documentation of Cleanup Experience
Following the Oil Spill Disaster at Santa
Barbara, California

PROJECT NUMBER : 15080 EAG PROJECT SITE : Santa Barbara,
California

AWARD DATE : April 18, 1969 PROJECT COSTS: \$22,900

DURATION : 3 months FEDERAL COSTS: \$22,900

FWQA PROJECT OFFICER: John C. Merrell
760 Market Street
San Francisco, California 94102

DESCRIPTION OF PROJECT:

The purpose of the study is to document the causes and effects of the February 1969 oil spill in the Santa Barbara Channel and assess the effectiveness of measures tried to contain and clean up spilled oil. This study is supported jointly with the U. S. Coast Guard.

WORK COMPLETED:

Final report under review, release pending litigation involving U. S. Department of Justice.

CONTRACTOR : University of California, San Diego
La Jolla, California 92037

PROJECT DIRECTOR: Lynn A. Griner

TITLE OF PROJECT: "Treatment of Waterfowl Trapped in Oil
Polluted Waters"

PROJECT NUMBER : 15080 EBZ PROJECT SITE : San Diego,
California

AWARD DATE : June 30, 1969 PROJECT COSTS: \$30,709

DURATION : 6 months FEDERAL COSTS: \$30,709

FWQA PROJECT OFFICER: R. W. Clawson
1220 Pacific Avenue, Bldg. 132
San Diego, California 92132

DESCRIPTION OF PROJECT:

To determine the factors contributing to the death of wild-fowl which have become coated with oil. Develop methods of removing oil from bird plumage and restoring feathers to their normal condition. Determine methods of managing cleansed birds to minimize mortality during captivity.

WORK COMPLETED:

Final report approved and in press.

CONTRACTOR : University of California, Santa Barbara
Department of Biological Sciences
Santa Barbara, California 93102

PROJECT DIRECTOR: Dr. A. W. Ebling

TITLE OF PROJECT: "Study the Abundance and Composition of
Deep and Shallow Water Macroplankton and
Littoral Fish Population in and About the
Santa Barbara Channel"

PROJECT NUMBER : 15080 EAL PROJECT SITE : Santa Barbara,
California

AWARD DATE : May 16, 1969 PROJECT COSTS: \$17,300

DURATION : 7 months FEDERAL COSTS: \$17,300

FWQA PROJECT OFFICER: Charles M. Seeley
620 Central Avenue
Alameda, California 94501

DESCRIPTION OF PROJECT:

Survey shallow and deep water plankton and shallow water benthic fish populations to determine abundance and composition in regions influenced by the February 1969 oil spill. Determine the departure from normal conditions utilizing existing baseline data. Computer programs which relate species composition, diversity and abundance to environment factors and conditions will be used.

WORK COMPLETED:

Final report under review, release pending litigation involving U. S. Department of Justice.

CONTRACTOR : University of California, Santa
Department of Biological Sciences
Santa Barbara, California 93102

PROJECT DIRECTOR: Dr. Michael Neushul

TITLE OF PROJECT: "A Preliminary Study of Oil Spill Damage
in the Intertidal Regions of Santa
Barbara and Ventura Counties, California"

PROJECT NUMBER : 15080 DZR PROJECT SITE : Santa Barbara,
California

AWARD DATE : Feb. 28, 1969 PROJECT COSTS: \$7,200

DURATION : 5 months FEDERAL COSTS: \$7,200

FWQA PROJECT OFFICER: Charles M. Seeley
620 Central Avenue
Alameda, California 94501

DESCRIPTION OF PROJECT:

Survey intertidal zones at ten stations previously surveyed
and ten new stations to determine the extent of departure
from normal in populations of plants and animals resulting
from Santa Barbara oil spill.

WORK COMPLETED:

Final report under review, release pending litigation involv-
ing U. S. Department of Justice.

GRANTEE : Lamont-Doherty Geological Laboratory
Columbia University
Palisades, New York 10964

PROJECT DIRECTOR: Dr. D. O. Shah

TITLE OF PROJECT: "Molecular Interactions at the Oil-Water
Interface and Formation of Microemulsions"

PROJECT NUMBER : 15080 EMP PROJECT SITE : Palisades,
New York

AWARD DATE : June 1, 1969 PROJECT COSTS: \$30,257

DURATION : 13 months FEDERAL COSTS: \$28,816

FWQA PROJECT OFFICER: Lawrence H. Keith
College Station Road
Athens, Georgia 30601

DESCRIPTION OF PROJECT:

Basic laboratory studies of factors influencing the effectiveness of dispersants which might be used for oil pollution control purposes.

WORK COMPLETED:

Final report under review.

GRANTEE : Maine Port Authority
Portland, Maine 04111

PROJECT DIRECTOR: Edward Langlois

TITLE OF PROJECT: "Test and Evaluate Mechanical and Pneumatic
Barriers to Contain Spilled Oil and Means
for Removing the Contained Oil in Harbors
and Adjacent Waters"

PROJECT NUMBER : 15080 DOZ PROJECT SITE : Portland,
Maine

AWARD DATE : July 19, 1968 PROJECT COSTS: \$100,850

DURATION : 18 months FEDERAL COSTS: \$ 64,350

FWQA PROJECT OFFICER: Thomas W. Devine
240 Highland Avenue
Needham Heights, Massachusetts 02194

DESCRIPTION OF PROJECT:

This project will test and evaluate a plastic foam boom and a diffused air bubble barrier for containment of oil spillages in the Port area. Then follow up the containment phase with the design, construction, and evaluation of an oil recovery device to remove the contained oil. Limited demonstration of currently available oil removal equipment are also planned in cooperation with equipment users and suppliers.

WORK COMPLETED:

Final report under review.

GRANTEE : Melpar Incorporated
7700 Arlington Boulevard
Falls Church, Virginia 22046

PROJECT DIRECTOR: Dr. Thomas Meloy

TITLE OF PROJECT: "Oil Tagging System Study"

PROJECT NUMBER	: 15080 DJQ	PROJECT SITE	: Arlington, Virginia
AWARD DATE	: Feb. 28, 1969	PROJECT COSTS:	\$70,000
DURATION	: 7 months	FEDERAL COSTS:	\$50,000

FWQA PROJECT OFFICER: Ralph Rhodes
Chief, Marine Pollution Control Section
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

Determine an operational system(s) for tagging petroleum and petroleum products to be shipped in watercraft and seagoing vessels, to facilitate tracing the source of spilled oil. The study will include consideration of the feasibility of utilizing the following identification methods: chemical tags, radiochemical tags, passive chemical/physical analytical techniques, and particle tags.

WORK COMPLETED:

Final report available to interested parties.

CONTRACTOR : University of Michigan
Willow Run Branch
Ann Arbor, Michigan 48106

PROJECT DIRECTOR: Kenneth P. Burns

TITLE OF PROJECT: "Multi-Spectrum Scanning to Determine Oil
Slick Fate"

PROJECT NUMBER	: 15080 EAF	PROJECT SITE	: Santa Barbara, California
AWARD DATE	: May 26, 1969	PROJECT COSTS:	\$16,235
DURATION	: 7 months	FEDERAL COSTS:	\$16,235

FWQA PROJECT OFFICER: **Ralph Rhodes
Chief, Marine Pollution Control
Section
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

Determine the multi-spectral radiation characteristics of crude oil in the Santa Barbara Channel. This data will be used to develop remote sensing techniques for oil slick detection.

**Data being evaluated by U. S. Geological Survey.

GRANTEE : National Oil Recovery Corporation
Hook and Constable Road
Bayonne, New Jersey 07002

PROJECT DIRECTOR: Solfred Maizus

TITLE OF PROJECT: "Demonstration of the Complete Conversion
of Crankcase Waste Oil Into Useful
Products — Without Producing Pollutant
Material"

PROJECT NUMBER	: 15080 DEO	PROJECT SITE	: Bayonne, New Jersey
AWARD DATE	: Jan. 28, 1969	PROJECT COSTS:	\$1,678,104
DURATION	: 1 year	FEDERAL COSTS:	\$ 387,331

FWQA PROJECT OFFICER: Richard Keppler
John F. Kennedy Bldg., Room 2303
Boston, Massachusetts 02203

DESCRIPTION OF PROJECT:

Demonstrate a new simplified process requiring minimum capital equipment and suitable for package construction for installations near waste oil sources and markets, as well as near complete conversion efficiency to reuseable oil products and substantial reduction of the pollution potential from re-refining operations themselves. In addition, the process produces no sludge which has to be disposed.

WORK COMPLETED:

Final report under review.

GRANTEE : New York University
School of Engineering and Science
Bronx, New York 10453

PROJECT DIRECTOR: Dr. Henry C. Schwartzberg

TITLE OF PROJECT: "The Spreading of Oil Films"

PROJECT NUMBER	: 15080 EPL	PROJECT SITE	: Bronx, New York
AWARD DATE	: May 22, 1969	PROJECT COSTS:	\$27,000
DURATION	: 15 months	FEDERAL COSTS:	\$25,716

FWQA PROJECT OFFICER: Lloyd Kahn
Edison Water Quality Laboratory
Edison, New Jersey 08817

DESCRIPTION OF PROJECT:

Laboratory scale studies to determine and correlate the factors influencing the spreading of oil spilled at sea. The correlations will be aimed at predicting the rate and extent of the spread of oil films so that available resources can be used most effectively in combating pollution caused by oil spills.

WORK COMPLETED:

Final report available to interested parties.

CONTRACTOR : Melvin Z. Poliakoff
24 Knoll Road
Tenafly, New Jersey 07670

PROJECT DIRECTOR: Melvin Z. Poliakoff

TITLE OF PROJECT: "State-of-the-Art Report on the Composition
Properties and User of Oil Dispersants"

PROJECT NUMBER : 15080 EHO PROJECT SITE : Edison,
New Jersey

AWARD DATE : April 1, 1969 PROJECT COSTS: \$1,000

DURATION : 3 weeks FEDERAL COSTS: \$1,000

FWQA PROJECT OFFICER: Dr. Thomas Murphy
Edison Water Quality Laboratory
Edison, New Jersey 08817

DESCRIPTION OF PROJECT:

Using information available through personal experience, literature search and interviews, prepare a written report which critically summarizes current knowledge on the following: (1) chemical nature of dispersants; (2) physical and chemical properties of dispersants; (3) manufacturing processes; (4) uses of dispersants and procedures by which their effectiveness, especially for dispersion of oil on water may be evaluated.

WORK COMPLETED:

Final report available to interested parties.

CONTRACTOR : Sonics International, Inc.
7101 Carpenter Freeway
Dallas, Texas 75247

PROJECT DIRECTOR: C. B. Easley

TITLE OF PROJECT: "Treatment of Oil Wastes Through the Use
of Emulsifying Agents"

PROJECT NUMBER : 15080 DJO PROJECT SITE : Dallas,
Texas

AWARD DATE : June 13, 1969 PROJECT COSTS: \$43,058

DURATION : 3 months FEDERAL COSTS: \$43,058

FWQA PROJECT OFFICER: George Putnicki
1114 Commerce Street
Dallas, Texas 75202

DESCRIPTION OF PROJECT:

Determine the feasibility of transporting oil in the form of a highly viscous emulsion created by utilizing ultrasonic techniques and certain additives. The high resistance to flow to be created will reduce cargo loss in the event of an accident.

WORK COMPLETED:

Final report available to interested parties.

CONTRACTOR : URS Systems Corporation
1811 Trousdale Drive
Burlingame, California 94010

PROJECT DIRECTOR: Myron B. Hawkins

TITLE OF PROJECT: "Evaluation of Selected Earthmoving Equipment in Beach Restoration Operations"

PROJECT NUMBER : 15080 EOS PROJECT SITE : Burlingame,
California

AWARD DATE : August 29, 1969 PROJECT COSTS: \$172,489

DURATION : 10 months FEDERAL COSTS: \$172,489

FWQA PROJECT OFFICER: Ralph Rhodes
Chief, Marine Pollution Control Section
Washington, D. C. 20242

DESCRIPTION OF PROJECT:

To evaluate the effectiveness of selected pieces of earth-moving equipment, making appropriate minor modifications to improve efficiency, develop operating procedures, and demonstrate the system on an oil-contaminated beach.

WORK COMPLETED:

Final report under review.