

Dispersed Oil Research Data						
Topics from CRRC Workshop Report on "Research & Development Needs For Making Decisions Regarding Dispersing Oil"	Project/PI	Project's Coverage of Research Topic	Expected Completion Date	Funding \$	Report/Abstract Available? If so, when & where	Funding Agency
<b>Table 1. EFFICACY TOPIC 1: Chemical Parameters that Influence Overall Effectiveness.</b>						
<b>IA. Research Topic</b>	<i>Literature synthesis on physical and chemical properties of oils that determine the overall effectiveness of dispersant application</i>	"Dispersants: An Electronic Bibliography on Effectiveness, Technological Advances, and Toxicological Effects." Conover (LUMCON Library, LSU)		Complete	<a href="http://www.lumcon.edu/library/dispersants/">http://www.lumcon.edu/library/dispersants/</a>	Louisiana OSRADP
		"Stability and the Resurfacing of Dispersed Oil." Fingas (Environment Canada)	Partial	Complete	<a href="http://www.pwsrcac.org/docs/d0026200.pdf">http://www.pwsrcac.org/docs/d0026200.pdf</a>	PWS RCAC
		"A Review of the Emulsification Tendencies and Long Term Petroleum Trends of Alaska North Slope Oils and the White Paper on Emulsification of ANS Crude Oil Spilled in Valdez." Fingas (Environment Canada)	Partial	Complete	<a href="http://www.pwsrcac.org/docs/d0024800.pdf">http://www.pwsrcac.org/docs/d0024800.pdf</a>	PWS RCAC
		"Technology Assessment of the Use of Dispersants on Spills from MMS-Regulated OCS Facilities" SL Ross Environmental Research Ltd.	Partial	Complete	<a href="http://www.mms.gov/tarprojects/349.htm">http://www.mms.gov/tarprojects/349.htm</a>	MMS
		"Assessment of the Use of Dispersants on Marine Oil Spills in California" SL Ross Environmental Research Ltd.	Partial	Complete	<a href="http://www.mms.gov/tarprojects/413.htm">http://www.mms.gov/tarprojects/413.htm</a>	MMS
		"Chemical Characteristics of an Oil and the Relationship to Dispersant Effectiveness" Emergencies Science Division, Environment Canada	Partial	Complete	<a href="http://www.mms.gov/tarprojects/436.htm">http://www.mms.gov/tarprojects/436.htm</a>	MMS
		"Identification of Window of Opportunity for Chemical Dispersants on Gulf of Mexico Crude Oils" SL Ross Environmental Research Ltd.	Partial	Complete	<a href="http://www.mms.gov/tarprojects/595.htm">http://www.mms.gov/tarprojects/595.htm</a>	MMS
<b>IB. Research Topic</b>	<i>Refining existing datasets to correlate physical and chemical properties of different types of oil with dispersibility</i>	"Effectiveness by use of dispersant on various oils at relevant weathering degree and ice concentrations." Task leader - SINTEF (Norway)	Partial	June, 2008	TBA	Shell

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	"Wave Tank Studies on Dispersant Effectiveness as a Function of Energy Dissipation Rate and Particle Size Distribution." Lee, Venosa (Bedford Institute of Oceanography, Canada)	Partial	2009	\$199,999	<a href="http://www.crcc.unh.edu/center_projects.htm/center_projects.htm">www.crcc.unh.edu/center_projects.htm/center_projects.htm</a>	CRRC
	"Effects of Dispersants on Oil-SPM Aggregation and Fate in US Coastal Waters." Khelifa, Fingas (Environment Canada)	Partial	2008	\$126,378	<a href="http://www.crcc.unh.edu/center_projects.htm">www.crcc.unh.edu/center_projects.htm</a>	CRRC
	"Development of a Numerical Algorithm to Compute the Effects of Breaking Waves on Surface Oil Spilled at Sea: Dispersion and Submergence/Over-Washing as Extremes of a Theoretical Continuum." Reed, Daling, Johansen (SINTEF Materials and Chemistry, Norway)	Partial	January, 2009	\$278,750	<a href="http://www.crcc.unh.edu/center_projects.htm">www.crcc.unh.edu/center_projects.htm</a>	CRRC
	"Measurements and Modeling of Size Distributions, Settling and Dispersions (turbulent diffusion) Rates of Oil Droplets in Turbulent Flows." Katz, Gopalan (The Johns Hopkins University, Department of Mechanical Engineering)	Partial	January, 2009	\$240,158	<a href="http://www.crcc.unh.edu/center_projects.htm">www.crcc.unh.edu/center_projects.htm</a>	CRRC
	EMSA - Project: "Decision Support Tool for Dispersant Use." (SINTEF, CEDRE, Alun Lewis Ltd)	Complete	2006	\$100,000	EMSA-Report + Model tool available: Contact: Lito.Xirotiyri@emsa.eu.int	SINTEF/ EMSA/ CEDRE/ Lewis
	"Correlating Results of Dispersants Effectiveness at Ohmsett with Identical At-Sea trial: Effects of Oil Viscosity and Dispersant to Oil Ratios" SL Ross Environmental Research Ltd.	Partial	Complete		<a href="http://www.mms.gov/tarprojects/477.htm">http://www.mms.gov/tarprojects/477.htm</a>	MMS
	(above)				<a href="http://www.mms.gov/tarprojects/526.htm">http://www.mms.gov/tarprojects/526.htm</a>	
	"Analysis of IFO-180 and IFO-380 Oil Properties for Dispersant Window of Opportunity" SL Ross Environmental Research Ltd.	Partial	Complete		<a href="http://www.mms.gov/tarprojects/506.htm">http://www.mms.gov/tarprojects/506.htm</a>	MMS

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		"Correlating Results of Ohmsett Dispersant Test with At-Sea Trials: Workshop to Coordinate Publications and Prioritize Follow-up Research" SL Ross Environmental Research Ltd.	Partial	Complete		<a href="http://www.mms.gov/tarprojects/507.htm">http://www.mms.gov/tarprojects/507.htm</a>	MMS
<b>IC. Research Topic</b>	<b>Protocols for creating weathered oil/emulsions</b>	"Harmonization of SINTEF / CEDRE Methodologies."	Plan to initiate in 2008		\$100,000	SINTEF- reports: Contact: per.daling@sintef.no	SINTEF/ CEDRE
		"Development of a Method to Produce Large Quantities of Realistic Water-In-Oil Emulsions for Use in Evaluating Oil Spill Response Equipment and Methods." Belore (SL Ross Environmental Research Ltd.)		Complete		<a href="http://www.mms.gov/tarprojects/516.htm">http://www.mms.gov/tarprojects/516.htm</a>	MMS
<b>ID. Research Topic</b>	<b>Development of standard oils with known dispersibility over a range of variables, for use in comparison with other oils</b>	"Wave Tank Studies on Dispersant Effectiveness as a Function of Energy Dissipation Rate and Particle Size Distribution." Lee, Venosa (Bedford Institute of Oceanography, Canada)	Partial	see previous		<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"Development of a Numerical Algorithm to Compute the Effects of Breaking Waves on Surface Oil Spilled at Sea: Dispersion and Submergence/Over-Washing as Extremes of a Theoretical Continuum." Reed, Daling, Johansen (SINTEF Materials and Chemistry, Norway)	Partial	see previous		<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"Measurements and Modeling of Size Distributions, Settling and Dispersions (turbulent diffusion) Rates of Oil Droplets in Turbulent Flows." Katz, Gopalan (The Johns Hopkins University, Department of Mechanical Engineering)	Partial	see previous		<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"Harmonization of SINTEF / CEDRE Methodologies"		see previous			SINTEF/ CEDRE

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<i>IE. Research Topic</i>	<i>Development and intercomparison studies of methods for measuring droplet size distributions and energy dissipation rate in different dispersant effectiveness test systems</i>	"Wave Tank Studies on Dispersant Effectiveness as a Function of Energy Dissipation Rate and Particle Size Distribution." Lee, Venosa (Bedford Institute of Oceanography, Canada)	Complete	see previous		<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"Development of a Numerical Algorithm to Compute the Effects of Breaking Waves on Surface Oil Spilled at Sea: Dispersion and Submergence/Over-Washing as Extremes of a Theoretical Continuum." Reed, Daling, Johansen (SINTEF Materials and Chemistry, Norway)	Complete	see previous		<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"Measurements and Modeling of Size Distributions, Settling and Dispersions (turbulent diffusion) Rates of Oil Droplets in Turbulent Flows." Katz, Gopalan (The Johns Hopkins University, Department of Mechanical Engineering)	Complete	see previous		<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"JIP-Coastal Spill Contingency-Lifetime of Weathered Oils Using Flume Basin."		2008	\$300,000	Contact: <a href="mailto:merete.moldestad@sintef.no">merete.moldestad@sintef.no</a>	SINTEF/ JIP
		"Laboratory Testing to Determine Dispersion Predictability of the Baffled Flask Test (BFT) and Swirling Flask Test (SWT)" US EPA and University of Cincinnati	Partial	Complete		<a href="http://www.mms.gov/tarprojects/513.htm">http://www.mms.gov/tarprojects/513.htm</a>	MMS
		"Analysis of Dispersant Effectiveness of Heavy Fuel Oils and Weathered Crude Oils at Two Different Temperatures Using the Baffled Flask Test" US EPA and University of Cincinnati	Partial	Complete		<a href="http://www.mms.gov/tarprojects/529.htm">http://www.mms.gov/tarprojects/529.htm</a>	MMS
<i>IF. Research Topic</i>	<i>Design and implement a research program to fill identified data gaps in chemical dispersant</i>	"2005 Research & Development Needs For Making Decisions Regarding Dispersing Oil"	Partial	Complete		<a href="http://www.crrc.unh.edu/dwg/dispersant_workshop_report_complete.pdf">www.crrc.unh.edu/dwg/dispersant_workshop_report_complete.pdf</a>	CRRC
		"JIP: Oil in Ice-Project4: Dispersant Effectiveness in Ice"		2009	\$350,000	Contact: <a href="mailto:per.daling@sintef.no">per.daling@sintef.no</a>	SINTEF/ JIP

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	"Using Dispersants to Test and Evaluate the Effectiveness of Dispersants in Cold Water and Broken Ice." Belore (SL Ross Environmental Research Ltd)		Complete		<a href="http://www.mms.gov/tarprojects/450.htm">http://www.mms.gov/tarprojects/450.htm</a>	MMS
	"Ohmsett 2003 Cold Water Dispersant Effectiveness Experiments." Belore (SL Ross Environmental Research Ltd.)		Complete		<a href="http://www.mms.gov/tarprojects/476.htm">http://www.mms.gov/tarprojects/476.htm</a>	MMS
	"Dispersant Effectiveness Testing on Heavy OCS Crude Oils at Ohmsett." Belore (SL Ross Environmental Research Ltd.)		Complete		<a href="http://www.mms.gov/tarprojects/514.htm">http://www.mms.gov/tarprojects/514.htm</a>	MMS
	"The Effect of Warming Viscous Oils Prior to Discharge on Dispersant Performance." Belore (SL Ross Environmental Research Ltd.)		Complete		<a href="http://www.mms.gov/tarprojects/527.htm">http://www.mms.gov/tarprojects/527.htm</a>	MMS
	"Dispersant Effectiveness Testing on Realistic Emulsions at Ohmsett." Belore (SL Ross Environmental Research Ltd.)		Complete		<a href="http://www.mms.gov/tarprojects/542.htm">http://www.mms.gov/tarprojects/542.htm</a>	MMS
	"Calm Sea Application of Dispersants." Trudel, Belore (SL Ross Environmental Research Ltd.)		Complete		<a href="http://www.mms.gov/tarprojects/545.htm">http://www.mms.gov/tarprojects/545.htm</a>	MMS
	"Chemical Dispersibility of OCS Crude Oils in Non-Breaking Waves; Part 1 Determining the Limiting Oil Viscosity for Dispersion in Non-Breaking Waves." Trudel, Belore (SL Ross Environmental Research Ltd) Lewis (Alun Lewis Oil Spill Consultancy)		Complete		<a href="http://www.mms.gov/tarprojects/546.htm">http://www.mms.gov/tarprojects/546.htm</a>	MMS
	"Research at Ohmsett on the Effectiveness of Chemical Dispersants on Alaskan Oils in Cold Water." Trudel, Belore (SL Ross Environmental Research Ltd.)		Complete		<a href="http://www.mms.gov/tarprojects/568.htm">http://www.mms.gov/tarprojects/568.htm</a>	MMS
	"Laboratory Study to Compare the Effectiveness of Chemical Dispersants When Applied Dilute versus Neat" SL Ross Environmental Research Ltd	Partial	Complete		<a href="http://www.mms.gov/tarprojects/350.htm">http://www.mms.gov/tarprojects/350.htm</a>	MMS

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	"Changes with Dispersant Effectiveness with Extended Exposure in Calm Seas" S.L. Ross Environmental Research Ltd and Alun Lewis Oil Spill Consultancy	Partial	Complete		<a href="http://www.mms.gov/tarprojects/590.htm">http://www.mms.gov/tarprojects/590.htm</a>	MMS
	"Development of a Training Package on the Use of Chemical Dispersants for Ohmsett - The National Oil Spill Response Test Facility" S.L. Ross Environmental Research Ltd.	Partial	Complete		<a href="http://www.mms.gov/tarprojects/613.htm">http://www.mms.gov/tarprojects/613.htm</a>	MMS
	"Chemical Dispersant Research at Ohmsett" S.L. Ross Environmental Research Ltd.	Partial	Complete		<a href="http://www.mms.gov/tarprojects/615.htm">http://www.mms.gov/tarprojects/615.htm</a>	MMS
	"Review of Ohmsett Cold Water Testing." Fingas, DeCola (Environment Canada)		February 2006		<a href="http://www.pwsrca.org/docs/d0030200.pdf">http://www.pwsrca.org/docs/d0030200.pdf</a>	PWS RCAC

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<b>Table 2. EFFICACY TOPIC 2: Operational and Hydrodynamic Parameters that Influence Overall Effectiveness.</b>							
<b>2A. Research Topics</b>	<i>Determination of the factors that represent realistic operational conditions for wave tank test systems</i>	"JIP-Coastal Spill Contingency-Lifetime of Weathered Oils." And the CRRC-project (see below)		2008	\$150,000 + \$120,000	Both projects just initiated. Contact: Merete.moldestad@sintef.no or oistein.johansen@sintef.no	SINTEF
<b>2B. Research Topics</b>	<i>Improving models of dispersed oil transport in the upper mixed layer</i>	CRRC-project: "Development of Numerical Algorithms to Compute the Effects of Breaking Waves."		see previous		Both projects just initiated. Contact: Merete.moldestad@sintef.no or mark.reed@sintef.no	CRRC/ SINTEF
		"Field Verification of Oil Spill Fate & Transport Modeling and Linking CODAR Observation System Data with SIMAP Predictions" Payne, French-McCay, Terrill, Nordhaussen (Payne Environmental Consultants, Inc.)	Complete	2007	\$196,041	<a href="http://www.crcc.unh.edu/center_projects.htm">www.crcc.unh.edu/center_projects.htm</a>	CRRC
<b>2C. Research Topics</b>	<i>Update SMART monitoring protocols</i>	"Field Verification of Oil Spill Fate & Transport Modeling and Linking CODAR Observation System Data with SIMAP Predictions." Payne, French-McCay, Terrill, Nordhaussen (Payne Environmental Consultants, Inc.)	Partial	see previous		<a href="http://www.crcc.unh.edu/center_projects.htm">www.crcc.unh.edu/center_projects.htm</a>	CRRC
		"The NEBAJEX (MUMM/SINTEF/CEDRE)"	Complete	2003	EU-funded project	Reports available: MUMM (Belgium) Contact: R.Schallier@mumm.ac.be	SINTEF/MUMM/CEDRE
		"Upgrade of SMART Dispersant Effectiveness Monitoring Protocol" S.L. Ross Environmental Research Ltd.	Partial	Complete		<a href="http://www.mms.gov/tarprojects/598.htm">http://www.mms.gov/tarprojects/598.htm</a>	MMS/USCG

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<b>2D. Research Topics</b>	<i>Assessment of the effects of dispersant application on subsequent mechanical recovery of undispersed oil</i>	"Mechanical Recovery of Oil Treated with Dispersant."		2002	\$50,000	SINTEF Report available (in Norwegian)	SINTEF/ Norwegian Authorities
		"Investigation of the Ability to Effectively Recover Oil Following Dispersant Application" S.L. Ross Environmental Research Ltd.		Complete		<a href="http://www.mms.gov/tarprojects/589.htm">http://www.mms.gov/tarprojects/589.htm</a>	MMS
<b>2E. Research Topics</b>	<i>Optimizing the operational effectiveness of dispersant applications</i>	"Improve and Adapt Existing Dispersant Application Technology for Oil in Ice and Low Temperatures." Task leader Sintef	Partial	August 2009		TBA	Shell
		"Development of New Application System for Large Response Vessels."	Complete	2006	\$60,000	Report in Norwegian - Norsk Hydro Contact: Fredrik.Schlanbusch@hydro.com or per.daling@sintef.no	SINTEF
		"JIP-Oil in Ice: Development of Boat Application Systems Use in Ice-Covered Areas."	Partial	2009	\$550,000	Just initiated, project plans exists. Contact: per.daling@sintef.no	SINTEF/ JIP
<b>2F. Research Topics</b>	<i>Evaluation of new technologies for monitoring dispersant effectiveness in the field</i>	"Upgrading of Instrumentation at SINTEF and Testing During Field Trials."		2006	\$150,000	Report to NOFO: from 2006 field trial (in Norwegian) Contact: per.daling@sintef.no	SINTEF/ Statoil/ NOFO

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<b>Table 3. TOPIC 3: Modeling Integration of Chemical, Operational and Hydrodynamic Parameters.</b>							
<b>3A. Research Topics</b>	<i>Workshop on requirements for integrating oil toxicity and biological data with oil</i>	"Innovative Coastal Modeling for Decision Support: Integrating Physical, Biological, and Toxicological Models"	Complete	Sept, 2006		<a href="http://www.crrc.unh.edu/fall_institute/">http://www.crrc.unh.edu/fall_institute/</a>	CRRC
		"EIF Acute Project." (Statoil, Hydro, SINTEF, DnV)		2007	\$150,000	Contact: Hanne Greiff Johnsen (HANJO@statoil.com) or oistein.johansen@sintef.no	SINTEF/ Statoil/ Hydro
<b>3B. Research Topics</b>	<i>Improved models to predict dispersant effectiveness and oil fate</i>	"Development of a Numerical Algorithm to Compute the Effects of Breaking Waves on Surface Oil Spilled at Sea: Dispersion and Submergence/Over-Washing as Extremes of a Theoretical Continuum." Reed, Daling, Johansen (SINTEF Materials and Chemistry, Norway)	Partial	see previous		<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"AMOS (JIP): Development of OSCAR-3DPlume."		1999-2004	\$500,000	Contact: Mark.reed@sintef.no	SINTEF/ JIP
		"Development of OSCAR-3D Plume: For Use of Dispersant in Shallow Water."		1999-2004	\$500,000	Contact: Mark.reed@sintef.no or jim.r.clark@exxonmobil.com	SINTEF/ ExxonMobil

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<b>Table 4. EFFECTS TOPIC 1: Fate of Oil and Dispersed Oil in the Water Column and Other Habitats.</b>							
<b>IA. Research Topics</b>	<i>Understanding the interactions of chemically dispersed oil droplets with suspended particulate matter (SPM) and how these processes affect the</i>	"Effects of Dispersants on Oil-SPM Aggregation and Fate in US Coastal Waters." Khelifa, Fingas (Environment Canada)	Partial	see previous		<a href="http://www.crcc.unh.edu/center_projects.htm">www.crcc.unh.edu/center_projects.htm</a>	CRRC
		"Fate and Effects of Dispersed Oil in Shallow Water."	Plan to initiate in 2007	2009	\$250,000	Contact: Alf.g.melbye@sintef.no	SINTEF/ JIP
<b>IB. Research Topics</b>	<i>Assessment of the degree, rate, and consequences of surfactant leaching from surface slicks and chemically dispersed oil droplets</i>	"Petroleum Environmental Research Forum (PERF) Project--Dispersant Effectiveness after Extended Contact." Resby (SINTEF), Nedwed (ExxonMobil)	Focus is assessment of degree, rate, and consequences of surfactant leaching from surface slicks--no study of dispersed oil droplets	May, 2007	\$350,000	<a href="http://www.mms.gov/tarprojects/563.htm">http://www.mms.gov/tarprojects/563.htm</a>	ExxonMobil, Total, Statoil, US MMS, OSRL, Alaska Clean Seas, Sakhalin Energy Investment Company (Shell operated), Dept of Fisheries and Oceans Canada, TX General Land Office
		"SERF-JIP: Effectiveness of Dispersants after Extended Contact Time with Oil." (SINTEF /CEDRE cooperation)		2007	\$300,000	Contact: tim.j.nedwed@exxonmobil.com or janne.resby@sintef.no	SINTEF/ CEDRE
<b>IC. Research Topics</b>	<i>Reconciliation of the differences between the empirical evaporation approach and traditional pseudo-component approach</i>	"Field Validations of Model Predictions."		1996-2000		Contact: Mark.reed@sintef.no	SINTEF

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<i>ID. Research Topics</i>	<i>Quantification of the biodegradation kinetics of dispersed oil</i>	"Several Recent Research Projects at SINTEF."		2000-2006	\$400,000	Contact: Odd.G.Brakstad@sintef.no	SINTEF/ JIP/ Norwegian Research Council
		"Biodegradation of Chemically Dispersed Oil: an Ecosystem Approach" (AEA Technology)	Partial	Complete		<a href="http://www.mms.gov/tarprojects/338.htm">http://www.mms.gov/tarprojects/338.htm</a>	MMS
		"Effects of Chemically Dispersed and Biodegraded Oils" (Plymouth Laboratories, Inc)	Partial	Complete		<a href="http://www.mms.gov/tarprojects/449.htm">http://www.mms.gov/tarprojects/449.htm</a>	MMS
<i>IE. Research Topics</i>	<i>Improve, verify, and validate oil spill trajectory and fate models</i>	"Field Verification of Oil Spill Fate & Transport Modeling and Linking CODAR Observation System Data with SIMAP Predictions." Payne, French-McCay, Terrill, Nordhaussen (Payne Environmental Consultants, Inc.)	Partial	July, 2007	Complete	<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"Delivery and Quality Assurance of Short-Term Trajectory Forecasts from HF Radar Observations." Garfield (San Francisco State University), Paduan (U.S. Naval Postgraduate School), Ohlmann (UC Santa Barbara)	Partial	Dec, 2008	\$229,904	<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"A Continuous Ongoing Process."			\$100,000/year	Contact: Mark.reed@sintef.no	SINTEF

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<b>Table 5. EFFECTS TOPIC 2: Realistic Exposure Regimes/Toxicity Testing.</b>							
<b>2A. Research Topics</b>	<i>Develop methods for collection and analysis of samples of dissolved phase and particulate/oil-droplet phase PAH in environmental samples</i>	"Acute and Chronic Effects of Oil, Dispersant and Dispersed Oil to Sensitive Symbiotic Cnidarian Species, Including Corals." Mitchelmore, Baker, Hatch (University of Maryland Chesapeake Biological Laboratory)	Partial	July, 2008	\$199,247	<a href="http://www.crcc.unh.edu/center_projects.htm">www.crcc.unh.edu/center_projects.htm</a>	CRRC
		"Studies Using Aquatic Turtles (the Diamondback Terrapin and Snapping Turtle) to Assess the Potential Long-Term Effects of Oiling of Nests During Early Embryonic Development." Rowe (University of Maryland Chesapeake Biological Laboratory)	Partial	2008	\$205,421	<a href="http://www.crcc.unh.edu/center_projects.htm">www.crcc.unh.edu/center_projects.htm</a>	CRRC
		"Long-term Effects - Exposure Methodology Development."	Complete	2007	\$100,000	Contact: Trond.Nordtug@sintef.no	SINTEF/ Norwegian Research Council
<b>2B. Research Topics</b>	<i>Monitoring dispersed oil concentrations at spills of opportunity</i>	SINTEF is responsible for all monitoring of dispersed oil during field testing by NOFO of dispersant on experimental oil spills	Complete		\$150,000/ year	NOFO-reports (in Norwegian); Contact: per.daling@sintef.no	SINTEF
		Effects of Dispersed Oil on Arctic Marine Environments				Contact: victoria.broje@shell.com	JIP/Shell
<b>2C. Research Topics</b>	<i>Literature synthesis of dispersed oil toxicity studies</i>	"Effect of Dispersed Oil."	Complete	2007	\$100,000	Report pending. Contact: Tone Frost, Statoil (TKF@statoil.no) or Trond.Nordtug@sintef.no	SINTEF/ Statoil

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<b>2D. Research Topics</b>	<i>Standard methods for toxicity testing of dispersed oil appropriate for coastal regimes</i>	"Method Development for Testing Effects of Dispersed Oil Droplets on Fish Larvae and Calanus."	Complete	2007	\$100,000	Contact: Trond.Nordtug@sintef.no	SINTEF/ Norwegian Research Council
		"Chemical Response to Oil Spill: Ecological Effects Research Forum (CROSERF)" (Ecosystem Management and Associates, Inc)	Partial	Complete		<a href="http://www.mms.gov/tarprojects/296.htm">http://www.mms.gov/tarprojects/296.htm</a>	API, Exxon, Chevron, Marine Spill Response Corporation, state government agencies (AK, CA, FL, LA, TX, WA), federal government agencies (MMS, NOAA, EPA) and Environment Canada

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<b>Table 6. EFFECTS TOPIC 3: Integration to Make Short and Long Term Prediction of Effects.</b>							
<b>3A. Research Topics</b>	<i>Synthesis of existing dispersed oil toxicity data to support risk-based decision making for use of dispersants at spills</i>	"Environmental Impact Factor (EIF Acute)." SINTEF /Veritas	Partial		\$100,000	Reports: Contact: Hanne Greiff Johnsen (HANJO@statoil.com) or oistein.johansen@sintef.no	SINTEF/ Hydro/ Statoil
<b>3B. Research Topics</b>	<i>Effects of dispersed oil on wildlife</i>						
<b>3C. Research Topics</b>	<i>Effects of short-term exposure to dispersed oil</i>	"Acute and Chronic Effects of Oil, Dispersant and Dispersed Oil to Sensitive Symbiotic Cnidarian Species, Including Corals." Mitchelmore, Baker, Hatch (University of Maryland Chesapeake Biological Laboratory)	Complete	see previous		<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"Acute and Chronic Effects of Crude and Dispersed Oil on Chinook Salmon Smolts ( <i>Oncorhynchus tshawytscha</i> )." Tjeerdema (University of California, Davis)	Complete	2006	\$150,000	<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC
		"Influence of Dispersants on Oil Toxicity in Fish Embryos." Incardona, Scholz, Collier, Blanchard (NOAA Fisheries, Northwest Fisheries Science Center)	Complete	Ongoing			NOAA/ NWFSC
		"The Relationship Between Acute and Population Level Effects of Exposure to Dispersed Oil, and the Influence of Exposure Conditions Using Multiple Life History Stages of an Estuarine Copepod, <i>Eurytemora affinis</i> , as a Model Planktonic Organism." Aurand, Coelho (Ecosystem Management & Assoc)	Complete	July, 2008	\$232,062	<a href="http://www.crrc.unh.edu/center_projects.htm">www.crrc.unh.edu/center_projects.htm</a>	CRRC

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	"Effects of Dispersed Oil on Cod-Larvae."	Partial	2007-2009	\$600,000	Contact: Trond.Nordtug@sintef.no	SINTEF/ JIP	
<b>3C. Research Topics</b>	<i>Effects of short-term exposure to dispersed oil</i>	"Acute and Chronic Effects of Crude and Dispersed Oil on Chinook Salmon Smolts ( <i>Oncorhynchus tshawytscha</i> )." Tjeerdema (University of California, Davis)	Effects of short term-exposure to dispersed oil	2006		CA OSPR	
<b>3D. Research Topics</b>	<i>Long-term effects of short-term exposures to dispersed oil</i>	"Acute and Chronic Effects of Crude and Dispersed Oil on Chinook Salmon Smolts ( <i>Oncorhynchus tshawytscha</i> )." Tjeerdema (University of California, Davis)	Long-term effects of short-term exposure to dispersed oil	Initiate Summer 2007; Complete Summer 2008	\$451,110	Report of short-term studies provided to CRRC 9/1/06. Publications in draft.	CA OSPR
		"Acute and Chronic Effects of Crude and Dispersed Oil on Chinook Salmon Smolts ( <i>Oncorhynchus tshawytscha</i> )." Tjeerdema (University of California, Davis)	Effects of short term-exposure to dispersed oil	Initiate Spring 2007; Completion Summer 2007		CA OSPR	
		"Acute and Chronic Effects of Crude and Dispersed Oil on Chinook Salmon Smolts ( <i>Oncorhynchus tshawytscha</i> )." Tjeerdema (University of California, Davis)	Long-term effects of short term exposure to dispersed oil	Initiate Summer 2007; Complete Fall 2008	\$174,098	Winter 2008	CA OSPR
		"Effect of Oil and Dispersant and Dispersed Oil on Feathers"				CA OSPR	
		"Physical Fate and Biological Effects of Dispersed Oil in Shallow Water." Preproject		2008	Contact: Alf.g.melbye@sintef.no	SINTEF/ JIP	
		"Dispersants as Oil Spill Countermeasures for the Remediation and Restoration of Sensitive Coastal Habitats" Lin (Louisiana State University)	Complete		\$188,472	<a href="http://www.crcc.unh.edu/center_projects.htm">www.crcc.unh.edu/center_projects.htm</a>	CRRC

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<i>3E. Research Topics</i>	<i>Integration of fate and toxicity models with population models to predict short- and long-term effects of dispersant</i>	"Innovative Coastal Modeling for Decision Support: Integrating Physical, Biological, and Toxicological Models."	Complete	2006		<a href="http://www.crcc.unh.edu/fall_institute/">http://www.crcc.unh.edu/fall_institute/</a>	CRRC
		"NRDAM for the 1991 Gulf War, Arabian Gulf"		2003	\$300,000	Report restricted: Contact: Mark.reed@sintef.no	SINTEF