

 <p style="text-align: center;">United States Environmental Protection Agency Washington, DC 20460</p> <p style="text-align: center;">Interagency Agreement/ Amendment</p> <p style="text-align: center;">Part 1 - General Information</p>		1. EPA IA Identification Number RW-061-92436201 - 0		2. Funding Location by Region EPA HQ					
		3. Other Agency IA ID Number (if known) CPSC-I-15-0023		4. Awarding Office IASSC East					
		5. Type of Action New		6. IA Specialist: Lenore Connell 202-564-5343 connell.lenore@epa.gov					
7. Name and Address of EPA Organization US Environmental Protection Agency IASSC East 1200 Pennsylvania Avenue, NW Mail code 3903R Washington, DC 20460			8. Name and Address of Other Agency Consumer Product Safety Commission Office of Hazard Identification and Reduction 4330 East-West Highway, Rm. 502 Bethesda, MD 20814						
9. DUNS: 029128894		10. BETC: COLL		11. DUNS: 069287522					
12. BETC: DISB		13. Project Title and Description Evaluation of CPSC Wipe Method and Exposure Estimate to Nanomaterials in Surface Applications Exploratory research into the use and application of engineered nanomaterial coatings.							
14. EPA Project Officer (Name, Address, Telephone Number) Todd Luxton 26 W MLK Dr (CHL) Cincinnati, OH 45268 513-569-7210 E-Mail: luxton.todd@epa.gov FAX: 513-569-7879			15. Other Agency Project Officer (Name, Address, Telephone) Trey Thomas 4330 East-West Highway, Rm. 502 Bethesda, MD 20814 301-504-7738 E-Mail: tthomas@cpsc.gov FAX: 301-504-0079						
16. Project Period: 09/29/2015 to 10/04/2017			17. Budget Period: 09/29/2015 to 10/04/2017						
18. Scope of Work (See Attachment)									
19. Employer/Tax ID No. 520852695		20. CAGE No: 347A4		21. ALC: 68-01-0727					
22. Statutory Authority for Transfer of Funds and Interagency Agreement Toxic Substances Control Act: Sec. 10; 15 USC 2609					23. Other Agency Type Federal Agency				
24. Revise Reimbursable Funds and Direct Fund Cites (only complete if applicable)									
	Previous Funding		This Action		Amended Total				
Revise Reimbursable (In-house)			0.00		0.00				
Direct Fund Cite (contractor)			0.00		0.00				
Total					0.00				
	Previous Amount		Amount This Action		Total Amount				
25. EPA Amount			\$0.00		\$0.00				
26. EPA In-Kind Amount					\$0.00				
27. Other Agency Amount			\$375,000.00		\$375,000.00				
28. Other Agency In-Kind Amount			\$15,000.00		\$15,000.00				
29. Total Project Cost			\$390,000.00		\$390,000.00				
30. Fiscal Information									
Treas. Symbol	DCN	FY	Appropriation	Budget Org	PRC	Object Class	Site/Project	Cost Org	Ob/De-Ob Amt
6815/160107		1516	CR	26CLX54	401FK9	0			320,048.00
6815/160107		1516	CR	26CLZ54	401FK9	0			54,952.00
									375,000

Part II - Approved Budget				EPA IAG Identification Number RW-061-92436201 - 0
31. Budget Categories	Itemization of All Previous Actions	Itemization of This Action	In-Kind Itemization of This Action	Itemization of Total Project Cost to Date
(a) Personnel			\$10,000.00	\$10,000.00
(b) Fringe Benefits				\$0.00
(c) Travel		\$10,000.00		\$10,000.00
(d) Equipment				\$0.00
(e) Supplies			\$5,000.00	\$5,000.00
(f) Procurement / Assistance		\$310,048.00		\$310,048.00
(g) Construction				\$0.00
(h) Other				\$0.00
(i) Total Direct Charges	\$0.00	\$320,048.00	\$15,000.00	\$335,048.00
(j) Indirect Costs:	\$0.00	\$54,952.00		\$54,952.00
Charged - Amount Rate: % Base: \$ Not Charged: Funds-In: Not charged by EPA Amount \$				
(k) Total (EPA Share 0.00 %) (Other Agency Share 100.00 %)	\$0.00	\$375,000.00	\$15,000.00	\$390,000.00
32. How was the IDC Base calculated?				
33. Is equipment authorized to be furnished by EPA or leased, purchased, or rented with EPA funds? <input type="checkbox"/> Yes <input type="checkbox"/> No (Identify all equipment costing \$1,000 or more)				
34. Are any of these funds being used on Procure/Assistance agreements? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Type of Procure/Assistance Agreement Contract				
Contractor/Recipient Name (if known)	Total Procure/Assistance Amount Under This Project		Percent Funded by EPA (if known)	
ORISE/ Pegasus Tech Services	310048.00 Total \$ 310,048.00		0	
Part III - Funding Methods and Billing Instructions				
35. (Note: EPA Agency Location Code (ALC) - 68010727)				
<input type="checkbox"/> Disbursement Agreement	Request for repayment of actual costs must be itemized on SF 1080 and submitted to the Financial Management Office, Cincinnati, OH 45268-7002:			
<input type="checkbox"/> Repayment	<input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Upon Completion of Work			
<input type="checkbox"/> Advance	Only available for use by Federal agencies on working capital fund or with appropriate justification of need for this type of payment method. Unexpended funds at completion of work will be returned to EPA. Quarterly cost reports will be forwarded to the Financial Management Center, EPA, Cincinnati, OH 45268-7002.			
<input type="checkbox"/> Allocation Transfer-Out	Used to transfer obligational authority or transfer of function between Federal agencies. Must receive prior approval by the Office of Comptroller, Budget Division, Budget Formulation and Control Branch, EPA Hdqtrs. Forward appropriate reports to the Financial Reports and Analysis Branch, Financial Management Division, PM-226F, EPA, Washington, DC 20460.			
36. <input checked="" type="checkbox"/> Reimbursement Agreement <input checked="" type="checkbox"/> Repayment <input type="checkbox"/> Advance				
<input type="checkbox"/> Allocation Transfer-In				
Other Agency's Billing Address (include ALC or Station Symbol Number)			Other Agency's Billing Instructions and Frequency	
			Other Agency TAS 61150100	

Part IV - Acceptance Conditions		EPA Identification Number RW-061-92436201 - 0
37. Terms and Conditions, when included, are located at the end of the 1610-1, or as an attachment.		
Part V - Offer and Acceptance		
<p>Note: A) For Fund-out actions, the agreement/amendment must be signed by the other agency official in duplicate and one original returned to the Grants and IA Management Division for Headquarters agreements or to the appropriate EPA Regional IA administration office within 3 calendar weeks after receipt or within any extension of time that may be granted by EPA. The agreement/amendment must be forwarded to the address cited in item 29 after acceptance signature.</p> <p>Failure to return the properly executed document within the prescribed time may result in the withdrawal of offer by EPA. Any change to the agreement/amendment by the other agency after the document is signed by the EPA Award Official, which the Award Official determines to materially alter the agreement/amendment, shall void the agreement/amendment.</p> <p>B) For Funds-In actions, the other agency will initiate the action and forward two original agreements/amendments to the appropriate EPA program office for signature. The agreements/amendments will then be forwarded to the appropriate EPA IA administration office for signature on behalf of the EPA. EPA will return one original copy after acceptance returned to the other agency after acceptance.</p>		
EPA IA Administration Office (for administrative assistance)		EPA Program Office (for technical assistance)
38. Organization/Address U.S. Environmental Protection Agency IASSC East 1200 Pennsylvania Avenue, NW Mail code 3903R Washington, DC 20460		39. Organization/Address US Environmental Protection Agency ORD - Office of Research and Development 26 W MLK Dr Cincinnati, OH 45268
Award Official on Behalf of the Environment Protection Agency		
40. Digital signature applied by EPA Award Official FOR Frank N. Roth - Chief Michelle Messick - AO delegate		Date 08/05/2015
Authorizing Official on Behalf of the Other Agency		
41. Signature	Typed Name and Title Eddie Ahmad, Contracting Officer	Date 07/14/2015

Administrative Conditions

1. Resolution of Disagreements

Should disagreements arise on the interpretation of the provisions of this agreement or amendments and/or revisions thereto, that cannot be resolved at the operating level, the area(s) of disagreement shall be stated in writing by each party and presented to the other party for consideration. If agreement or interpretation is not reached within 30 days, the parties shall forward the written presentation of the disagreement to respective higher officials for appropriate resolution.

If a dispute related to funding remains unresolved for more than 30 calendar days after the parties have engaged in an escalation of the dispute, disputes will be resolved in accordance with instructions provided in the Treasury Financial Manual (TFM) Volume I, Part 2, Chapter 4700, Appendix 10, available at <http://www.fms.treas.gov/tfm/index.html>.

2. Cost Collection Upon Cancellation

If the IA recipient cancels the agreement, the Environmental Protection Agency is authorized to collect costs incurred prior to the cancellation of the agreement, plus termination costs, up to the total payment amount provided for under the agreement.

Programmatic Conditions

G.6., Completion study. Funding obligated to the IA are good until project is completed or IA expires.

CPSC- I-15-0023
INTERAGENCY AGREEMENT (IA)
BETWEEN THE
U.S. CONSUMER PRODUCT SAFETY COMMISSION
AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY

I. INTRODUCTION

The U.S. Consumer Product Safety Commission (CPSC) and the U.S. Environmental Protection Agency (EPA) hereby agree that the EPA, subject to the terms and conditions herein, shall conduct preliminary research to improve our understanding of:

1. The application and utilization of the CPSC wipe method for evaluating the release of engineered nanomaterials (ENM) from organic (wood), polymer, metal, and concrete/stone surfaces.
2. ENM surface coating applied to indoor/outdoor surfaces for protecting and preserving outdoor surfaces (wooden structures, concrete/stone materials, metals, and plastics) from ultraviolet (UV) radiation damage and indoor/outdoor surfaces for disinfection.

The research under this agreement will focus on: 1) application and utilization of the CPSC wipe method for comparison across (product) matrices and with different ENMs, 2) characterization of the nanomaterial(s) products either in development or currently available in the market place, 3) evaluate the potential for exposure from the use of the products identified through oral and inhalation exposure routes, through *in vitro* assays, of the as purchased, as applied, and wipe samples, 4) characterize the aerosol formation from application of ENM to surfaces, and 5) determine pulmonary, cardiovascular, and neurological response to inhalation of ENM during application and throughout the life cycle.

II. TITLE

Evaluation of CPSC Wipe Method and Exposure Estimate to Nanomaterials in Surface Applications: Surface Coating

III. BACKGROUND

The number of consumer products that contain nanomaterials continues to grow. One area that is seeing increased growth is the use of nanomaterials for surface applications. Surface applications may be broken down into 2 broad categories. The first category would include permanent surface application such as paints, stains or other coatings intended to protect or preserve the integrity of a surface. In this application ENMs are used to either modify the product for improved use/application (paints) or protect the underlying product from environmental or mechanical stressors (UV coatings, water protectants, or scratch resistant surfaces). The second category would include temporary surface applications in the form of polishes or biocides intended to disinfect surfaces or provide temporary surface protection. Both categories represent different types of nanomaterials (photoactive vesus biocide) with different potential exposure routes. While the continued use and application of temporary surface coating may result in prolonged exposure, the use of permanent applications will lead to prolonged exposure to ENM. A number of research projects have focused on the fate, exposure, and health effects of the pristine materials used in ENM surface coatings, however very little is known about the fate, exposure routes and health effects associated with ENMs in surface coatings. This project will offer the unique opportunity to utilize a transdisciplinary approach to explore how ENM in a product matrix differ from pristine materials while simultaneously evaluating methods for quantifying ENM release exposure and health effects.

The introduction of nano-enabled UV protectants is relatively new. Unlike the previous organic formulations, the materials are more stable and will not actively

degrade during UV absorption. The materials currently available on the market are targeted towards outdoor wooden structures, e.g. decks, outdoor furniture, and playground equipment. Based on the properties of the materials there is also the potential of applying them to other outdoor products to prevent UV damage—concrete/stone, plastics, metals. The amount of material used will vary based on the product (concentration of nano-materials) and the manufacturer's recommendation. Based on one product identified, when used according to manufacturer's recommendations, would result in a surface loading of close to 1250 mg m⁻². Complicating this issue is the potential for chemical interaction between surface coatings and the underlying substrate. In the case of wood, for example, outdoor structures may utilize micronized copper pressure-treated lumber. The potential for an interaction between the coating material and the treating formulation may alter the potential ecological or human health impact. For the current proposal, three separate nano-enabled UV protectant surface coatings will be evaluated. All of the coatings will initially be applied to wood surfaces. One of the coatings will contain cerium oxide (CeO₂) as the photoactive ingredient, a second coating will utilize zinc oxide (ZnO) as the active ingredient, and the third will utilize either titanium dioxide (TiO₂) or silicon dioxide (SiO₂) as the active ingredient.

Silver in the form of cooking and eating utensils has been used as an antimicrobial since ancient times. In addition, various forms of colloidal (1-1000 nm) silver mixed with silver ion and silver chloride particles has been used as an antimicrobial in various remedies and elixirs for the past century. Due in part to published synthesis techniques, characterization by electron microscopy, and effectiveness of their antimicrobial characteristics, silver particles in the Nanoscale size range (1-100 nm) can be easily produced and have been used in a wide range of consumer products ranging from fabrics to polymer products to disinfectant sprays. Studies have also shown that silver nanoparticles (AgNPs) are more effective per unit mass as a broad spectrum fungicide and bactericide than other forms of silver (e.g., Ag ion, AgCl or micron sized Ag particles). Consequently, AgNP in various nano-size ranges and formulated with various stabilizers have been incorporated into surface

disinfectant spray products. The mechanism of action for bacterial and fungal inhibition from AgNP appears to involve Ag ion. As a result, various forms of AgNP can be thought of as delivery systems for release of Ag ion at the target organism's biological interface. Due to their high surface area, silver nanoparticles appear to efficiently release Ag ions at the biological interface or inside of the cell through an oxidation-reduction reaction. Very little, however, is known concerning the release, chemical transformation, transport and potential exposure of the AgNPs used in consumer spray products. The current proposal will investigate typical use scenarios and define these processes to better predict the potential for human exposure to AgNP components of these NP-enabled disinfectant spray products.

IV. PURPOSE AND OBJECTIVES

The objectives of the proposed research are to: 1) Evaluate the use and effectiveness of the CPSC wipe method to quantify ENM release from different substrates. 2) Characterize the nano-enabled surface coatings and biocide products. 3) Determine potential exposure points and routes during product application and use. 4) Determine how environmental factors impact the integrity and/or efficacy of the nanomaterial and the potential long term exposure. The research will include estimates of product removal/release during application and due to environmental exposure, changes in the chemical speciation and composition of the material under different environmental conditions, and *in vitro* estimates of nanomaterial bioavailability through ingestion, inhalation, and dermal contact with the products throughout the product lifecycle. Currently, there are few methods that have been validated for assessing the potential eco or human exposure to nanomaterials. Therefore, a critical component of the research will entail exploratory research efforts to establish validated methods.

The purpose of the bactericide research component of this project will be to better understand the physical and chemical processes that may lead to direct and indirect exposures to AgNPs from the use of these disinfectant spray products in real world

scenarios. Small chamber work will be used to characterize the physical and chemical changes to the nanoparticles during the spray-deposition process. Surface wipes will be used to better understand the dermal transfer processes that may result from application of these products to horizontal and vertical hard and porous surfaces. Test room experiments will be performed to determine binding, identification and recovery of AgNP from flooring, test furniture and the more mobile dust phase. Products resulting from this research are expected to include methodology relevant to other nanomaterials in aerosol form as well as data that may be used to parameterize human exposure models such as SHEDS.

V. STATEMENT OF WORK

To address the objectives for this research effort, the EPA's Office of Research and Development will evaluate the CPSC wipe method for characterizing the release and exposure of ENM surfaces coating applied to organic (wood), plastic, metal, and stone/concrete surfaces of selected nanoparticles in UV protectant coatings applied to consumer product surfaces. Due to the size of the project the proposed research plan will be completed in two phases.

Phase 1:

- Characterization and evaluation of three different ENMs used for UV protections. Research will focus on cerium dioxide, zinc oxide, and either titanium or silicon dioxide. Each material will be thoroughly characterized as purchased, and under environmental conditions simulating application use and exposure.
- Determine the potential for release and/or transformation of the nanomaterials utilizing the CPSC wipe method and standardized leaching practices based on: material, application technique, concentration, and substrate (wood, plastic, and metal surfaces). Specific attention will be focused on application to wood surfaces exploring the EMN interaction on pressure treated and untreated lumber.

cerium or silicon dioxide. Each material will be thoroughly characterized and

- Determine the pulmonary, cardiovascular, and neurotoxicology of the as purchased materials.
- Following the same procedures outlined in Phase 1, research will focus on the aged materials. Specific attention will be focused on how changes in physicochemical properties effect fate, exposure, and health effects.

VI. EPA FURNISHED MATERIALS/EQUIPMENT

EPA agrees to furnish all necessary personnel, equipment, materials, services, and facilities to complete the objectives listed in Section IV.

VII. CONFIDENTIALITY REQUIREMENTS

The EPA staff will submit to the CPSC any report, manuscript or other document containing the results of work performed under this agreement before such document is published or otherwise disclosed to the public in order to assure compliance with Section 6(b) of the Consumer Product Safety Act (15 USC 2055(b)), Commission regulations (16 CFR Part 1101), and a Commission Directive (Order No. 1450.2). This clearance restricts disclosure of information that: (1) permits the public to identify particular consumer products, or (2) reflects on the safety of a class of consumer products. Prior submission allows the CPSC staff to ensure compliance with applicable disclosure provisions. EPA staff agrees to consult with CPSC staff and to provide any drafts of reports or presentation materials to CPSC staff for review and approval.

VIII. REPORTING REQUIREMENTS

EPA will provide an interim report at the end of each fiscal year. The first report will be due September 28, 2016. Updates on the status of the project will occur as requested by the CPSC staff through the time period of the IAG. A final report will be submitted to the project officer at the completion of the IAG.

class of consumer products. Prior submission allows the CPSC staff to ensure

IX. PERIOD OF PERFORMANCE

The period of performance for this agreement is 24 months from the last date of signature by both parties. This agreement may be modified by mutual consent of CPSC and EPA project officers.

X. DELIVERY OR PERFORMANCE

All deliverables required under the terms and conditions of this IAG shall be provided to CPSC. The activities planned under this agreement are expressly subject to the availability of funds and other necessary resources of the parties. EPA neither commits nor makes any obligation of funds pursuant to this agreement. An interim report summarizing all activities for this project will be submitted by September 28, 2016. A final report will be submitted to the project officer at the completion of the IAG (24 months from the date of execution).

XI. Authorities

The Authorities for this agreement are:

For EPA:

Toxic Substances Control Act, Section 10(d) which authorizes the Administrator of EPA to be responsible for research aimed at the development, in cooperation with other Federal agencies, or monitoring techniques which may be used in the detection of toxic chemical substances.

For CPSC:

September 28, 2016. A final report will be submitted to the project officer at the Section 27(g) of the Consumer Product Safety Act, (15 U.S.C. 2076(g)).

XII. DISAGREEMENTS

In the event that the CPSC and EPA have a disagreement arising under this Interagency Agreement, then the parties shall cooperatively seek to resolve the disagreement by themselves. If the disagreement cannot be resolved between them,

then the parties agree to seek the assistance of a third party in resolving the disagreement.

XIII. LIAISON OFFICERS

CPSC Liaison Officer

Trey A. Thomas, Ph.D.

Leader, Chemical Hazards Program

Office of Hazard Identification and Reduction

U.S. Consumer Product Safety Commission

4330 East West Highway Suite 600

Bethesda, MD 20814

Tel 301-504-7738

Fax 301-504-0079

Email: tthomas@cpsc.gov

EPA Liaison Officer

Todd Luxton PhD

National Risk Management Research Laboratory

Office of Research and Development

US Environmental Protection Agency

Cincinnati, Ohio

Phone 513-569-7210

Email: luxton.todd@epa.gov

XIV. COST AND TRANSFER OF FUNDS

The total estimated cost for Phase 1 of this IAG is estimated at \$375 K.

EPA Administrative Point of Contact:

Nicole Edwards, Acquisition Specialist

Partnership Management Branch,

Extramural Management Division, ORD/OARS

703-347-8546 (o)

703-347-8696 (f)

edwards.nicole@epa.gov

FUNDING AND ACCOUNTING DATA:

CPSC PAYMENT OFFICE

CPSC Accounts Payable Branch, AMZ-160

PO Box 25710

Oklahoma City, OK 73125

AGENCY PAYMENT OFFICER:

Debbie Young, Agency Payment Officer

Enterprise Service Center

Office of Financial Operations

Federal Aviation Administration

PO Box 25710

Oklahoma City, OK 73125

(405) 954-7467

Email: 9-AMC-AMZ-CPSC-Accounts-Payable @faa.gov

The transfer of funds shall be from CPSC to EPA through the On-Line Payment Collection (OPAC) system using the following accounting data:

Transfer From:

CPSC

BETC: DISB - FEDERAL AVIATION ADMINISTRATION

Taxpayer ID Number (TIN): 520978750

Agency Location Code (ALC): 61-00-0001

DUNS 069287522

US Treasury Code: 61150100

AMOUNT: \$ 375,000.00

ACCOUNTING DATA: 0100A15DSE 2015 2370400000 EXHR004000 255AO

To:

BETC: COLL

Taxpayer ID Number (TIN): 52-0852695

Agency Location Code (ALC): 68010727

DUNS: 029128894

US Treasury Code: 682/30107

AMOUNT: \$ 375,000

ACCOUNTING DATA: CAN 6999AJY

Grants Administrative Officer: Lenore Connell

APPROVED AND ACCEPTED FOR
THE U.S. ENVIRONMENTAL PROTECTION
AGENCY

BY:  _____

SIGNATURE: Frank Roth, Branch Chief
Fellowship, IA& SEE's Branch

TITLE:

DATE: 070515

APPROVED AND ACCEPTED FOR
THE U.S. CONSUMER PRODUCT
SAFETY COMMISSION

BY:  _____

SIGNATURE: Eddie Ahmad

TITLE: Contracting Officer

DATE: 7/14/15

BY:  _____

SIGNATURE: James Baker

Phone: 301-304-7575

TITLE: Budget Officer

DATE: 7/14/2015

Environmental Review for Extramural Projects

I. General Description

Descriptive Title: Evaluation of CPSC Wipe Method and Exposure Estimate to Nanomaterials in Surface Applications: Surface Coatings	Grant/Contract/Cooperative Agreement No. HQ7615012732
	<input checked="" type="checkbox"/> New Project <input type="checkbox"/> Renewal

Geographic Location (City/County/State)

Duration:	Grant	<input checked="" type="checkbox"/>	Interagency Agreement	Sole Source Contract
Contractor/Grantee:	Cooperative Agreement		Competitive Contract	

II. Description of Work

<input checked="" type="checkbox"/> Laboratory Study	Library/Literature Search	Bench Scale Operation	Other (Specify)
<input type="checkbox"/> Field Study	Pilot Plant Construction/Operation	Monitoring Study	

III. Environmental Review

A. Attach documentation to support the finding in items 1-12 as appropriate.

YES	NO	Item
<input checked="" type="checkbox"/>		1. The project is conducted completely within a laboratory or other facility, and external environmental effects have been eliminated by methods for disposal of laboratory wastes and safeguards to prevent hazardous material entering the environment accidentally. (If the answer is "yes" you do not need to proceed further with the environmental review. If the answer is "no", proceed by completing item "2" below.)
	<input checked="" type="checkbox"/>	2. The project is a relatively small experiment or investigation that is part of a non-Federally funded activity of the private sector, and it makes no significant new or additional contribution to existing pollution.
	<input checked="" type="checkbox"/>	3. The project may significantly affect the pattern and type of land use (industrial, commercial, agricultural, recreational, residential) or growth and distribution of population.
	<input checked="" type="checkbox"/>	4. The project may have significant adverse effects on wetlands including indirect and cumulative effects, or any major part of a structure or facility constructed or operated under the proposed action may be located in wetlands.
	<input checked="" type="checkbox"/>	5. The project may significantly affect threatened and endangered species or their habitats identified in the Department of the Interior's list, in accordance with 40 CFR 6.302 or a State's List, or a structure or facility constructed or operated under the proposed action may be located in the habitat.
	<input checked="" type="checkbox"/>	6. The project may directly cause or induce changes that significantly: (a) displace populations; (b) alter the character of existing residential areas; (c) adversely affect a floodplain; or (d) adversely affect significant amounts of important farmlands as defined in EPA's Policy to Protect Environmentally Significant Agricultural Land.
	<input checked="" type="checkbox"/>	7. The proposed project may directly, indirectly, or cumulatively, have a significant adverse effect upon parklands, preserves, other public lands, or areas of recognized scenic, recreational, archeological, or historic value.
	<input checked="" type="checkbox"/>	8. The project may directly or through induced development have a significant adverse effect upon ambient air quality; local ambient noise levels; surface water or groundwater quality or quantity; water supply; fish; shellfish; wildlife; and their natural habitats.
	<input checked="" type="checkbox"/>	9. The project consists of field test involving the introduction of significant quantities of toxic or polluting agricultural chemicals, animal wastes, pesticides, radioactive materials, or other hazardous substances into the environment by ORD, its grantees, or its contractors.
	<input checked="" type="checkbox"/>	10. The action may involve the introduction of species or subspecies not indigenous to the area.
	<input checked="" type="checkbox"/>	11. There is a high probability of an action ultimately being implemented on a large scale and this implementation may result in significant environmental impacts.
	<input checked="" type="checkbox"/>	12. The project involves commitment to a new technology which is significant and may restrict future viable alternatives.

B. Attach a list and description of any alternatives and mitigation measures considered in the environmental review.

IV. Decision

<input checked="" type="checkbox"/>	Completion and distribution of this form and supporting documentation constitutes a FNSI under 40 CFR 6.704(b)(2), if the environmental review resulted in a "yes" to either item 1 or 2 only; or the environmental review resulted in a "no" answer to items 3-12.
<input type="checkbox"/>	An EIS will be warranted if the environmental review resulted in a "yes" answer to items any of the items 3-12. If the agency decides to pursue this project, a notice of the agency's intent to prepare an EIS will be published in the Federal Register.

Project Officer

TODD LUXTON

Digitally signed by TODD LUXTON
DN: cn=US, o=U.S. Government, ou=USEPA, ou=Staff, cn=TODD LUXTON,
dnQualifier=000035829
Date: 2015.07.22 14:24:47 -0400

Date

Responsible Official

DAVID KOZLOWSKI

Digitally signed by DAVID KOZLOWSKI
DN: cn=US, o=U.S. Government, ou=USEPA, ou=Staff, cn=DAVID KOZLOWSKI,
dnQualifier=000043112
Date: 2015.07.22 14:36:00 -0400

Date

Division Director

Land Remediation and Pollution Control Division

Quality Assurance Review

Date Received: 04/08/2015 QA Log Number:
Technical Lead Person: Todd Luxton OMIS Task #:
Division: LRPCD LCO Tracking #:
Branch: WMB Reviewer:
Product Type: QAPP
Title: Characterization of nanoparticles in wood based consumer products and surface coatings

QUALITY ASSURANCE MANAGER'S RECOMMENDATION

Approved - No deficiencies were identified.

Land Remediation and Pollution Control Division

Observations were identified that must be addressed, but no additional QA review is required. See attached comments for additional instructions regarding an appropriate response.

Findings were identified that require resolution. A response must be provided for additional QA review. See attached comments for additional instructions regarding an appropriate response.

Definitions:

Finding - an identified deficiency that has a significant effect on the ability to attain the project/program objective

Observation - an identified deficiency that does not have a significant effect on the ability to attain the project/program objective.

COMMENTS/ATTACHMENTS:

Jim Voit/CI/USEPA/US
Quality Assurance Manager

04/22/2015
Date

See attached comments for additional instructions regarding an appropriate response.
Distribution History:

04/22/2015 10:26 AM Jim Voit sent to: Todd Luxton David Carson; copied to: Jim Voit

an identified deficiency that does not have a significant effect on the ability to attain

ORD Quality Assurance Review Form (QARF)

Title: Evaluation of CPSC Wipe Method and Exposure Estimate to Nanomaterials in Surface Applications: Surface Coatings

Originator: Todd Luxton

I. Type of Action		
<input checked="" type="checkbox"/> New or <input type="checkbox"/> Existing		
Non-contract Actions	Contract Actions	
<input type="checkbox"/> Cooperative Agreement <input type="checkbox"/> CRADA <input checked="" type="checkbox"/> Interagency Agreement <input checked="" type="checkbox"/> Funds In <input type="checkbox"/> Funds Out <input type="checkbox"/> Grant <input type="checkbox"/> Intramural	<input type="checkbox"/> Contract <input type="checkbox"/> Delivery Order <input type="checkbox"/> Simplified Acquisition <input type="checkbox"/> Task Order <input type="checkbox"/> Work Assignment	Vehicle #: Contractor:

II. General Information		
ID Number:	APM/APG:	
Does this action involve the collection, generation, use, and/or reporting of environmental data; the design, construction, and operation of environmental technologies; or development of software, models, or methods? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If no, go directly to Section VI.)		
Project Type:	Non-contract Actions	Contract Actions
<input checked="" type="checkbox"/> Scientific (Specify below.) <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Environmental Measurements <input type="checkbox"/> Use of Secondary Data <input type="checkbox"/> Models <input type="checkbox"/> Environmental Technology <input type="checkbox"/> Other: <input type="checkbox"/> Peer Review		
QA Category:	<input type="checkbox"/> I <input type="checkbox"/> II <input checked="" type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/> To Be Specified in Individual Actions	
Estimated Award \$:	375,000.00	Estimated Start Date: 09/29/2015 Estimated End Date: 09/29/2017
Participating Organization(s):	Consumer Product Safety Commission	Lead QA Organization: EPA

III. Status of QA Documentation		
<input type="checkbox"/> Exists	ID Number: L17845-QP-1-3 Title: Characterization of Nanoparticles in Wood Based Consumer Products QA Approval Date:	
<input checked="" type="checkbox"/> To Be Prepared	<input type="checkbox"/> New <input checked="" type="checkbox"/> Revision of Existing	Expected Submission Date: 09/01/2015

IV. QA Documentation Options: For solicitations, complete items 1-4; for all actions other than solicitations, complete items 3-4. All documentation specified under "Other" must be defined in the organizational Quality Management Plan and be consistent with requirements defined in EPA Manual 5360 A1 (CIO 2105-P-01-0). For all items checked below, there must be adequate information in the SOW (or its appendices) for the submitter to develop this documentation. Where applicable, reference a specific section of the SOW. (R-2 refers to EPA Requirements for Quality Management Plans (QA/R-2) (EPA/240/B-01/002, 03/20/01) and R-5 refers to EPA Requirements for Quality Assurance Project Plans (QA/R-5) (EPA/240/B-01/003, 03/20/01). Copies of these documents are available at http://www.epa.gov/quality/qa_docs.html.)

Before Award Documentation (Competitive Vehicles Only)

1.	<input type="checkbox"/>	Documentation of an organization's Quality System. Developed in accordance with either: <input type="checkbox"/> R-2 <input type="checkbox"/> Other:
	<input type="checkbox"/>	Combined documentation of an organization's Quality System and application of QA and QC to the single project covered by the contract. Developed in accordance with either: <input type="checkbox"/> R-2 and R-5 <input type="checkbox"/> Other:
2.	<input type="checkbox"/>	Programmatic QA Project Plan developed in accordance with either: <input type="checkbox"/> R-5 <input type="checkbox"/> Other:
	<input type="checkbox"/>	Application of QA and QC activities to the single project covered by the contract. QA Project Plan developed in accordance with either: <input type="checkbox"/> R-5 <input type="checkbox"/> Other:
	<input type="checkbox"/>	Not Applicable

After Award Documentation (Competitive Vehicles, Non-Competitive Vehicles, Intramural)

3.	<input type="checkbox"/>	Documentation of an organization's Quality System. Developed in accordance with either: <input type="checkbox"/> R-2 <input type="checkbox"/> Other:
	<input type="checkbox"/>	Combined documentation of an organization's Quality System and application of QA and QC to the single project covered by the contract. Developed in accordance with either: <input type="checkbox"/> R-2 and R-5 <input type="checkbox"/> Other:
	<input checked="" type="checkbox"/>	Not Applicable
4.	<input type="checkbox"/>	Documentation of the application of QA and QC activities to applicable project(s). Developed in accordance with either: <input type="checkbox"/> R-5 <input type="checkbox"/> Other: Supplement to the following Programmatic QA Project Plan:
	<input type="checkbox"/>	Programmatic QA Project Plan with supplements for each specific project, developed in accordance with:
	<input checked="" type="checkbox"/>	Existing documentation of the application of QA and QC activities will be used: Either: <input type="checkbox"/> Documentation developed pre-award <input checked="" type="checkbox"/> Documentation will be identified in individual Statements of Work <input type="checkbox"/> Documentation identified in Section _____ of the Statement of Work.

Special Comments: NRMRL will be responsible for developing and revising QAPPs for the first two and last objectives in Surface coating Phase 1. NHEERL will be developing QAPP documents for the third objective.

V. Incorporation of Requirements into Extramural Documentation

Are the QA documentation requirements specified on this form incorporated into the extramural documentation (RFA, RFP, SOW, etc.)? Yes No Not Applicable

For new actions, has the QA documentation required in Section IV of this form been included in the RFA, RFP, or SOW as an evaluation factor? Yes No Not Applicable

VI. Signatures Sign/date below, obtain a concurrence signature from the QA Staff, and submit the form along with the other extramural or intramural action documentation, as applicable.

Originator	CN=Todd Luxton/OU=CIO=USEPA/C=US	Date: 07/27/2015
Branch Chief (NERL Only)		Date:
QA Manager	CN=Jim Vol/OU=CIO=USEPA/C=US	Date: 07/27/2015

ORD Quality Assurance Review Form (QARF) Instructions

Title - Complete title of task or project; avoid abbreviations.

Originator – Identify the Technical Lead (e.g., Principal Investigator, Project Officer) or Contracting Officer Representative (COR).

I. Type of Action

Identify the action as **New or Existing**

New task orders or work assignments on existing contract vehicles are considered "new" actions.

For an existing (continuing) action with incremental funding where the scope of work is essentially unchanged, include a copy of the original QA Review Form in the procurement package (no new form is required); **however the QAM is still required to review the package.** The QAM signs and dates the copy to designate QA requirements have not changed. (It is also acceptable to generate a new form that indicates that QA requirements have not changed.)

For an existing (continuing) action with incremental funding where redirection calls for different QA requirements, a copy of the original QA Review Form should be attached to this QA Review Form.

Identify the specific type of Non-Contract or Contract Action

For an **IAG or CRADA**, the responsibility for QA must be negotiated within the agreement. The COR/Technical Lead Person in consultation with the QAMs in the various organizations must agree on, and document, which organization will take the lead for QA, the names of the QAM and Technical Lead/COR from each organization, and the QA requirements that will be adhered to during the agreement. This information needs to be included in the IAG/CRADA package.

II. General Information

ID Number: Indicate the ID Number as applicable to your organization. This can be the OMIS number, Task Information System (TIS) number, or QA tracking number which covers the project.

APM/APG: Indicate the applicable APM or APG

Indicate whether this action involves the collection, generation, use, and/or reporting of environmental data; the design, construction, and operation of environmental technologies; development of software, models, or methods; or the peer review of a product. If not, go directly to Section VI and sign the form.

Project Type: Choose one of two categories.

Scientific – Check box if action is for a scientific effort. Check the appropriate box to specify if the scientific effort involves Environmental Measurements; Use of Secondary Data; Environmental Technology; or Other. Complete all sections of this form and sign the form.

Peer Review – Check box if action is for the peer review of a scientific or technical product. Proceed to Section IV.4. and check "existing documentation identified in the SOW." In Special Comments, write "QA will be addressed in the peer review charge questions." Sign the form.

QA Category: The QA category is used to implement the "graded approach" to QA. Choose the appropriate category based on the intended use of the data. The categories are defined as follows:

Category I: Research which directly and/ immediately supports specific Agency rule-making

- Category II: Research of high programmatic relevance
- Category III: Demonstration or proof of concept projects; method validation studies
- Category IV: Basic, exploratory, conceptual research to study basic phenomena or issues

For some actions, specific QA documentation requirements will be specified in individual actions. If this is the case, check the appropriate box.

Estimated Award \$: For extramural actions, indicate the estimated award dollar amount.

Estimated Start Date: Indicate when the activities associated with this action will begin.

Estimated End Date: Indicate when the activities associated with this action will end.

Participating Organization(s): Identify all organizations who will participate in the activities associated with this action.

Lead QA Organization: Identify the organization which will have the lead for QA.

III. Status of QA Documentation

Indicate whether the required QA documentation **Exists** or needs **To Be Prepared**.

If the QA documentation exists, provide the required information (ID Number, Title, and QA Approval Date).

If the QA documentation needs to be prepared, indicate whether new documentation is required or existing documentation will be revised. If existing documentation will be revised, provide the required information (ID Number, Title, and QA Approval Date) in the previous row. In either case, indicate the expected submission date for this documentation.

IV. QA Documentation Options

Terms used:

Participating Organization(s): Identify all organizations who will participate in the activities associated with this action.

QMP - A Quality Management Plan (QMP) is a general description of an offeror's capabilities and approach to QA and is typically required as part of a RFP, but may be needed for large, complex in-house research programs.

QAPP - A Quality Assurance Project Plan (QAPP) describes the necessary QA procedures, quality control (QC) activities, and other technical activities that will be implemented for a specific project or program.

Typical Examples:

Large Contract solicitations: Require that full R2 QMPs be submitted with proposal and QAPPs be provided with the Work Assignments after award. Complete Section IV. as follows:

- IV.1 First line checked, first box checked.
- IV.4 First line checked, appropriate box checked. If Other, appropriate QAPP requirements as applicable to the specific ORD organization need to be specified.

Work Assignments for Category 1 and 2 Studies: R5 QAPP to be developed

- Skip IV.1 and IV.2
- IV.4 First line checked, first box checked.

Work Assignments involving Category 3 and 4 Research: Graded approach QAPP to be developed

Skip IV.1 and IV.2

IV.4 First line checked, appropriate QAPP requirements specified in Other.

Work Assignments involving continued research: QAPP already exists from previous WA

Skip IV.1 and IV.2

IV.4 Third line checked, third box checked and cite section of SOW referencing QAPP.

Small or Single Project Contract solicitations: A full R2 QMP would be excessive financial burden on the project budget but QAPP would be required after award.

IV.1 First line checked. "Other" specified, such as "existing quality management plan, quality manual or quality policy" or "NRMRL Quality System Specifications."

IV.4 First line checked, appropriate box checked. If Other, appropriate QAPP requirements as applicable to the specific ORD organization need to be specified.

Small or Single Project Contract solicitations: A full R2 QMP would be excessive financial burden on the project budget but QAPP would be necessary and required before award.

IV.1 Second line checked. "Other" specified, such as "existing quality management plan, quality manual or quality policy" or "NRMRL Quality System Specifications." Also add the following "Within the QAPP provide objective evidence of their quality system such as their existing quality management plan, quality manual or quality policy" or "Within the QAPP, address the NRMRL Quality System Specifications."

IV.4 Third line checked, first box checked.

Student Services Contracts: A QMP and QAPP are not required since this action does not directly result in the development of a product. However, the student working in a laboratory setting must comply with the requirements of the organizational QMP. Therefore, the Statement of Work needs to reflect this QA requirement. Suggested language to be included in the SOW: "The student contractor will be governed by the USEPA quality system, as described in the approved QMP for the organization where the student contractor is working. Work performed by the student contractor in a laboratory setting must be in compliance with the above referenced QMP. The Mentor is responsible for ensuring this compliance."

IV.4 Third line checked, third box checked and specify SOW section.

Work Assignments for conducting a Peer Review: A QMP and QAPP are not required since this action does not directly result in the development of a product. However, the peer review is a QA process and must evaluate the quality of the product and the sources of data and information used and discussed in the document undergoing peer review. Therefore, the Statement of Work needs to reflect this QA requirement.

IV.4 Third line checked, third box checked and specify SOW section. Add special comments below stating the charge questions will address QA.

V. Incorporation of Requirements into Extramural Documentation

Indicate whether all QA documentation requirements specified on the form have been incorporated into the extramural documentation. For intramural actions, indicate "Not Applicable."

For new actions, indicate whether the required QA documentation has been included in the extramural documentation as an evaluation factor. For intramural actions, indicate "Not Applicable."

VI. Signatures

Signatures of the Originator and the QA Manager are required. NERL also requires the Branch Chief's signature.

Audit Trail for

ORD Quality Assurance Review Form (QARF)

PDF Name: qarford071508v2.pdf

Form Number: ORD-111

Document Identifier: ORD-111-15208151104-TL

SUBMITTED on 07/27/2015 at 03:19:21 PM by CN=Todd Luxton/OU=CI/O=USEPA/C=US

APPROVED on 07/27/2015 at 03:41:55 PM by CN=Jim Volt/OU=CI/O=USEPA/C=US

COMPLETED on 07/27/2015 at 03:43:38 PM by CN=Todd Luxton/OU=CI/O=USEPA/C=US

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