

Settlement Agreement Status Report
July 15, 2009
NRDC v. Johnson,
U.S. District Court, Central District of California
No. CV06-4843 PSG (JTLx)

Pursuant to Paragraph 15 of the Settlement Agreement in the above-referenced matter, the United States Environmental Protection Agency (“EPA” or “the Agency”) provides this status report. It includes a description of the actions taken by EPA with respect to its responsibilities under the Settlement Agreement during the preceding six months (January 1, 2009-June 30, 2009) and a description of the actions EPA intends to take with respect to its responsibilities under the Settlement Agreement during the following six months (July 1, 2009 – December 31, 2009).

Settlement Agreement (SA) ¶ 4(a): Conduct epidemiological studies at POTW-impacted marine beaches in Fairhope, Alabama and Goddard, Rhode Island (P1, P2).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA conducted quality assurance/quality control (QA/QC) and analyzed the epidemiological data (i.e., water quality data and questionnaire responses). EPA began drafting a manuscript of the study results.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA intends to continue QA/QC and analysis of the water quality and questionnaire epidemiological data and will continue to prepare a manuscript appropriate for a peer reviewed publication.

SA ¶ 4(b): Provide technical assistance in support of an epidemiological study at a beach in Avalon, CA considered to be impacted by untreated human fecal contamination (P3).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

The Southern California Coastal Water Research Project (SCCWRP) initiated an epidemiological study and completed field research and water quality sample analysis at Avalon prior to the reporting period. EPA attended an Advisory Committee Meeting by phone and responded to multiple telephone inquiries from SCCWRP and University of California (UC) Berkeley co-investigators conducting the epidemiological study regarding data analysis and interpretation of epidemiology and microbiology data. Additionally, EPA reviewed the combined Avalon and Doheny Beach qPCR dataset from samples collected during the epidemiology studies.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to continue providing technical assistance to SCCWRP and UC Berkeley investigators, if requested, regarding data analysis and interpretation.

SA ¶ 4(c): Conduct QMRA (based on measurement of pathogenic organisms and indicators) to estimate illness at a freshwater beach impacted by agricultural animal sources of fecal contamination (location to be determined) (clarifying P4).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA identified sites and the types of field studies necessary to obtain fecal pathogens and indicators in support of the conduct of a Quantitative Microbial Risk Assessment (QMRA) to estimate illness at a fresh water beach impacted by agricultural animal sources of fecal contamination. EPA developed a Research Project Plan, entered into procurement contracts for support and analysis services, and purchased major pieces of equipment to support monitoring activities. EPA identified needed data inputs and began collection of data for additional QMRA inputs, such as background disease prevalence, infectivity, duration of incubation, and geographic and temporal variability of pathogens. EPA has completed development of QMRA inputs and assumptions for cattle and is developing inputs and assumptions for swine and poultry. In addition, EPA conducted an external peer review of a Microbial Risk Assessment framework for all water-based media to help frame and inform the QMRA.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA intends to run first and second rain simulation experiments and conduct on-site monitoring to obtain fecal pathogen and indicator data from cattle, swine, and poultry manure. EPA also plans to train technicians to do pathogen analysis that will support field activities. EPA expects to continue to refine the QMRA model and complete development of swine specific and poultry specific inputs and assumptions. EPA plans to submit the Microbial Risk Assessment framework for water based media to the Science Advisory Board (SAB) for review and comment and EPA plans to incorporate, as appropriate, comments from the SAB.

SA ¶ 4(d): Study various parameters that affect performance of qPCR signal for enterococci and compare with other methods and pathogens in treated wastewater mixed with ambient waters (enterococci, E. coli, Cryptosporidium, and enterovirus) (P8).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA ensured that technicians who will do molecular assays for this study completed qPCR training. EPA also completed sample collections for a dry run (for training purposes), and for Phase 1 laboratory analyses (samples taken of effluent, ambient waters, and mixtures). Laboratory analyses for both the training and Phase 1 samples began. EPA purchased supplies and equipment for use in the study.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA intends to review and approve the QA Plan that is needed and will then conduct a qPCR lab audit. EPA plans to conduct a Phase 2 sample collection that involves collection of effluent samples, ambient water samples and mixtures of treated effluent and ambient water. EPA plans to continue laboratory analyses of Phase 1 samples and begin laboratory analyses of the Phase 2 samples.

SA ¶ 4(e): Design and evaluate a monitoring approach that will characterize the quality of beach waters that takes into account the spatial and temporal variability associated with water sampling (P12).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA began conducting literature reviews to describe the spatial and temporal factors that are important to characterizing recreational waters. EPA also began examining factors that influence fecal indicator presence and location in water bodies to determine when and where best to sample water to help improve health protection. EPA initiated an evaluation of statistical tools to estimate the appropriate numbers and types of samples to determine if they can better inform recreational water monitoring protocols.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA will continue analysis of factors important to characterizing recreational waters and plans to use this information to develop a monitoring approach that would characterize beach water quality taking into account the spatial and temporal variability associated with water sampling to help users select the best monitoring approach to provide safe swimming. EPA plans to begin preparation of a study report.

SA ¶ 4(f): Evaluate multiple indicator/method combinations to develop quantifiable relationships (P15).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA began conducting literature reviews and analyses to determine the relationships between culturable and molecular enterococci analytical methods as well as other fecal indicators (e.g., *E. coli*, *Bacteroides* sp., *Clostridium* sp., coliphage) to determine any association with each other and their correlations to health risks from recreational water exposures.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA will continue the analyses to determine what fecal indicators and corresponding methods best correlate with each other and human health risks in recreational waters for CWA programs. EPA plans to begin preparation of a report of the literature review. EPA plans to begin contacting researchers to identify data sets which may inform correlation among indicator/methods and/or human health risks.

SA ¶ 4(g): Study the effects of sampling holding time, sample storage, and preservation on sample integrity for future use (P16).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA completed the collection of ambient freshwater and marine surface water fresh samples for the holding time study. Laboratory qPCR analyses for both the fresh and 6-month frozen filter samples were completed. EPA also performed a supplemental study to confirm the results of the holding time for fresh samples. EPA began preparation of a draft interim study report on the holding time for fresh samples.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to complete an interim study report on the holding time for fresh samples. EPA plans to begin laboratory analyses of the 1 year holding time for frozen samples.

SA ¶ 4(h)(1): Develop, refine, validate, and publish one or more new ambient test method(s) and (2) develop, refine, validate, and publish one or more new wastewater test method(s) provided the results of P8 and P18 indicate that a new wastewater test method is necessary (P17).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA developed and conducted a peer review of the Laboratory Validation Instructions and two analytical methods for new ambient water test methods. EPA began solicitation of contract laboratories to conduct validation of these methods. EPA has taken no action regarding the need for publication of one or more new wastewater test methods since the results of P8 and P18 are not yet available.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to identify contract laboratories and conduct the single-lab validation of two qPCR methods for ambient water testing.

SA ¶ 4(i): Evaluate the suitability of individual combinations of indicators and methods for different CWA programs (P18)

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA began preliminary internal discussions to determine if and how various possible options regarding the use of different indicators and the use of cultural and/or molecular methods for beach advisory programs and CWA requirements would impact these programs and to obtain input on possible implementation issues and approaches.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to identify and prioritize key issues and concerns that require follow-up and further evaluation. EPA plans to solicit input from various CWA program stakeholders on these issues during the fall 2009 stakeholder meeting.

SA ¶ 4(j): Re-analyze archived NEEAR samples using molecular methods for other indicators, including at least *E. coli*, provided the samples have not degraded during storage (depending on the outcome of P16 and the nature of indicator/method) (P22).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA has selected a general fecal and human indicator panel (including *E. coli*) for use with molecular methods for re-analysis of the NEEAR archived samples. EPA began laboratory analysis of the freshwater samples collected and archived from the Great Lakes epidemiological studies.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to continue laboratory analyses of the freshwater samples collected and archived from the Great Lakes epidemiological studies. EPA plans to begin laboratory analysis of archived marine filters.

SA ¶4 (k): Pilot test Virtual Beach model for beach notification and advisories/closures (P23).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

The Virtual Beach Model Builder (VBMB) is a model building tool which is designed to provide the public with beach-specific predictive models. EPA pilot tested VBMB in developing site-specific predictive models at the beaches described under P24 and P25. EPA also participated in a workshop in Wisconsin to pilot test the use of VBMB and obtain feedback on its use from Wisconsin beach managers. EPA consulted monthly with NOAA, USGS, and Great Lakes beach managers to refine the freshwater beach applications of the Virtual Beach Model Builder (VBMB). EPA expanded efforts from the pilot study by collecting data and using the Virtual Beach tool to develop a model for La Monserrate Beach in Puerto Rico.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to improve Virtual Beach 1.0 to Virtual Beach 2.0 by updating programming language, integrating Model Builder and Beach Adviser, and adding additional modeling and statistical capabilities. EPA in collaboration with the State of Wisconsin will hold a workshop on use of the Virtual Beach tool for building models at Great Lakes beaches as part of the Great Lakes Beach Association meeting in Milwaukee during September 2009. EPA plans to continue improving VBMB by integrating the research from this project with other research from the studies described in **SA ¶4 (l) & (m)** (P24 and P25) into a report.

SA ¶ 4(l): Refine and validate existing water quality models for freshwater beach notification and advisories/closures (P24).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA refined models developed by USGS for Ogden Dunes and West Beaches, IN, and a model developed by the City of Milwaukee for South Shore Beach, WI. EPA completed analyses of UV attenuation, spectral, and DOC measurements that were obtained during 2008 at Ogden Dunes Beach and West Beach, IN. EPA also completed QA evaluation of microbial, meteorological, water quality, UV, and current data obtained at South Shore Beach, WI, during 2008. EPA refined the models by using the new types of data obtained in 2008 and validated these models using VBMB.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to begin to prepare a report that will integrate results of **SA ¶4(l)** (P24) with other results of **SA ¶4(k)** and **SA ¶4(m)** (P23 and P25).

SA ¶ 4(m): Refine and validate other existing water quality models for marine beach notification and advisories/closures (P25).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA completed qPCR measurements of filters collected at Hobie Beach and La Monserrate Beach (as part of the pilot test described in SA ¶4(k)). Prior to this reporting period, EPA refined and validated the persistence water quality models that were being used at these beaches and presented the results of its modeling studies at marine beaches at the National Beach Conference and Research Forum during April 2009 ("Predictive Modeling of a Fecal Indicator at a Subtropical Marine Beach" and "Impact of Urban Runoff on the qPCR Signal of Enterococci and Other Alternative Fecal Indicators at a Tropical Beach").

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to finish model validation studies using 2008 data obtained with automated equipment at marine beaches. EPA plans to begin to prepare a report that will integrate results of SA ¶4(m) (P25) with other results of SA ¶4(k) and SA ¶4(l) (P23 and P24).

SA ¶ 4(n): Develop technical protocol for site-specific application of predictive models to be used in making beach advisory decisions (P26).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA began collection and evaluation of information on predictive models currently in use in the United States.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to prepare an outline for a Technical Protocol.

SA ¶ 4(o): Compare EPA's 1986 Bacteria Criteria recommendations to NEEAR studies to better understand the relationship between fecal contamination and illness in these data sets, provided EPA can obtain the raw data used to develop the 1986 Criteria (P27).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

Pursuant to ¶ 5(a) of the Settlement Agreement, EPA is hereby notifying the other parties of EPA's determination that it cannot complete this study due to the contingency identified and the basis for that determination. The summary level data used to develop and establish EPA's 1986 criteria recommendations are available; however, the raw individual data points needed to conduct the analyses described in paragraph 4(o) of the Settlement Agreement could not be obtained. EPA was unsuccessful in its search for the fresh water data in its Cincinnati labs. Although some of the data were stored on magnetic tapes, it could not be accessed because the tapes had degraded. EPA also contacted a former EPA employee, Dr. Victor Cabelli, of EPA's Health Effects Research Lab (West Kingston, RI) in an attempt to obtain the raw data for the marine studies. Dr. Cabelli referred EPA to the University of Rhode Island Microbiology lab, where he was employed from 1979-1995 to request the data. EPA made several attempts to obtain the marine data from the University of Rhode Island laboratory but was unable to obtain the raw data. Because there are no other sources within EPA or outside of EPA that is likely

to have the data, EPA has determined that it is unable to obtain the raw data used to develop the 1986 criteria.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

No further action will be taken with respect to this provision.

SA ¶ 4(p): Evaluate applicability of NEEAR Great Lakes data to inland waters (P28).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA developed a preliminary report of literature reviewed on the persistence, ecology, fate and behavior of indicators and pathogens in inland waters relative to other waters. EPA supported and participated with approximately 30 national and international experts in the Water Environment Research Foundation (WERF) Inland Waters Experts Scientific Workshop in February 2009. EPA identified potential projects to support applicability of the new criteria to fresh waters, including flowing fresh waters and lakes, and initiated work to evaluate monitoring schemes specific to flowing fresh waters. EPA is evaluating the feasibility of other related projects.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to finalize and post the literature review on persistence, ecology, fate and behavior of indicators and pathogens in inland waters on the Agency's website. EPA plans to continue work to evaluate monitoring schemes specific to flowing fresh waters and will consider initiating other related inland water projects based on that evaluation.

SA ¶ 4(q): Conduct statistical analysis of children data from epidemiological studies (P29).

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA began to perform an epidemiological statistical analysis and interpretation of data on children's health effects from epidemiological studies of POTW-impacted marine beaches in Biloxi, MS; Fairhope, AL; and Goddard, RI (SA ¶ 4(a)) (P1, P2).

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to complete the statistical analysis of children's data from the marine epidemiological studies at beaches in Biloxi, Fairhope, and Goddard, and include the results in a manuscript appropriate for a peer reviewed publication.

SA ¶ 6: When it completes a study described in Paragraph 4 of this Agreement, EPA will provide written notice to the other Parties, including a summary of the study and findings, and a statement that the study has been completed. This Paragraph does not apply to the study described in Paragraph 4(b), which is not being conducted by EPA.

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA did not complete any study described in Paragraph 4 of the Settlement Agreement, and therefore EPA did not provide any written notice to the parties pursuant to paragraph 6 of the Settlement Agreement.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA does not plan to complete any study described in Paragraph 4 of the Settlement Agreement during this reporting period.

SA ¶ 7: If an epidemiological study proposed by the Southern California Coastal Water Research Project (SCCWRP) for Doheny Beach is initiated by SCCWRP no later than December 2009, EPA will provide technical assistance on study design and analysis.

Actions Taken By EPA from January 1, 2009 to June 30, 2009

SCCWRP initiated an epidemiological study and completed field research and water quality sample analysis at Doheny prior to the reporting period. EPA provided technical assistance to SCCWRP on study design prior to the reporting period. During the reporting period, EPA attended an Advisory Committee Meeting by phone and responded to multiple telephone inquiries from SCCWRP and University of California (UC) Berkeley co-investigators conducting the epidemiological study regarding data analysis and interpretation of epidemiology and microbiology data. Additionally, EPA reviewed the combined Avalon and Doheny Beach qPCR dataset from samples collected during the epidemiology studies.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to continue providing technical assistance to SCCWRP and UC Berkeley investigators, if requested, regarding data analysis and interpretation.

SA ¶ 9(a): Continue to conduct research currently underway to identify genetic sequences that could form the basis of chicken and seagull specific fecal source assays

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA compiled existing assays, both from internal and external sources.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to select a limited number of assays and start to evaluate them for their potential to uniquely identify specific avian sources of fecal contamination.

SA ¶ 9(b): If EPA determines that it can develop chicken and seagull specific fecal source assays, EPA will evaluate the assays for specificity and sensitivity using a reference collection of fecal samples, as well as environmental water samples with known sources of fecal contamination.

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA has not yet determined whether it can develop chicken and seagull specific fecal source assays and therefore, EPA did not take any actions with respect to this provision during this reporting period.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA has no actions planned during this time period with respect to this provision.

SA ¶ 9(c): No later than July 15, 2011, EPA will notify the other Parties in writing whether EPA was able to develop the assays and evaluate the assays as described in subparagraph 9(a). If EPA is able to complete the evaluation by July 15, 2011, the notification will include a brief summary of such evaluation.

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA did not take any actions with respect to this provision during this reporting period.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA has no actions planned during this time period with respect to this provision.

SA ¶ 10(a): Subject to any statutory or regulatory limitations restricting the distribution of confidential business information or private information (e.g., names, addresses), EPA will provide access to data from the studies identified in Paragraph 4 of the Settlement Agreement and paragraph 5 of the Consent Decree after EPA has conducted any quality assurance/quality control review and, as deemed necessary by EPA, internal and external peer review, including addressing the comments of such review. EPA may determine to provide access to the data by notifying the Parties in writing that the data are available for their review and its location, or by other method of transmission.

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA did not take any actions with respect to this provision during this reporting period.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA intends to initiate preparations of a database and a codebook for interpreting the variable names and code data for the Fairhope, AL, Goddard, RI and Biloxi, MS marine epidemiological studies.

SA ¶ 10(b): Subject to any statutory or regulatory limitations restricting the distribution of confidential business information or private information (e.g., names, addresses), EPA will provide access to data from the epidemiological studies previously conducted by EPA in support of the new or revised recreational water quality criteria no later than June 15, 2009. EPA may determine to provide access to the data by notifying the Parties in writing that the data are available for their review and its location, or by other method of transmission.

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA completed final QA/QC of the data from the freshwater epidemiological studies database. EPA drafted a codebook for interpreting the variable names and codes prepared in a manner suitable for plaintiff access. EPA notified the other parties that this would be available upon request after June 15, 2009. EPA proposed to provide access to the data from EPA's epidemiological study in Biloxi, MS when EPA provides access to the data from the Fairhope, AL and Goddard, RI epidemiological studies and the other parties agreed to EPA's proposal.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans no further actions for the time period with respect to this provision.

SA ¶ 11: EPA will convene a stakeholder workshop or other mechanism for stakeholder input during 2009, 2010, and 2011. These workshops will provide an opportunity for Plaintiff, Intervenor, and other interested stakeholders to provide input to EPA and/or bring issues to EPA associated with the development of the new or revised criteria to be issued by October 2012. EPA expects these issues to include issues related to implementation of the new or revised water quality criteria EPA will publish in 2012. The focus of the 2009 and 2010 workshops will be for EPA to update stakeholders on the progress EPA has made in completing studies and framing the issues associated with the development of the new or revised criteria and for Plaintiffs, Intervenor, and other interested stakeholders to comment on EPA's update. The focus of the 2011 workshop will be to provide an opportunity for Plaintiff, Intervenor, and other interested stakeholder to comment on EPA's evaluation, synthesis, summarization and statistical analysis of the studies and development of options for the overall structure and content of the recreational water quality criteria that EPA will publish in 2012.

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA began identifying potential locations and facilities with availability and capacity for a stakeholder meeting in September or October of 2009. EPA began the process to identify a facilitator and started development of a registration system.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA will finalize selection of location, facility and dates for the 2009 stakeholder meeting. EPA will finalize the meeting format and agenda, develop materials, prepare and distribute a meeting announcement, and provide registration information. EPA will conduct the stakeholder meeting.

SA ¶ 12: EPA will validate and publish a rapid test method for the new or revised criteria by October 15, 2012. Validation of a rapid test method will involve conducting an inter-laboratory study, the purpose of which is to characterize method performance (including recovery and precision) for a rapid method in reference matrices and ambient recreational waters (fresh and marine) in multiple laboratories and to develop quantitative quality control acceptance criteria.

Publication does not include promulgation of an EPA-approved test method in the Code of Federal Regulations.

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA took steps to initiate single laboratory validation of two rapid test methods, which is a precursor to a multi-laboratory validation study and publication of the methods (see response for ¶4 (h) (P17)).

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA plans to conduct the single lab validation of two qPCR methods for ambient water testing.

SA ¶ 13: EPA will review epidemiological studies of swimming-related health risks due to fecal contamination that are completed by entities other than EPA, including, but not limited to, studies of runoff-impacted beaches and beaches impacted by avian sources, if the results are made known by EPA by December 2010. EPA will consider any relevant study findings in developing recreational water quality criteria. EPA will either incorporate the relevant study findings into the recreational water quality criteria or explain, in its notice of proposed new or revised water quality criteria and solicitation of public comment, the reasons why such study findings are not appropriate for incorporation into the recreation water quality criteria.

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA completed a literature review to identify epidemiological studies that have been completed by entities other than EPA and which contain relevant study findings for purposes of developing new or revised recreational water quality criteria.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA intends to continue to identify and begin to evaluate epidemiological studies completed by entities other than EPA for use in informing development of new criteria. EPA plans to review study results from an epidemiological study conducted in Europe (Epibathe), if they are available. In addition, EPA is aware of epidemiological studies currently being conducted and plans to continue to monitor progress so they may be evaluated if completed before December 2010.

SA ¶ 14: No later than December 15, 2011, EPA will convene an Experts Scientific Workshop involving both EPA scientists and external scientists for the primary purpose of obtaining input on what future science and research might be conducted to further improve the understanding of potential human health risks from exposure to fecal contamination from avian wildlife and other wildlife in coastal recreational waters. If the experts at the Experts Workshop identify one or more studies that might be conducted to further improve the understanding of the potential health risks from exposure to fecal contamination from avian wildlife or other wildlife, EPA shall evaluate whether the studies should be performed as part of the Agency's review (between 2012 and 2017) of the criteria that EPA will publish

in 2012, and EPA shall advise the parties to this Agreement of the results of EPA's evaluation no later than December 15, 2012.

Actions Taken By EPA from January 1, 2009 to June 30, 2009

EPA did not take any actions with respect to this provision during this reporting period.

Actions Planned By EPA from July 1, 2009 to December 31, 2009

EPA does not plan any actions for the time period with respect to this provision.

The undersigned, Denise Keehner and Charles I. Noss are, respectively, the Director, Standards and Health Protection Division, Office of Science and Technology and National Program Director for Water Quality, Office of Research and Development. The Office of Science and Technology in EPA's Office of Water and the Office of Research and Development have primary responsibility for discharging EPA's duties under the Settlement Agreement. This report reflects our best current information concerning the actions taken by EPA with respect to its responsibilities under the Settlement Agreement during the preceding six months (January 1, 2009-June 30, 2009) and a description of the actions EPA intends to take with respect to its responsibilities under the Settlement Agreement during the following six months (July 1, 2009 - December 31, 2009).



Denise Keehner, Director
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7/14/09
Date



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7/13/09
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